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   Pennsylvania farmer, vol. 44
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Author: Pennsylvania farmer

Title: Pennsylvania farmer, vol. 43

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300    v. $bill. $c55 cm.
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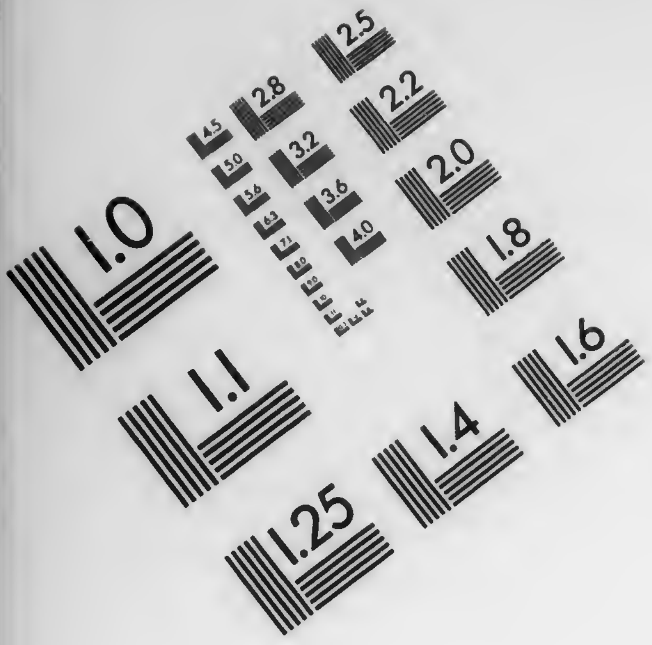
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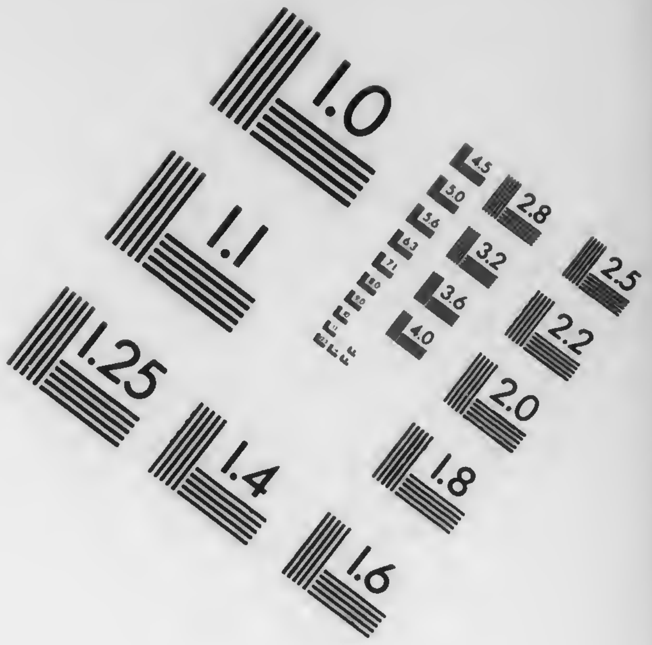
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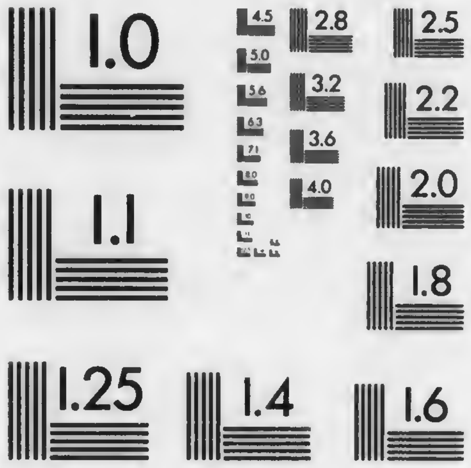
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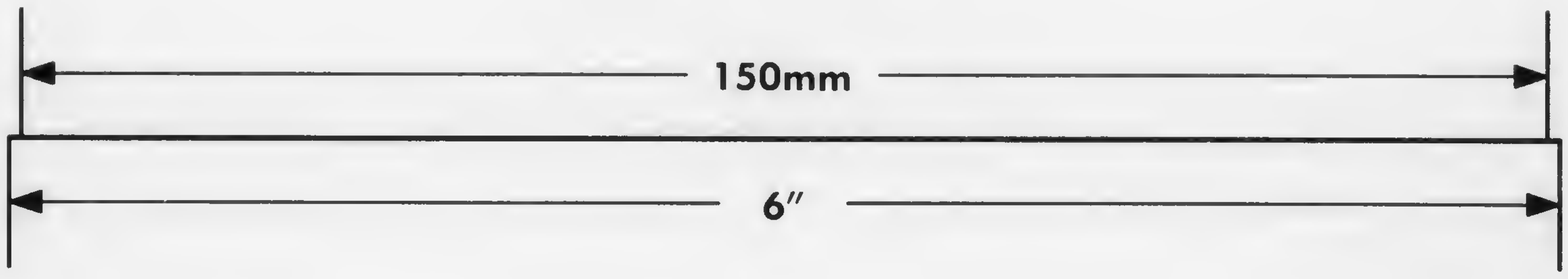

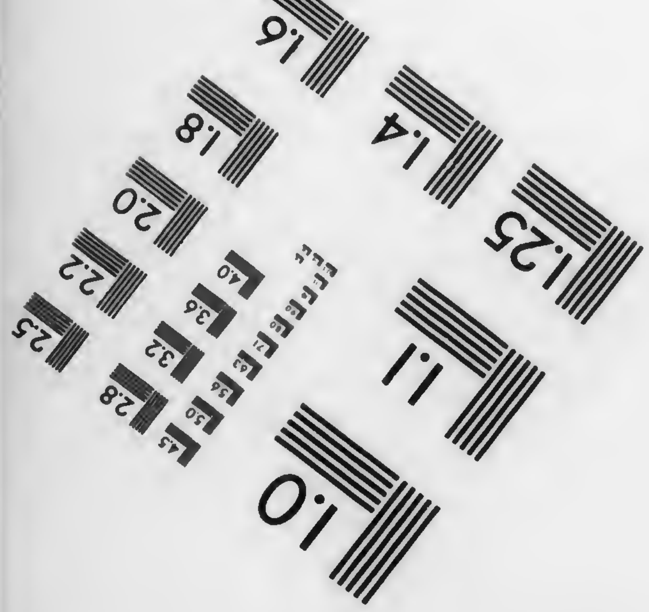
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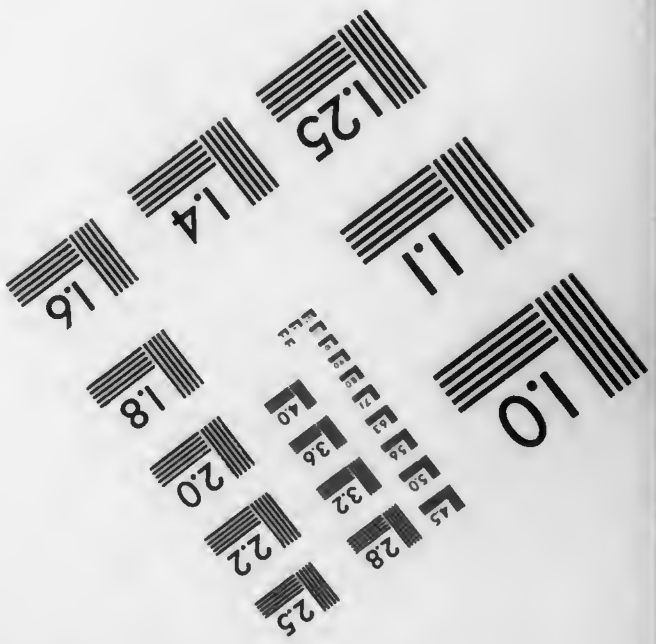
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Volume 43, 1918

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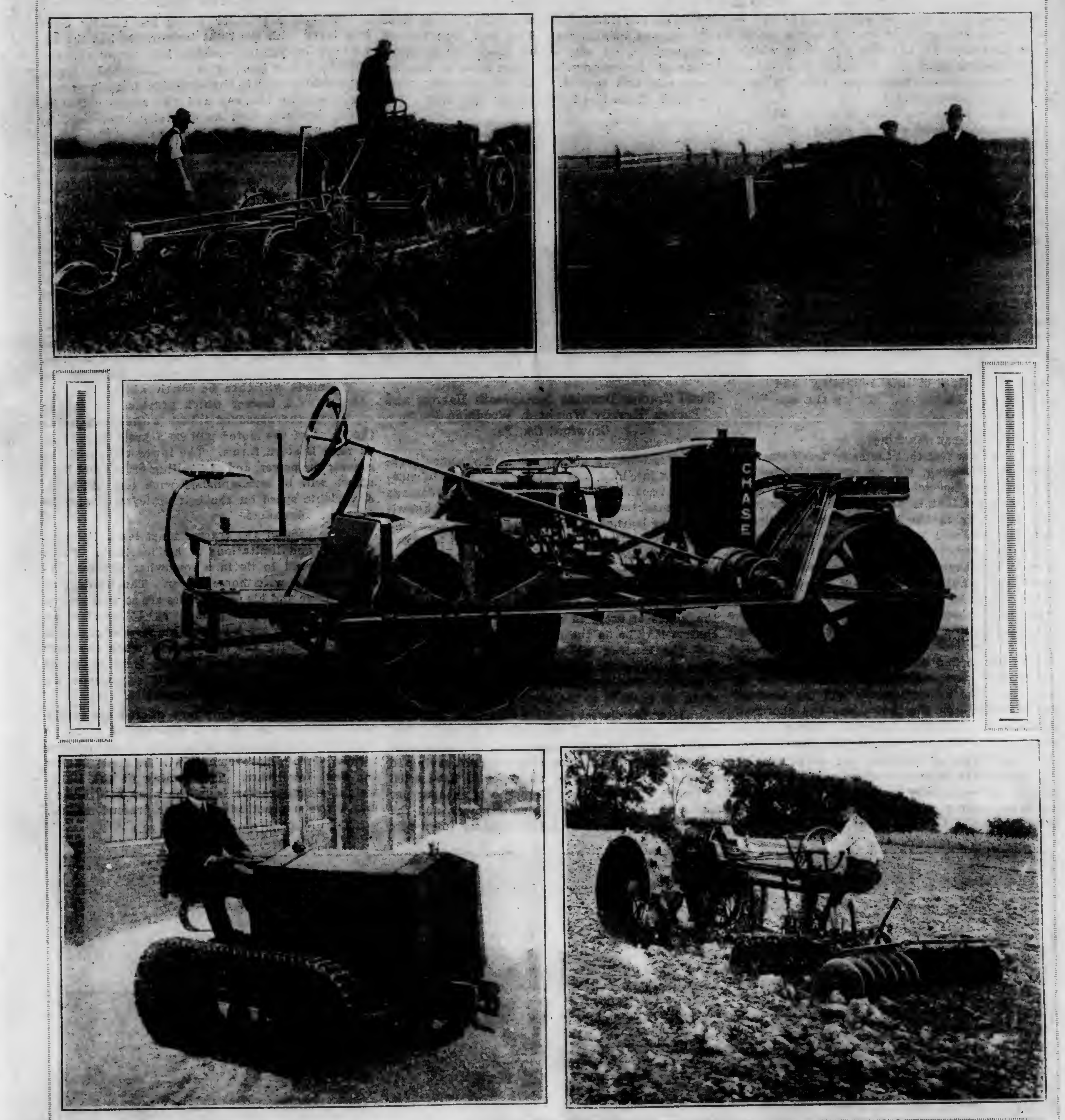

Five Types of Tractors in Common Use

The Coming of The Tractor

Essential Points in Buying and Handling the Tractor in the East

By J. T. CAMPBELL

CRAWFORD CO., PA.

The high prices and scarcity of labor at the close of the Civil War ushered in the era of the general use of the reaper. Likewise, the demand of the world for foodstuffs and shortage of farm labor incident to the present world conflict will bring a rapidly growing demand for the farm tractor. As near as can be determined, there were probably about eight hundred farm tractors in Pennsylvania last season, and there would have been more had manufacturers been able to deliver them promptly. Out of this unmber, there are a few that have not, nor ever will give satisfactory service, and their use has been largely abandoned. The chief cause of this condition has been the unwise purchase of poorly constructed and experimental machines, and the purchase of machines not adapted to the work demanded of them. Only a few months ago I talked with a farmer who was led, thru extravagant claims, to buy a machine much advertised at that time, a machine which it was evident to every man who was in close touch with tractor development, was faulty in design and poor in construction.

I have had opportunity to study the tractor development over a pretty wide field, and I propose in this article to deal with the plain facts as I find them, viewing the most vital points from the farmers' standpoint. Farmers are often led to make unwise purchases thru extravagant advertising and smooth-tongued salesmen and when the money is in the pocket of the seller it is impossible to secure full consideration from the complaint of the purchaser. The way to avoid such losses is to have the machine put on your farm and tried out thoroly before settlement is made, or know that the machine has proved satisfactory in the hands of others similarly situated. Then, too, it is well to know something of the reliability and character of the concern offering the machine.

Freak Machines

I somehow feel that the early freak machines are rapidly passing, and an era of standardized and entirely dependable machines is at hand. Some of the machines first offered did fine plowing, especially in the hands of the experienced demonstrator, and were well nigh worthless for any other purpose. I have recently met a few farmers who bought machines of a freak type that plowed all right, but could not be steered over plowed land on account of faulty steering construction. Others were unable to use the machine for road hauling and one could not get enough speed on the belt for practical work. When a farmer has to find out these shortcomings by experience he pays entirely too much for the experience. The advertisements and the salesmen do not enlarge on the limitations and shortcomings of their machines. The wise farmer will investigate thoroly and avoid loss and annoyance.

Other types of machines can be satisfactorily turned only in one direction, and an attempt to turn the other way is likely to result in the machine toppling over. The necessity of always being compelled to turn in one direction will result in much inconvenience and difficulty, which will soon be apparent when the machine is put to work. Some of the machines, otherwise satisfactory, cause much loss and annoyance by breakage of expensive parts.

Tractors with exposed or open gears are generally to be avoided. The very best material and construction will wear rapidly in the dust and grit which clings to them in field work. Gears working in oil, in dust-proof casings, will cost more and prove a good investment.

Lubrication

The lubricating system of the tractor is of the highest importance. This will soon become apparent when a man begins to use the machine. Many of the tractors have been more or less defective in this respect. The oiling system must be both efficient and sure in its operation. The tractor is working almost constantly under practically a full load, and any defect in the lubrication will soon manifest itself in wear and damage to the machine, as several farmers to my knowledge have learned to their sorrow. One man said he was compelled to shut down at short intervals for oiling which soon becomes irksome and is likely to be neglected and the machine's life shortened as a result. I am here briefly pointing out some of the weak points that have developed in the hands of users in order that intending purchasers may be on the lookout for them.

Small Tractor Drawing Springtooth Harrow and Packer, Heavily Weighted, Woodbine Farm, Crawford Co., Pa.

The kind of oil used in the machine will have much to do with the machine lubricating properly. The careful man will see that he is using oil adapted to the machine.

After the closest possible study and the most reliable information I am able to secure, it remains a very doubtful question if, at the present time, there is an economy or permanent saving in the use of kerosene over gasoline. I have tried to get at all the facts. Kerosene is cheaper per gallon and theoretically has more power, and the demonstrator can show great economy for a few hours or a few days' operations; but it is the long run that counts. There is little doubt that the use of kerosene shortens the life of the motor very materially and increases the upkeep expense while increasing the cost of lubrication. At any rate, if it is desired to use kerosene as fuel, it will be wise to buy a tractor with a motor especially constructed for burning kerosene. And do not attempt to use kerosene in a motor built to operate on gasoline. At the recent Freemont demonstration an attempt was made by careful men to find out if there is any economy in the use of kerosene, and the general opinion of careful students of the subject seems to be that it is doubtful to say the least.

Cylinder Types

The four cylinder motor has rapidly come into favor with the light tractor. It has the advantage of lighter weight, less vibration, and possibly better lubrication. Possibly the wear of the machine, due to the vibration from the heavy explosions in the one and two-cylinder motors, has not been as carefully considered by purchasers as it should be.

The farmer buys tractor with the expectation that it is doing real work and plenty of it, and it is foolish to expect the poorly-constructed, make-shift affair of any kind to be satisfactory or an economical investment. The construction should be as good as that which goes into an automobile, and the purchaser cannot expect to get this kind of construction at a low proce. The get-at-able-ness of the machine for repairs and adjustment is a point of no inconsiderable consequence. Every machine will need both repairs and adjustment after being used for a time. The readiness with which these can be made will then be worth while.

A tractor which provides for change in the speed of travel without changing the speed of the motor will be a great advantage on most Eastern farms. The lower the speed the greater the power, and the pulling grades and hard places will be accomplished with less difficulty. A variable speed on the belt pulley will also be found an advantage.

The user of the tractor must learn the possibilities and limitations of his machine. These will be found to lie in a somewhat different direction than with horse power. The limitations of the horse and his possibilities are so well known by the experienced farmer as to receive no thought. They are a part of his farm experience. Experience with the tractor will teach the user what to expect of it and what it is incapable of accomplishing. In gaining this experience we must expect to encounter difficulties.

Many of the tractors now offered are pretty well tried out and so well constructed as to be an economical proposition on many of our eastern farms. Great improvements will be made during the next few years. The coming of the light-weight steam tractor is in the near future, and may prove a great advance over present models,

(Continued on Page 10.)

Concerned But Comfortable In Contemplation of the Job They Used to Have

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Practical Tractor Hitches--*By H. L. Gaddis*

So rapidly has the tractor become a necessary part of farming equipment that it needs no introduction here. It is a more satisfactory source of power than the horse because as a rule it delivers this power at a much lower cost while doing work and while not at work does not cost a cent. Furthermore, because it combines a greater amount of power into a single compact unit in the control of one man, it solves to a great extent the hired help problem if combination of farm machines are made to utilize this power to the best advantage.

Farm machinery of today has been designed for the use of horses, so what is presented here is meant to be a suggestion to the individual tractor owner to help him work out his hitch problems with a greater degree of success. In many cases, hitches along the lines suggested here can be made by the farmer, if he will take time to study carefully his own requirements.

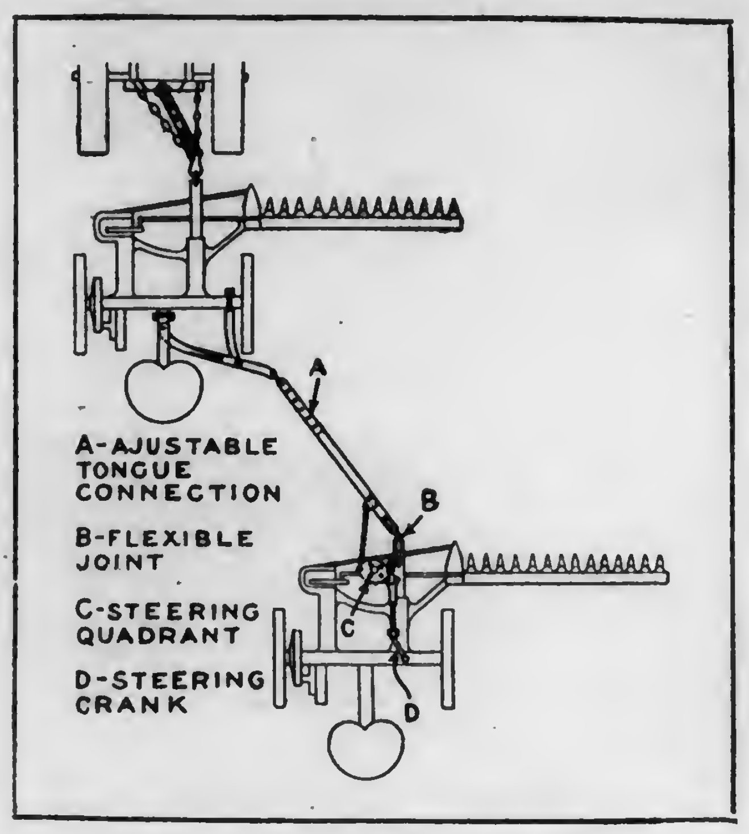


Fig. 7—Special Mower Hitch

Machines Need No Special Hitch

A number of machines now used on the farm with horses can be used to advantage behind the tractor without requiring a specially designed hitch. Plow manufacturers take care of the equipment necessary to attach plows, and for the ordinary types of drag harrows the drawbar which comes regularly with such a harrow is all that is necessary, except where an unusually large number of harrow sections are used as one harrow.

Tractor disks and tandem disk harrows also require no special hitch. The only point to be taken into consideration here is that a tandem disk harrow equipped with a forecarriage should have a flexible connection long enough to permit the tractor to drop down into a depression without throwing this added weight upon the forecarriage of the disk harrow. Forecarriages are really unnecessary with tractors. Likewise no special hitch other than a stub tongue is necessary for a single binder, manure spreader or wagon, or a single wagon and hay loader combined. When more than a single unit of these various types of implements is to be used behind a single tractor, some special hitch is necessary.

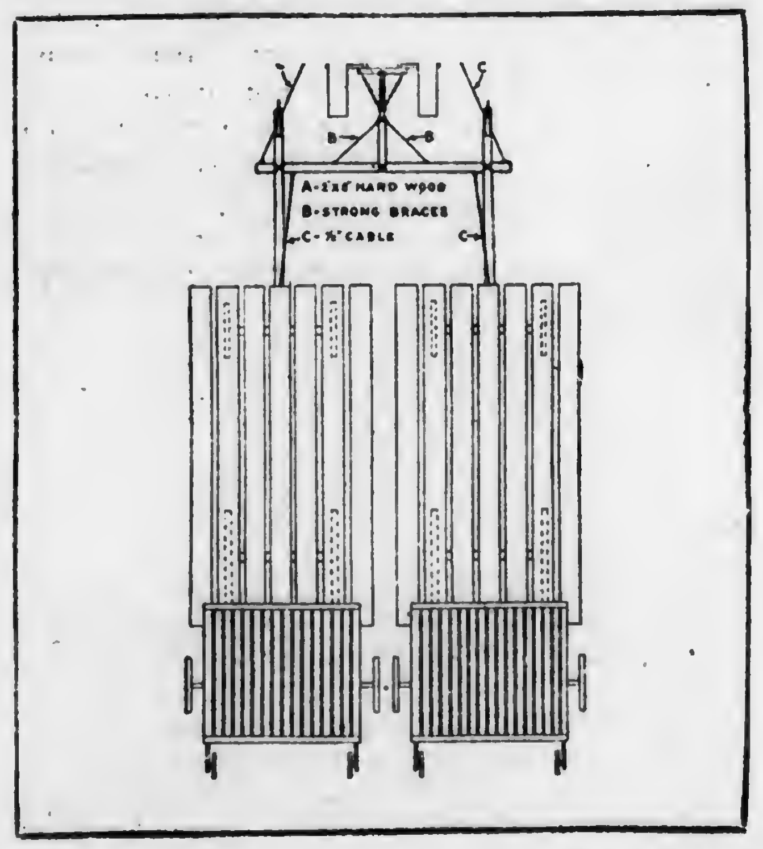


Fig. 4—Hitch for Two Wagons, Hay Loaders, Manure Spreaders, Etc.

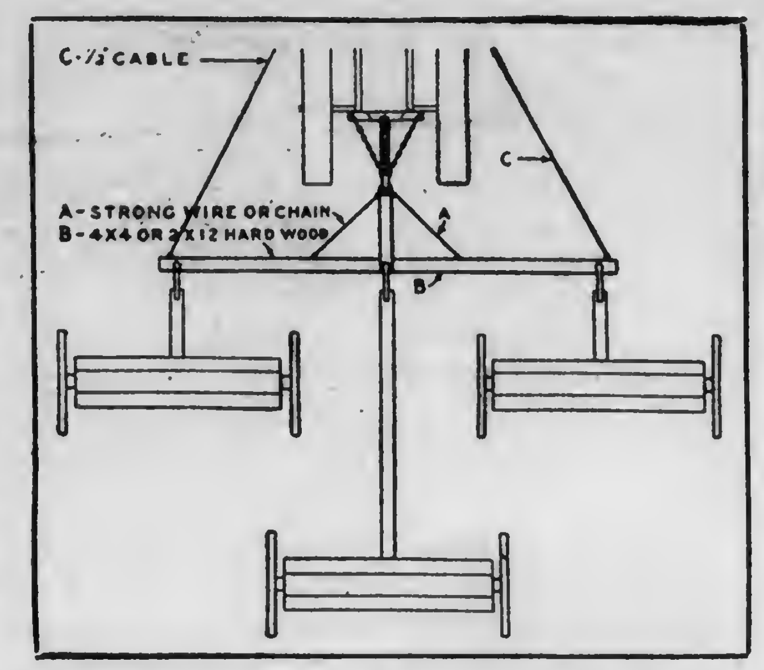


Fig. 3—Fliating Drawbar Hitch for Three Drills

A General Utility Drawbar

Every owner of a farm tractor will need some sort of a general purpose drawbar so he can attach various machines to the tractor. Such a drawbar should be as simple as possible and yet meet practically all the requirements of the different farm machines. A suggestion for such a hitch is shown in diagram 1. To show the adaptability of this simple supplementary drawbar, the holes indicated in this diagram are for attaching different sizes of disk harrows, allowing for the proper overlap of six inches which is necessary for disk harrows when drawn in this manner.

Materials and Construction

For the construction of such a hitch, select a good piece of hard wood of a size that will stand the total amount of strain coming from the different combinations of machines that are to be attached behind it. Usually a 2x8, 2x12, or 4x4 piece would be strong enough for the purpose. The length depends upon the number of machines which the farmer wishes at any time to combine, depending also, of course, upon the capacity of the tractor.

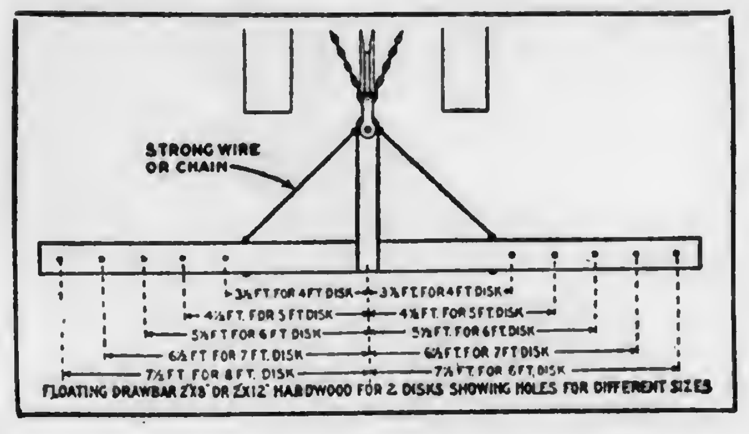


Fig. 1—A General Purpose Hitch

The stub pole shown in diagram one can be of the same material and should be from three to four feet long, bolted securely to the drawbar and braced by means of angle irons or heavy cables against side strains. These braces should not extend too far out along the drawbar, as on short turns they might interfere with the drive wheels of the tractor. The end of this stub tongue should have a strap iron reinforcement, and a hole bored for coupling it to the tractor by means of a clevis. Other long clevises should be provided to attach the different machines to this drawbar.

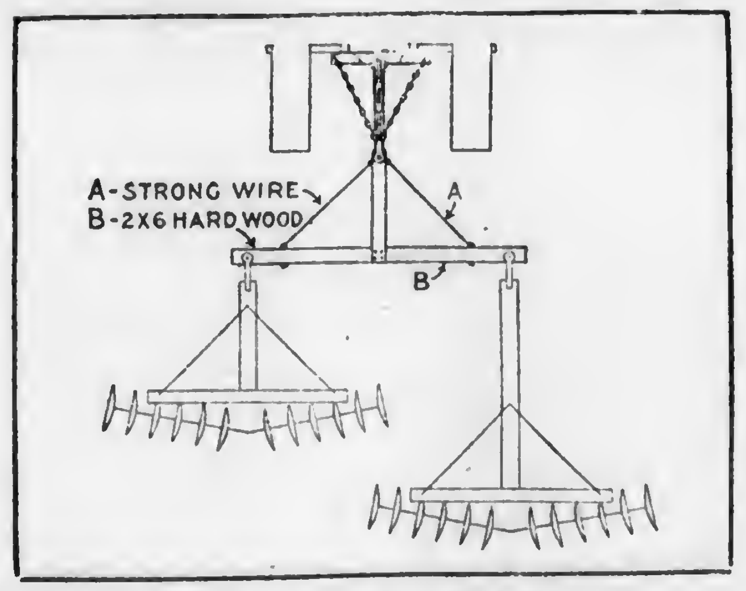


Fig. 2—Hitch for Two Disk Harrows

Now when a long supplementary drawbar is made on this order, it would be well to place a forecarriage or tongue truck beneath this stub tongue to prevent seesawing of the machines attached to it. Also, for special purposes such as loading hay with two wagons and loaders at one time, caster wheels placed beneath each end of the drawbar, or ordinary low wheels, with stub axle bolted to each end, will be found an advantage, as they will support the poles of the wagons and prevent them from running foul with the ground.

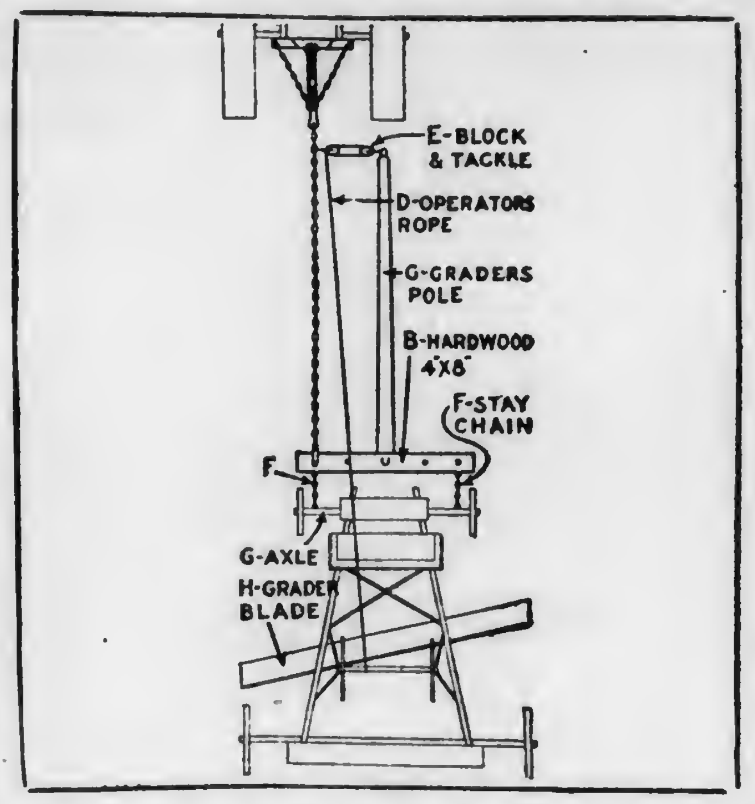


Fig. 5—Hitch for Puows and Peg Harrows

A Hitch for Two Hisk Harrows

Diagram two shows the general purpose hitch used with two disk harrows. In order to have the harrows overlap for good work, it is necessary that the pole of one harrow be longer than the one on the other, making it possible to disk all the ground. Providing the tractor has the power, an excellent combination can be made for conserving moisture by simply attaching sections of smoothing harrow behind the disk harrows. This can be done by connecting the smoothing harrow drawbar to the frames of the disk harrows in front or by running a connection ahead of the main drawbar.

For Three Disk Harrows or Drills

Where a tractor has power to pull three machines of a kind and there is need for doing work in a hurry, diagram three illustrates how such a combination may be made. It will be noted from

(Continued on Page 11.)

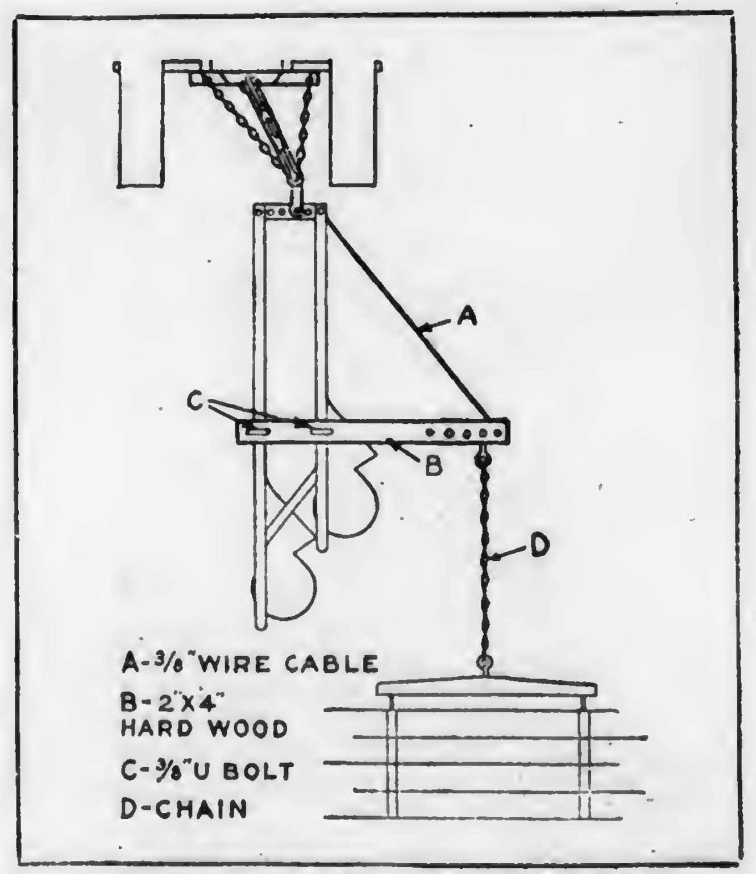


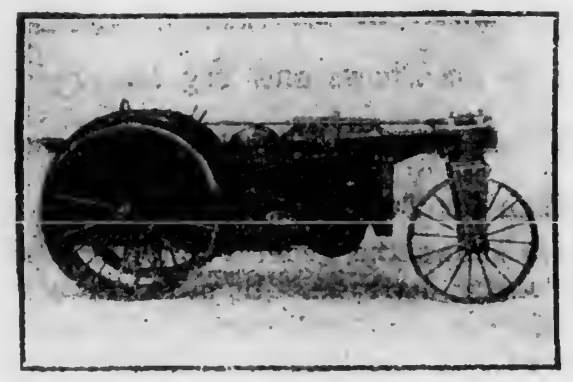
Fig. 6—Hitch for Two Road Graders

A Close View of Some of the Tractors

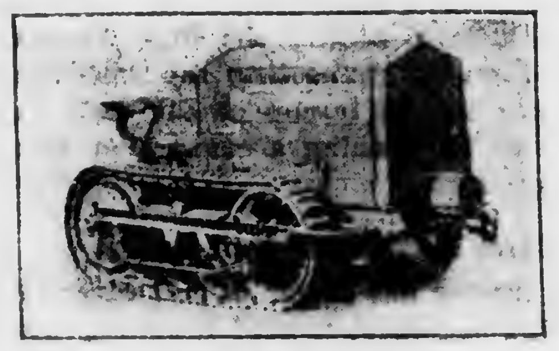
A & T, 30-60. Manufactured by Aultman & Taylor Machinery Co., Mansfield, Ohio. Four cylinders; Eight to Eleven 14-inch plows; Gasoline or Kerosene.

Allwork, 12-25. Manufactured by Electric Wheel Co., Quincy, Ill. Four cylinders; Three 14-inch plows; Kerosene. Price $1,460 f.o.b. Factory.

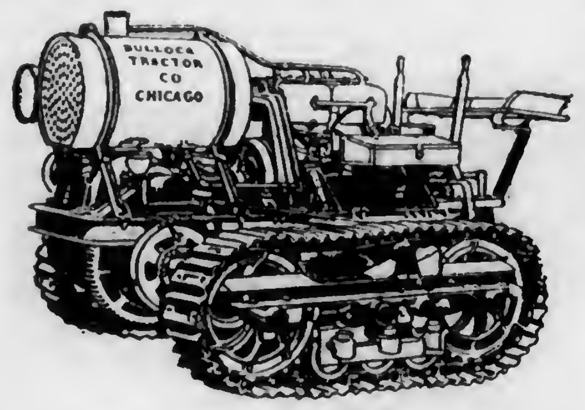
Avery, 12-25. Manufactured by Avery Co., Peoria, Ill. Two cylinders; Four 14-inch plows; Kerosene.



Chase, 8-16. Manufactured by Chase Motor Truck Co., Syracuse, N. Y. Four cylinders; Two 14-inch plows; Gasoline or Kerosene.



Cleveland, 12-20. Manufactured by Cleveland Tractor Co., Cleveland, Ohio. Four cylinders; Gasoline. Price, $1,185 f.o.b. Factory.

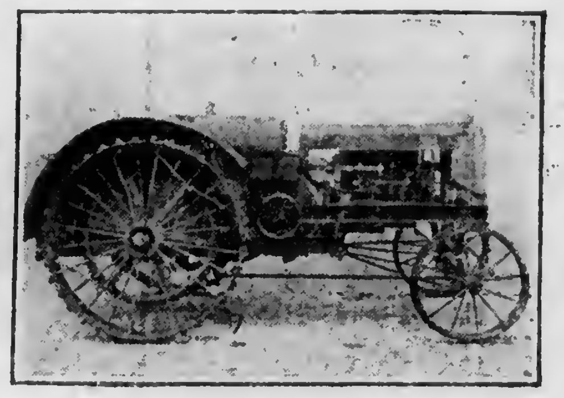


Creeping Grip, 12-20. Manufactured by Bullock Tractor Co., Chicago, Ill. Four cylinders; Three to Four 14-inch plows; Kerosene, Gasoline, Alcohol or Distillate. Price $1,750 f.o.b. Factory.

Denning, 10-18. Manufactured by Denning Tractor Co., Cedar Rapids, Iowa. Four cylinders; Two 14-inch plows; Kerosene. Price $925 f.o.ob. Factory.

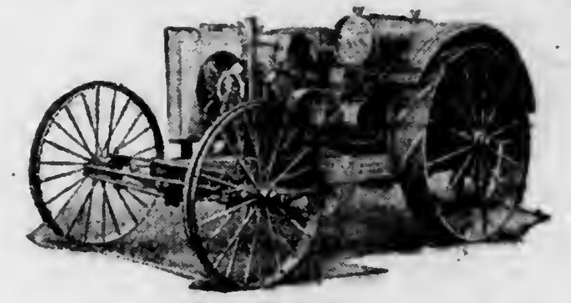
Fitch, 15-30. Manufactured by The Four Drive Tractor Co., Inc., Big Rapids, Mich. Four cylinders; Three 14-inch plows; Gasoline. Price $2,000 f.o.b. Factory.

Happy Farmer, 8-16. Manufactured by LaCrosse Tractor Co., LaCrosse, Wis. Two cylinders; Two 14-inch plows; Kerosene. Price $685 f.o.b. Factory.



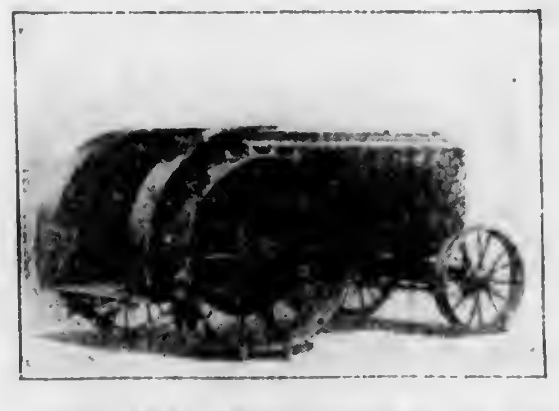
Heider, 9-16. Manufactured by Rock Island Plow Co., Rock Island, Ill. Four cylinders; Two 14-inch plows; Kerosene. Price $1,020 f.o.b. Factory.

Heider, 12-20. Manufactured by Rock Island Plow Co., Rock Island, Ill. Four cylinders; Three 14-inch plows; Kerosene. Price $1,395 f.o.b. Factory.

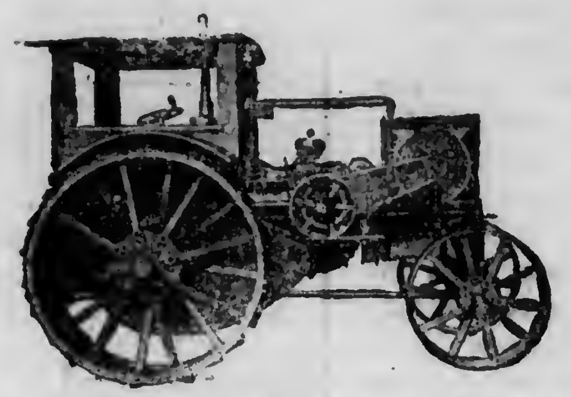


Huber, 12-25. Manufactured by Huber Mfg. Co., Marion, Ohio. Four cylinders; Three 14-inch plows; Gasoline. Price $1,185 f.o.b. Factory.

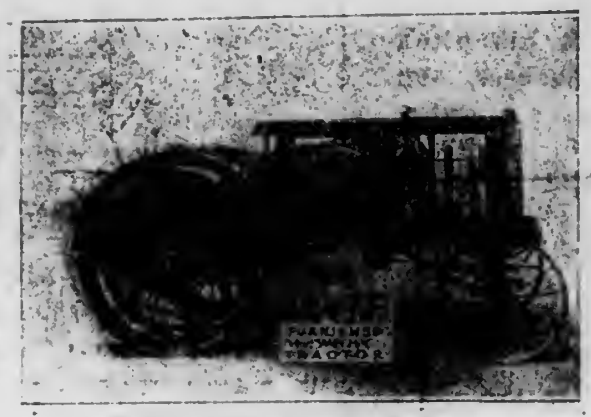
Ingeco, 10-20. Manufactured by Worthington Pump & Machinery Co., Cudahy, Wis. Two cylinders; Two 14-inch plows; Kerosene. Price $1,000 f.o.b. Factory.



Lauson, 15-25. Manufactured by The John Lauson Mfg. Co., New Holstein, Wis. Four cylinders; Three 14-inch plows; Kerosene. Price$1,695 f.o.b. Factory.



International, 8-16. Manufactured by International Harvester Co., Chicago, Ill. Four cylinders; Two 14-inch plows; Kerosene. Price $975 f.o.b. Factory.



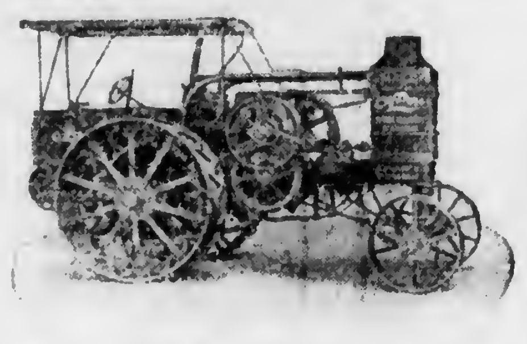
Leader, 12-18. Manufactured by Dayton-Dick Co., Quincy, Ill. Two cylinders: Two to Three 14-inch plows; Kerosene. Price $900 f.o.b. Factory.

Leader, 25-40. Manufactured by Dayton-Dick Co., Quincy, Ill. Four cylinders; Four to Six 14-inch plows; Kerosene. Price $2,000 f.o.b. Factory.

Little Giant, 26-35. Manufactured by Mayer Bros. Co., Mankato, Minn. Four cylinders; Four to Six 14-inch plows; Kerosene. Price $2,300 f.o.b. Factory.

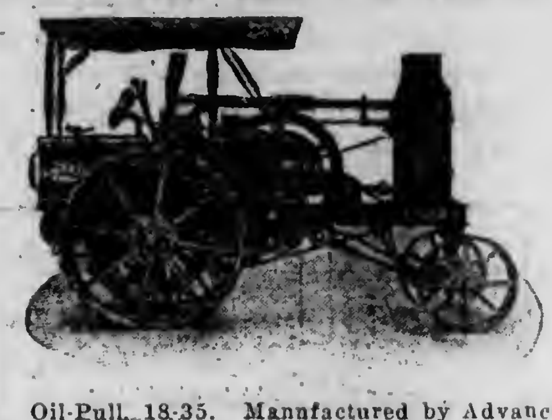
Mogul, 10-20. Manufactured by International Harvester Co., Chicago, Ill. One cylinder; Three 14-inch plows; Kerosene. Price $1,020 f.o.ob. Factory.

Parrett, 12-25. Manufactured by Parrett Tractor Co., Chicago, Ill. Four cylinders; Three 14-inch plows: Gasoline or Kerosene. Price $1,290 f.o.b. Factory.



Oil-Pull, 14-28. Manufactured by Advance-Rumley Thresher Co., LaPorte, Ind. Two cylinders; Four 14-inch plows; Kerosene or Distillate. Price $2,400 f.o.b. Factory.

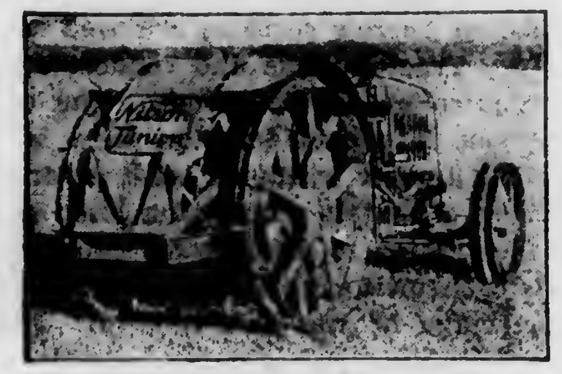
Oil-Pull, 30-60. Manufactured by Advance-Rumley Thresher Co., LaPorte, Ind. Two cylinders; Eight 14-inch plows; Kerosene or Distillate. Price $4,300 f.o.b. Factory.



Oil-Pull, 18-35. Manufactured by Advance-Rumley Thresher Co., LaPorte, Ind. One cylinder; Four to Five 14-inch plows; Kerosene or Distillate. Price $3,000 f.o.b. Factory.

Pioneer, 30-60. Manufactured by Pioneer Tractor Mfg. Co., Winona, Minn. Four cylinders; Ten 14-inch plows; Gasoline or Kerosene. Price $3,500 f.o.b. Factory.

Plowman, 15-30. Manufactured by Interstate Tractor Co., Waterloo, Iowa. Four cylinders; Four to Five 14-inch plows; Gasosene, starting on Gasoline. Price $1,595 .o.b. Factory.



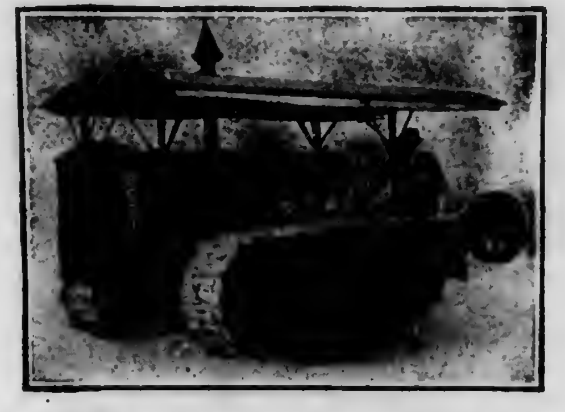
Nilson, 25-40. Manufactured by Nilson Tractor Co., Minneapolis, Minn. Four cylinders; Four to Five 14-inch ploys; Gasoline. Price $2,035 f.o.b. Factory.

Reed, 12-25. Manufactured by Reed Foundry & Machinery Co., Kalamazoo, Mich. Four cylinders; Two 14-inch plows; Gasoline or Kerosene.

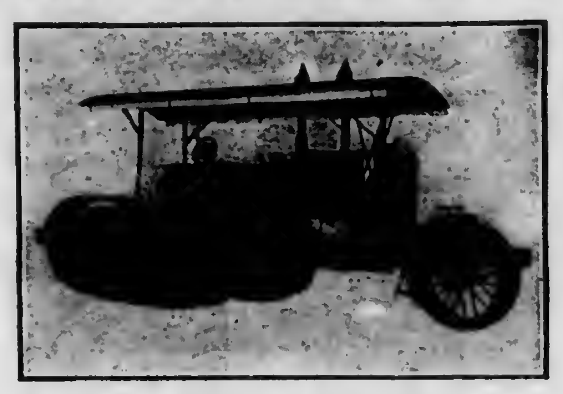
Russell, 10-20. Manufactured by The Russell & Co., Massillon, Ohio. Four cylinders; Two to Three 14-inch plows; Kerosene. Price $1,350 f.o.b. Factory.

Sandusky, 10-20. Manufactured by Dauch Mfg. Co., Sandusky, Ohio. Four cylinders; Two 14-inch plows; Kerosene, Gasoline or Distillate. Price $1.250 f.o.b. Factory.

Sandusky, 15-35. Manufactnred by Dauch Mfg. Co., Santusky, Ohio. Four cylinders; Four 14-inch plows; Kerosene, Gasoline or Distillate. Price $2,300 f.o.b. Factory.



Tracklayer, 38-75. Manufactured by C. L. Best Tractor Co., San Leandro, Cal. Four cylinders; Eight to Twelve 14-inch plows; Distillate. Price $5,500 f.o.b. Factory.



Tracklayer, 20-40. Manufactured by C. L. Best Tractor Co., San Leandro, Cal. Four cylinders; Four to Six 14-inch plows; Distillate. Price $4,100 f.o.b. Factory.

Twin City 16, 16-30. Manufactured by Minneapolis Steel & Machinery Co., Minneapolis, Minn. Four cylinders; Four 14-inch plows; Gasoline or Kerosene. Price $2,400 f.o.b. Factory.

Steel Mule D, 12-20. Manufactured by Joliet Oil Tractor Co., Joliet, Ill. Four cylinders; Three to Four 14-inch plows; Kerosene Distillate.

Twin City 25, 25-45. Manufactured by Minneapolis Steel & Machinery Co., Minneapolis, Minn. Four cylinders; Eight 14-inch plows; Gasoline or Kerosene. Price $3,300 f.o.b. Factory.

Twin City 40, 40-65. Manufactured by Minneapolis Steel & Machinery Co., Minneapolis, Minn. Four cylinders, Eight 14-inch plows; Gasoline or Kerosene. Price $4,100 f.ob. Factory.

Twin City 60, 60-90. Manufactured by Minneapolis Steel & Machinery Co., Minneapolis, Minn. Six cylinders; Twelve 14-inch plows; Gasoline or Kerosene. Price $5,100 f.o.b. Factory.

Titan, 10-20. Manufactured by International Harvester Co., Chicago, Ill. Two cylinders; Three 14-inch plows; Kerosene. Price $1,125 f.o.b. Factory.

Tractor Lubrication

Cutting Cost of Operation and Prolonging Life of Machine—By Paul F. Irving

Messrs. B and F, North Dakota farmers, formerly used a lubricating oil costing 38 cents a gallon in their 30-60 horsepower tractor. But in field tests, using another oil which cost nearly twice as much per gallon, they found to their astonishment that the use of the more expensive oil resulted in a fuel saving of 20 percent and an oil saving of 62.5 percent, which meant a big money saving per acre. Mr. I, a Kansas farmer, also made some lubrication tests, substituting an oil somewhat higher in price than he formerly used, and found that he was able to make a fuel saving of 19.4 percent and an oil saving of 54.3 percent. Again the higher priced oil more than justified its cost. Mr. G, another North Dakota farmer, formerly paid 42 cents a gallon for the oil he used in this tractor. Now he saves money by paying more for a different grade of oil. Why? Comparative tests showed him a 60 percent reduction in oil consumption when using the more expensive grade.

What do the experiences of these tractor owners mean? Simply this; that correct lubrication brings a cash dividend on every acre. That lubricating efficiency means lower costs per acre and per year in operating expense. These cases are typical. Hundreds of tractor owners thruout the United States have had similar experiences. What makes these economies possible? Here are some of the reasons:

The problem of minimizing friction in tractor operation is more difficult than that of correctly lubricating an automobile. Automobiles

(Continued On Page 7)

No Idle Acres

Your country is calling upon you not only to put under cultivation every possible acre, but to plant the crops in properly prepared seed beds that will insure a maximum yield.

Labor is expensive and hard to secure. Horses are in great demand by the government and needed in carrying on the war. The conditions under which you farm are bad, and from every indication will grow worse. The use of tractor power on your farm is a ready solution of these problems.

Oliver tractor plows used with any standard light tractor will enable you to do the same quality plowing that you always could do with Oliver horse plows. When you buy an Oliver tractor plow you secure Oliver organized service and are protected by the Oliver name. This has a real value to you.

See Oliver tractor plows at the nearest dealer, and write us for information telling us the make of tractor you favor.

Oliver Chilled Plow Works
Plowmakers for the World
SOUTH BEND, INDIANA

Branches, Stocks and Service Stations at Convenient Points.

Neptune Water Supply Systems
Pure, Sparkling Water
Under High Pressure

IT COSTS ½ c PER DAY

to operate a Neptune System, giving you a continuous, steady supply of water under pressure *anywhere* you want it—whether it be the barn, bath-room or kitchen. Isn't it worth a 1-2 c a day to modernize your home in this way and give the family the added comforts that running water means, to say nothing of fire protection?

The cuts show the compactness of the System. Takes up minimum amount of space; noiseless in operation. Requires very little attention. Our engineering department lays out the plans and builds the system to suit your requirements. This saves you endless expense, worry and labor. No extra charge for this service. Learn all about the Neptune System and our square-deal methods of dealing with farmers by writing for free booklet. Add. Dept. 42.

FLECK BROS. CO.
Plumbing and Heating Supplies
44 to 50 N. Fifth St. Philadelphia, Pa.

(Continued from Page 5.)

are much higher powered, relative to the weight and work performed. An automobile engine is seldom called upon to work at full capacity, while tractor engines are required to work continually at from 70 to 80 percent of their rated load. Tractor engines are subjected to rough usage and great strain, due to the character of the ground over which they must travel, and in some cases to the absence of springs. Slower traveling speed is therefore necessary in order to reduce vibration. Due to the slow speed at which it travels, the tractor does not have the benefit of the additional cooling value of air circulation which is produced by a fast moving automobile.

All these facts point to one conclusion: That the tractor is a heavy, hard-working, slow-moving machine. It tends to run hot and demands a lubricant rich in quality to enable it to stand up under excessive heat. The oil must be correct in body for the engine in which it is to be used. All oil is worthless unless it has the correct body to reach all bearing surfaces, and is rich enough to supply these surfaces with a protecting film.

When you realize that a film of oil rarely more than 3-100 of an inch in thickness—about the thickness of this sheet of paper—furnishes your protection against the ravages of friction, you will appreciate how vital the correct lubricant is to the efficient operation of your engine. Without that film of oil between pistons and cylinder walls the pistons would bind and seize in a short time. With an oil of poor quality, you invite the penalty of scored cylinder walls, scored pistons and broken piston rings. If the body of the oil is incorrect, the same result may follow even if the quality of the oil be of the best. You have a right to expect that the oil you use will meet both in quality and body the conditions which must be met inside the cylinders of your engine.

Cylinder Temperatures

Consider the question of cylinder temperatures. You cannot picture 2,500 to 3,000 degrees Fahrenheit—the approximate temperature at the point of explosion. If that heat were permitted to continue unchecked, the cylinder would soon be a mass of molten metal. The cooling system and lubricating system of your engine are the chief elements in protecting it against excessive heat. But the destructive heat of friction must also be overcome. This task falls to the lubricant. If the oil breaks down under heat, it loses much or all of its lubricating property and fails to separate the moving metal surfaces. Destructive friction follows, and that friction produces additional heat, thus increasing the cylinder temperature.

Upon the lubricant falls the additional task of sealing the spaces between pistons, piston rings and cylinder walls. In performing this function a portion of the oil is directly subjected to high temperatures. If the oil fails to stand up under this heat, not only is the lubricating film destroyed but compression is weakened. Gas escapes past the piston rings. The force of the explosion is reduced. Loss of power and waste of oil fuel result. You have a right to expect that the oil you use will withstand the heat of service, prevent undue frictional heat and give you full compression and power.

(Continued On Page 25.)

Make Your Soft Corn Yield Maximum Profits

THERE SEEMS TO BE only one solution of the soft corn problem—and that is to feed your corn this year to hogs or cattle as fast as possible.

MANY WHO CRIBBED IT find it spoiling on their hands—a serious loss.

THOSE WHO DECIDED to feed it out quickly and added as many animals to their feeding flocks as their corn crop would warrant, will reap the biggest profits.

THEY ARE ACTUALLY turning loss into profit, PROVIDED, they do not overlook one very important factor which is doubly essential under present conditions.

AND THAT IS THE HEALTH OF THEIR STOCK. Under these forced feeding conditions, and the great dangers always attendant when feeding new corn, especially soggy, soft corn, the liability to disease and sickness is enormously increased.

THE EXPERIENCED FEEDER knows this and this year especially he will feed a good dependable live stock conditioner and worm destroyer.

HE WILL DO THIS as a preventive measure—an insurance against losses, which he knows, if they get a start will be even greater than if he had suffered the loss of his corn crop through spoilage.

AGAIN, A GOOD CONDITIONER will increase the food value of even poor corn. It will enable the animal to get more good from it—keep the digestive system in better condition, regulate the bowels and above all, destroy the poisonous, disease-breeding, destructive worms which are always more prevalent when soft or immature corn is fed.

SAL-VET is your safeguard. It is a tried and proven conditioner and worm destroyer. It is not a new, experimental remedy. It has saved more live stock — prevented more live stock losses—proven its worth to more live stock owners, than any similar remedy ever offered to the American farmers.

FARMERS EVERYWHERE are buying it now in double the quantities due to the soft corn situation. They realize it is doubly important to feed SAL-VET now and that it is the best and cheapest insurance they can buy.

ITS BASE BEING SALT, to which are added the *necessary* medicines to destroy stomach and intestinal worms—regulate the bowels—purify the blood—tone up the animals generally, makes SAL-VET the ideal preparation to feed regularly with soft and soggy corn.

SAL-VET COSTS SO LITTLE you cannot afford to risk even the slightest losses. It will repay its cost many times over in faster gains, thriftier growth, healthier stock. It will save its cost by saving feed.

ASK YOUR DEALER about it. If he cannot supply you, write to us. Don't put it off—your risk is too great. Write for a copy of our New Live Stock Book; it is free and contains much valuable information.

"I have used SAL-VET with grand results and think it is a wonderful conditioner and builder. It is the best remedy for worm-infested stock that I have ever fed."
Dr. ALEX. L. COEN
Box 15, Washington, Ohio

THE FEIL MFG. CO., Chemists, Dept. 105 Cleveland, O.

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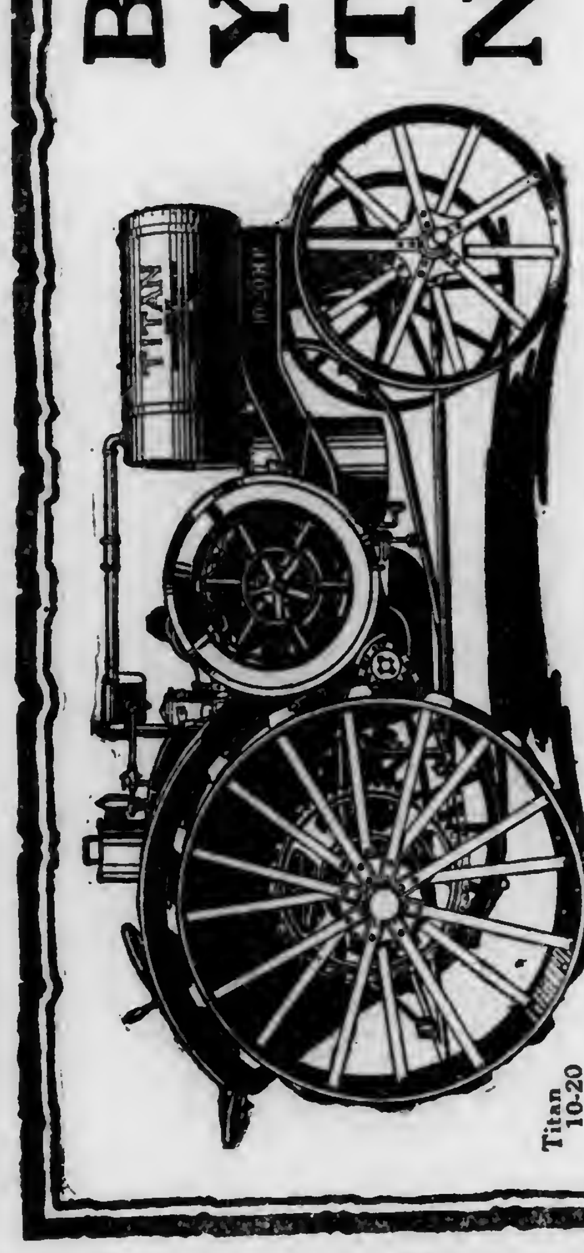

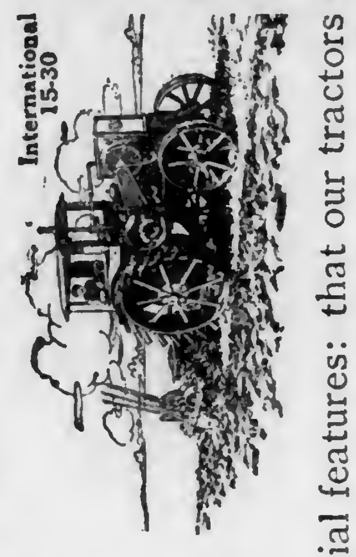

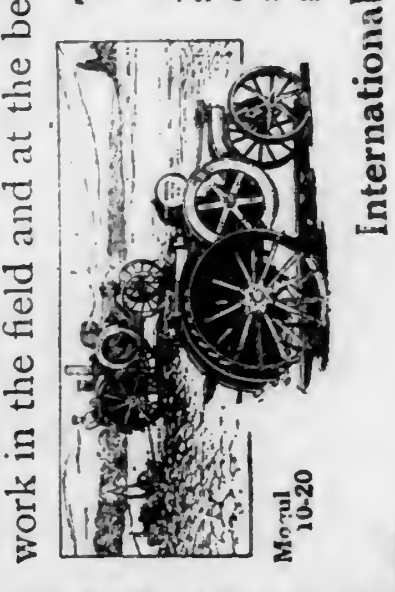

Buy Your Tractor Now

THE tractor is a real help to American farmers now. It is fast taking over all the heavy farm power work.

Kerosene is the best, as it certainly is the cheapest, tractor fuel. Therefore, all our tractors, **International, Mogul** and **Titan,** are designed, built, and guaranteed to operate successfully on this cheap, plentiful fuel.

We pay particular attention to these three essential features: that our tractors shall operate on the cheapest fuel farmers can buy; that they shall be so simple that any farmer can learn to handle them; and that they shall do enough good work in the field and at the belt to more than pay for themselves.

On this basis we solicit your orders for **Mogul 10-20, Titan 10-20** and **International 15-30** kerosene tractors.

It will be difficult for us to furnish your tractor as soon as you want it. The demand is hard to keep up with and shipping facilities are very much handicapped. Send for our catalogues now, make your decision, and send in your order as soon as you can if you want an International Harvester guaranteed kerosene tractor in time for the spring plowing.

International Harvester Company of America
(Incorporated)
Chicago U S A

Please mention Pennsylvania Farmer when writing to advertisers.

Farm Tractor Specification Chart

Essential Features in Manufacture and Operation of Different Tractors

MANUFACTURER	TRADE NAME OF TRACTOR	Horsepower at Drawbar	Horsepower at Brake	No. 11 Inch Plows Recommended	Length Over All —Inches	Width Over All —Inches	Height Over All —Inches	Shipping Weight —Pounds	Turning Radius —Feet	Number of Cylinders	Bore and Stroke	Revolutions per Minute	Type of Ignition	Fuel Recommended	Type and Number of Drivers	Diameter Drive Wheels —Inches	Width Drive-Wheels —Inches	Width Creepers —Inches	Traction Surface Creepers	Number Forward Speeds	Miles per Hour	Diameter of Pulley	Face Pulley	Price F. O. B. Factory
Acme Harvesting Machine Co., Peoria, Ill.	Acme	12	24	13	144	76	72	6500		4	4½x6	800-900	K. W. Mag.	Gasoline or Kero.	2 Crlers., 2 Wheels	54	12	10	840					
Geneva Tractor Co., Geneva, Ohio	Adapto-Tractor Attachmt	3-4		1	114	77	65		25						2 Roller Pinion Dr.	36	10	13		2	2⅓-3	7½	7	$168
Electric Wheel Co., Quincy, Ill.	Allwork	12	25	3	125	66	68	5400	12	4	5 x6	750	H. T. Mag.	K.	2 Wheels	48	12			2	1¾-2.4	12	7	$1460
Aultman & Saylor Mchy. Co., Mansfield, Ohio	A and T	30	60	8-11	220	131	136	25270		4	7 x9	500	" " "	G. or K.	"	90	24			1	2⅓	24	11	
Avery Co., Peoria, Ill.	Avery	5	10	2	115	35	54¾	2150	10½	4	3 x4	1200	Battery	G.	"	38	5			4	1-3	6	4½	
" " " "	Avery	8	16	3	130	56	72	4900	11	2	5½x6	600	H. T. Mag.	K.	"	50	12			2	1¾-3	18	7	
" " " "	Avery	12	25	4	164	80	105	7500	14	2	6½x7	570	" " "	"	"	56	20			2	1¾-2¾	19½	7	
" " " "	Avery	18	36	5	152	84	105	9250	14½	4	5½x6	650	" " "	"	"	65	20			2	2-3	18	8	
Joliet Oil Tractor Co., Joliet, Ill.	Bates Steel Mule "D"	12	20	3-4	105	62½	58	4300	8	4	4 x6	900	" " "	Kero. Distillate	2 Crawlers			10	1000	2	2⅔-3½	12	8½	
" " " " " "	Bates Steel Mule "C"	11	20	3	126	106	84	6500	16	4	4 x6	900	" " "	"	1 "			15	725	2	2⅓-3½	10	8½	
Bates Tractor Co., Lansing, Mich.	Bates All-Steel Oil Trac'r	15	25	2-3	144	72	65	4000	6	4	4¼x5¾	800	" " "	K.	2 Wheels	50	14			3	1½-5	10	7	$1075
Beeman Garden Tractor Co., Minneapolis, Minn.	Beeman Garden Tractor		4		84	17	39	525	7	1	3½x4½	230/2600	" " "	G.	"	25	3½			1	1-3	4¼	5	$225
The Russell & Co., Massillon, Ohio	Big Boss	30	40	4-5	162	66	87	7700	17	4	5½x7	825	" " "	K.	"	60	16			2	2½	13	8	$2500
Buckeye Mfg. Co., Anderson, Ind.	Buckeye Trundaar	20	35	4	113	74	58	9200	12	4	4¾x6¾		" " "		Tread				2160			10	8	$2950
J. I. Case Co., Racine, Wis.	Case	9	18	2	123	58	61	3770	6	4	3⅞x5	900	" " "	K. or G.	2 Wheels	48	10			2	2¼-3½	14¼	5¼	
Cleveland Tractor Co.,* Cleveland, Ohio	Cleveland	12	20		96	50	52	2750		4			" " "	G.	2 Creepers			6	600		4½	8	6	$1185
Bullock Tractor Co., Chicago, Ill.	Creeping Grip	12	20	3-4	108	81	76	7300	11½	4	4½x6¾	900	" " "	K. G., Alco. or Dis.	"			12	792	1	2¼	12	8	$1750
G. W. Elliott & Co., De Smet, S. D.	Dakota No. 1	7	10	2	132	70	66	3200	12	4	3¾x5¼	1000	" " "	G.	1 Wheel	36	48			1	3	7	5	$1175
" " " " " " " " "	Dakota No. 2	14	18	4	156	79	78	4800	15	4	4¾x6¾	800	" " "	"	"	42	60			1	3	14	7	$1725
Denning Tractor Co., Cedar Rapids, Ia.	Denning	10	18	2	120	59	59	3800	6½	4	3½x5¼	1200	" " "	K.	2 Wheels	46	10				1-3¼	12	6	$925
G. I. Dill Tractor Mfg Co., Harrisburg, Ark.	Dill	20	47	3	230	105	70	5000	30	4	4½x5½	1000	" " "	G.	"	42	36			3	1-5			$2380
Elgin Tractor Co., Piqua, Ohio	Elgin	9	18	2	128	54	60	3000	24	4	3¾x5	900	" " "	"	"	42	8			7	1-8	9	8	
Farm Horse Traction Works, Hartford, S. D.	Farm Horse Tractor	15	32	3	132	96	86	4800	25	4	5 x6	800	" " "	K.	"	48	24			2	2½-3½	14	8	$1185
McIntyre Mfg. Co., Columbus, Ohio	Farmer Boy	10	20	2	136	62	54	3350	12	4	3¾x5¼	900	K. W. Mag.	G. and K.	1 "	50	14			1	2½	15	6	$1050
The Four Drive Trac'r Co., Inc., Grand Rapids, Mich.	Fitch	15	30	3	120	69	73	5100	4¾	4	4¼x5¾	1000	" " "	G.	4 "	36 & 42	12			3	1¼-3¼	12	10	$2000
Kardell Tractor & Truck Co., St. Louis, Mo.	Four-in-One	20	32	3	158	84	76	5100	12	4	4½x5¾	900	" " "	"	2 "	60	12			2	3¼-5½	12	8	
The Gray Tractor Co., Minneapolis	Gray Tractor	18	30	4	174	81	63	6000	22	4	4¾x6¾	850	H. T. Mag.	"	Drum	54	54			2	2-2½	11	7	
La Crosse Tractor Co., La Crosse, Wis.	Happy Farmer, Model A.	8	16	2	152	72	62	3600	13	2	5 x6½	750	Battery	K.	2 Wheels	56	10			1	2-3	11	6	$685
" " " " " " "	Happy Farmer, Model B.	12	24	3	142	82½	62	4000	8¼	2	5¾x7	750	"	"	"	56	10			1	2½	11	6	$975
Rock Island Plow Co., Rock Island, Ill.	Heider	9	16	2	128	68	62	4000	25	4	4¼x5¾	750	H. T. Mag.	"	"	54	8			7	1-4	10	8	$1020
" " " " " " "	Heider	12	20	3	144	74	96	6000	25	4	4½x6¾	750	" " "	"	"	57	10			7	1-4	12	10	$1395
Leo Rumely Tractor Co., La Porte, Ind.	Hoosier Farm Tractor	8	18					3900		4	3¾x5¼		" " "		"	54	24			1	1¾-2½	20	8	
Huber Mfg. Co., Marion, Ohio	Huber	12	25	3	90	74½	70	5000	11	4	4¼x5½	900	" " "	G.	"	60	10			2	2½-4	13	7	$1185
Worthington Pump & Mchy Co., Cudahy, Wis.	Ingeco, Model A	10	20	2	138	66	60	6500		2	6 x7	750	" " "	K.	"	60	12			1	2¼	14	8	$1000
International Harvester Co., Chicago, Ill.	International	8	16	2	132	64	65½	3300		4	4 x5	1000	" " "	"	"	40	12			3	1¾-4	12¼	8½	$975
The John Lauson Mfg. Co., New Holstein, Wis.	Lauson Kerosene Tractor	15	25	3	136	74	62	6200	20	4	4½x6	950	" " "	"	"	54	12			2	1¾-2½	17	8	$1695
Dayton-Dick Co., Quincy, Ill.	Leader	12	18	2-3	134	60	66	4800	17	2	6 x6	750	" " "	"	"	48	12			2	1¾-2½	14	7	$900
" " " " "	Leader	25	40	4-6	153	64	96	6500	26	4	5 x7½	750	" " "	"	2 Crawlers			15	1500	2	2½-3¾	14	8	$2000
The Russell & Co., Massillon, Ohio	Little Boss	15	30	3-4	91	58	96	5900	20	4	4½x6¾	900	" " "	"	2 Wheels	58	12			2	2¼	12½	7	$1650
Mayer Bros. Co., Mankato, Minn.	Little Giant, Model A	26	35	4-6	168	75	73	8700	30	4	5¼x6	750	" " "	"	"	66	20			3	1½-6	13	9	$2300
" " " " "	Little Giant, Model B	16	22	3-4	144	52	59	5200	22	4	4¼x5	900	" " "	"	"	54	14			3	1½-6	9	7	$1440
B. F. Avery & Sons, Louisville, Ky.	Louisville Motor Plow	10	20	2	156	86	67	6000	7	2	6 x6	675	" " "	G. or K.	1 "	60	12			1	2½-3	12	8	
International Harvester Co., Chicago, Ill.	Mogul	10	20	3	147	60	66¾	5500	20	1	8½x12	400	" " "	K.	2 "	54	10			2	1.18-2.5	20	10½	$1625
Moline Plow Co., Moline, Ill.	Moline Universal	5-6	10-12	2	150	57	63	3000	16	2	4¾x6	1000	" " "	G.	"	52	8			1	1-3	8	6	$895
Monarch Tractor Co., Watertown, Wis.	Neverslip	12	20	3	114	64	72	6200	16	4	6 x6	900	" " "	"	Creepers			12	600		1½-2⅙	14	8	
" " " " "	Neverslip	18	30	4	126	66	75	7400	16	4	4¾x7	700	" " "	"	"			12	792		2-3	14	8	
" " " " "	Neverslip	30	50		136	79	82	13000		4		650			"			20	1320		1⅛-4⅔			
" " " " "	Neverslip	50	80		138	83	74	16500		4		600			"			20	1280		1¼-5			
Nilson Tractor Co., Minneapolis	Nilson Senior	25	40	4-5	165	90	67	6100	17	4	4¾x6¾	800	K. W. Mag.	"	3 or 1 wheel	52	42 or 22			2	2½-6	24	8	$2035
" " " "	Nilson Junior	16	30	3-4	147	82	62	4300	16	4	4¼x5¾	900	" " "	"	"	50	32 or 18			2	2½-6	20	6	$1585
Advance-Rumely Thresher Co., La Porte, Ind.	Oil-Pull	30	60	8	228	114	132	26000	18	2	10x12	375	L. T. Mag.	Kero. or Distillate	2 Wheels	80	30			1	1.9	36	11	$4300
" " " " " " " "	Oil-Pull	18	35	4-5	192	94	123	16000	18	1	10x12	375	" " "	"	"	70	24			2	2.04	30	9½	$3000
" " " " " " " "	Oil-Pull	14	28	4	158	80	99	8500	17	2	7 x8½	530	" " "	"	"	56	18			2	2.1-3	23	8½	$2400
Parrett Tractor Co., Chicago, Ill.	Parrett All-Purpose	12	25	3	144	72	66	5223	9⅔	4	4¼x5½	900	H. T. Mag.	G. or K.	"	60	10			2	2⅜-4	12	7	$1290
Pioneer Tractor Mfg Co., Winona, Minn.	Pioneer	30	60	10	237	120	118	23600	30	4	7 x8	600	K. W. Mag.	"	"	96	24			3	2-6	17½	15	$3500
" " " " " "	Pioneer Special	17	34	4	169	74	64	8000	15	4	5½x6	700	" " "	"	"	60	24			3	1¾-4	15	9	$1550
Interstate Tractor Co., Waterloo, Iowa	Plowman	15	30	3-4	156	65	72	4600	13	4	4½x6	950	H. T. Mag.	K. starting on G.	"	60	12			2	2¼-2½	18	8	$1595
Reed Fdry. & Mch. Co., Kalamazoo, Mich.	Reed	12	25	2			60	4000		4	3½x5¼	800	" " "	G. or K.	"	60	12			2	1-3	12	7	
The Russell & Co., Massillon, Ohio	Russell Junior	10	20	2-3	91	58	96	5800	20	4	4½x5¾	950	" " "	K.	"	52	10			2	2¼	12½	7	$1350
Dauch Mfg. Co., Sandusky, Ohio	Sandusky, Model J	10	20	2	140	74	58	4600		4	4¼x5¼	1000	" " "	K., G. or Distillate	"	48	12			2	2-3	8	8	$1250
" " " " "	Sandusky, Model E	15	35	4	150	112	74	8300		4	5 x6½	750	" " "	"	"	54	16			3	2-5½	15	9	$2300
International Harvester Co., Chicago, Ill.	Titan**	10	20	3	147	60	66¾	5525	28	2	6½x8	500	" " "	K.	2 Crawlers	54	10			2	1.85-2.5	20	8½	$1125
Tom Thumb Tractor Co., Minneapolis	Tom Thumb	12	20	3	132	87½	71	5000	15	4	4½x5¾	800	" " "	G.	1 Creeper			16	768		2.1-2.7	16	7	
Topp-Stewart Tractor Co., Clintonville, Wis.	Topp-Stewart			4-5	138	78	64	6000	10	4	4¾x6¾	900	" " "	"	4 Wheels	42	12			3	5-7½	14	8	
Minn. Steel & Mchy. Co., Minneapolis	Twin City "16"	16	30	4	179	70	72	8000	33	4	5 x7½	650	K. W. Mag.	G. or K.	2 "	54	14			2	2-2¾	17	8	$2400
" " " " " "	Twin City "25"	25	45	6	219	81	124	16500	37½	4	6¼x8	600	" " "	"	"	76	20			2	1.4-2	20	8½	$3300
" " " " " "	Twin City "40"	40	65	8	240	102	122	24200	42½	4	7¼x9	500	" " "	"	"	84	24			1	2	23	10½	$4100
" " " " " "	Twin City "60"	60	90	12	262	114	122	28500	48½	6	7¼x9	500	" " "	"	"	84	30			1	2	23	10½	$5100
C. L. Best Tractor Co., San Leandro, Cal.	Tracklayer	38	75	8-12	268	103	120	28000	45	4	7¾x9	435	" " "	Distillate	2 Creepers			24 or 30	1728	2	1½-2⅜	16	10	$5500
" " " " " " " "	Tracklayer	20	40	4-6	130	77	84	11750	15	4	6¼x6¼	600	" " "	"	"			15½	1020	2	1⅝-2½	16	10	$4100
Universal Tractor Co., New York City	Universal	1	4	1	80	32	38	750	5	1	3½x5	100/750	Battery	G. or K.	2 Wheels	36	15			1	1-3	5	2	$365
Waterloo Gasoline Engine Co., Waterloo, Iowa	Waterloo Boy	12	24	3	132	72	63	5000	12½	2	6½x7	750	H. T. Mag.	K.	"	52	12			2	2¼-3	14	8	$1150
Chase Motor Truck Co., Syracuse, N. Y.*	Chase	8	16	2	144	62	56	5000	8	4	3¾x5½	900	" " "	G. or K.	"	48	12			2	2½	8	6	
Standard Detroit Tractor Co., Detroit, Mich.**	Standard Detroit	10	20	3	173	74	69	3945	15	4	3¾x5	900	" " "	G.	"	45	24			2	2½-3	10	7	

Pennsylvania Farmer

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PHILADELPHIA, PA., JANUARY 5, 1918.

Tractor Special

We received a large number of letters from readers last year asking for complete information on farm tractors. The readers suggested that an illustration and brief description of a single make of machine gave the prospective purchaser no information on the relative value or adaptability of the machines that are available. In this issue we have tried to gather the information asked for. The charted specifications, on page 6, give the essential features of over seventy different tractors. The illustrations on pages 4 and 5 show the type and general construction of the various makes of machines. These pages should be kept for reference if you are not interested at present. They give the information that you will want when you are ready to consider the purchase of a tractor. The other articles in this issue are designed to be of greatest assistance to the buyer and user. It was impossible to give space to all of the articles coming to us giving reports of experiences with tractors in general farm work. Those published show the general adaptability of these machines and indicate the growing popularity of tractors thruout the East.

* * *

The Farm Loan Banks

The opposition of certain financial interests to the Farm Loan Banks is about to culminate in a demand for Senate investigation, if not suit to test the constitutionality of the plan. We have frequently called attention to this opposition and have tried to point out that it was mainly inspired by the selfish motives of some existing financial institutions. The popular press of the east has, true to its servile nature, either openly opposed the establishment of farm loan banks, or maintained absolute silence regarding them. At any rate, the press has made no attempt to inform the public as to the workings and purposes of the system. We do not believe that the plan is yet perfect; certain needed changes will have to be made, but it is a step in the right direction—that of providing an ample, safe and economical means of financing agriculture.

The first step of the opponents is to call for a report of the condition of the twelve Federal Land Banks. Ordinarily such institutions are provided with a surplus to meet the expenses of the first year, but under the act of Congress no surplus was provided. Each bank started with a capital of $750,000. The entire system was to organize. All these expenses including furniture, clerks, appraisers, establishment of a legal department, examination of titles, etc., had to be paid and very little in the way of receipts coming in, owing to the shortage of time since establishment. They are just now beginning to receive the first payments on the loans made. Under these circumstances it may be easy to show what is called "an impairment of capital," and it is just this that the opponents want to do so as to discredit the system in the eyes of the uninformed. No reasonable man would expect a farmer to show a profit in May when the farmer had only begun operations in October.

The purpose of a suit to test the constitutionality of the act would be to alarm investors who have already bought bonds, and to dissuade others. There is no reason to fear however. The constitutionality of the Act has already been passed upon by the Attorney General, and by Ex-Judge Hughes, who examined it critically for a group of banking houses.

That the system is proving popular is attested by the fact that about $220,000,000 has already been applied for—$30,000,000 of which has been granted. The Farm Loan Board has chartered to date 1839 loan associations. These associations are composed of at least ten farmer-borrowers, each group borrowing at least $20,000. In New York state there have been organized 16 associations; in New Jersey, nine; in Pennsylvania, 10, and in Maryland six. The total amount of loans applied for in these four states is $4,700,106.

Keep your eyes on the men who oppose giving farmers a loan system which the business of farming needs. The national banking system probably meets the needs of other business well enough, but there is no reason why they should continue to have a monopoly on the favors of the government in the business of loaning money.

* * *

Order Early

Conditions in transportation make it necessary to call attention again to the need of early ordering of all supplies for the spring and summer. It is none too early to get in orders for fertilizers, seeds, lime and the machinery that will be needed in seeding the spring crops. Some relief in shipping may be expected since the railroads have been taken over by the government, but it is not wise to hope for too much. Take nothing for granted but place your orders as soon as you can ascertain your needs for the season. This applies to the machinery needed later in the summer as well as the early spring supplies. One of our readers wrote recently of his experience in ordering an attachment for drawing two binders with his farm tractor. His order was placed some weeks in advance of the harvesting season, but the part did not reach him in time for use. This may have been due to rush orders at the factory or to delays in shipping, but when you are waiting for a needed implement and it does not reach you in time for use it does not matter much what the particular cause may be. The only safe way to prevent the loss and annoyance is to place your orders early enough to care for the unexpected as well as the expected delays.

* * *

Uncle Sam a Railroader

A few years ago Lyman Abbott, Editor of the Outlook, wrote a short review of the events of 80 years of his life. In it he stated that one of the most noticeable and interesting tendencies in American government during the past three-quarters of a century was the gradual adoption of what may be called socialistic principles, while all the time the majority are protesting against socialism as a movement. The seeming anomaly is probably due to the fact that the majority can recognize progressive principles more readily and heartily when they are labeled "democratic" than when called "socialistic."

At no time in history has there been a more rapid adoption of these principles in our country, or a more world-wide adoption for that matter, than during the past three years. The selfish good of the individual is being subordinated to the common good, which we are told, best promotes the good of the individual.

The latest, biggest and perhaps the most far-reaching movement of this kind is the taking over by the government of the railroads of the country. These institutions (note the plural) have long been held up as examples of highest efficiency in management; yet, by their own admissions, were totally unable to meet the needs of the nation in this emergency.

This move by the government was made necessary because of two things: First, the individualistic spirit of the different roads which lessened their service and increased their expenses, and also because the management often considered dividends instead of service the chief purpose of the railroad's being. Second, the enforcement by the Government of the archaic Sherman Anti-Trust law has tended to hinder rather than help in the development of co-operative business enterprises. The purpose of the government in taking over the direction of the roads at this time was to correct both these errors. First, by making service to the public of first consideration, while guaranteeing dividends to investors. Second, such action automatically nullifies the laws which prevent unification of systems and operations.

The railroad people seem to be in sympathy with the move and enter heartily into the scheme. Railroad stocks at once took a jump and are selling higher than for months. McAdoo, who has been appointed Director General, proposes to eliminate a lot of costly and useless officials, bureaus and departments and has already ordered $2,000,000 worth of needed equipment—something the companies said they were not able to buy. Rules as to the moving and handling of loaded and empty cars are being revised so that empty cars will be hauled the shortest possible distance, and other reforms are proposed.

Whether all the benefits accrue or not remains to be seen, but economists and even some railroad men prophesy that this move marks the end of the old-time methods in railroad management, and that the future will see the business of transportation a unified business as is the business of transporting the mails.

* * *

The Tractor

The farm tractor has come to stay. There are conservative farmers that question their success. There were conservative farmers that questioned the success of the grain binder, the potato digger and the corn planter; but these machines are here and have helped increase the per capita production on our farms. The introduction of the tractor is another step in the same direction. With the decrease in farm labor supply it has been necessary for the farmers to work towards larger farm machines for the last twenty years. Many of us can remember when the five-foot mowing machine was a big machine, and anything larger was considered a "horse-killer". The disk harrows have grown from the limits of a two-horse team to four and six-horse outfits. The single walking plow was alone in its field but a comparatively few years ago. Now the gangs are as common in most sections as the single bottoms. And all of these changes have come about primarily thru the necessity of increasing or maintaining farm operations with less farm labor.

But the limit of all machines has been the size and number of horses that could be worked on them to advantage. That limit is soon reached with most machines. The tractor extends the limit and increases the possibilities. Not only are the larger machines coming into use but the various tractor hitches are making it possible to double up machines and greatly increase the amount of work done by the same number of men.

The individual problem of whether a tractor is a profitable investment on your particular farm is one that must be answered individually. The important considerations include the size of the farm, the nature of the soil as to freedom from stones and other obstructions, the slope of the land, the amount of plowing, harrowing and other heavy work done each year and the amount of belt work that has to be done, etc. Experiences are abundant to give a fairly accurate estimate of the value of the tractor in displacing horses and saving time in the heavy tillage activities of the farm. The farmer who knows about how many hours and what investment is required to handle this work with his present equipment can estimate what can be saved with a tractor. With the actual gain in money and time must be considered the advantage of getting the work done at the proper season, the value of being able to work the tractor overtime in rush seasons, and the advantage of tractive power that costs nothing when not in use.

The tractor offers a means of overcoming the labor shortage. It offers a chance to produce more from the same acreage. It offers a chance to do more of the heavy work easier than it has been done in the past.

HARRISBURG NOTES

Test Compensation Law.—Indications that a test in the supreme court of the workmen's compensation code supplement which exempts agriculture and domestic service from operation of the acts of 1915 will be undertaken during the new year. The State Compensation Commission has several times decided that agricultural labor does not come under the law and in half a dozen cases has held that certain acts were farm labor. In one case it frankly invited an appeal to the higher courts. There have been some appeals taken and one or two of them are to be prosecuted with the idea of obtaining a decision so that amendatory legislation may be asked of the general assembly of 1919, which will convene a little more than a year hence.

Sheep Interest Grows.—According to what officials of the State Department of Agriculture say there will be a big increase in the number of sheep on Pennsylvania farms next year as inquiries are being made in every direction for prices on ewes. In a number of instances questions have been asked thru the bureau of markets where as high as 50 and 100 sheep can be bought. The list of sheep for sale published by the Department last week brought in many inquiries and it is believed that some sales will be effected. Attempts are now being made to obtain information on the returns to farmers of the sheep raising this year. One or two instances have come to hand in which handsome figures were realized for wool, but the increase in interest came too late to make figures available.

Ask About Tractors.—More inquiries are now being made about the value of tractors in cultivation this month than ever before and the questions coming in indicate that if the machines can be bought and delivered on time that there will be double the number at work on farms in the spring compared to last year. Results of use of tractors in other states are being studied by men connected with institutes so that they can give answers.

War Stops Work.—Recent orders issued by the Public Service Commission in grade crossing cases indicate that except in propositions where there is grave danger that the commission will not insist upon abolition during the war. In a couple of instances plans have been ordered made for over or underground grades but that work need not be started for the present while in others it is stated that the operation will not be asked now owing to unusual conditions, but that the application may be renewed without prejudice.

Taking the Skilled Labor.—Activities of the draft law and of the state employment agencies the last few days have been showing a decided tendency toward taking the skilled labor, especially those used in construction. There have been bricklayers, masons and carpenters called by the national government and the state authorities have been rushing men familiar with any kind of building to the shipyards along the Delaware. The outlook is that these men are going to be kept busy all winter and some of them may not be available next spring or summer. Predictions are made that bricklayers and others will be sent to France for army work.

Questions On Dog Law.—The new dog license code, under which every man owning a dog in the third class cities, boroughs and townships will be compelled to take out a license for him, is causing many questions to be asked. The state authorities will call upon county commissioners to instruct constables to carry out the law and pay for killing ownerless dogs. If it is not done the State Police may be sent into districts where dogs are killing sheep and where county authorities refuse to act. The county officers would then be sent the bills. From what is learned at the Capitol it is the intention to enforce the law relative to penning up dogs at night with the greatest vigor in counties where sheep raising is being revived.

Unlicensed Agents.—Secretary of Agriculture Patton has been getting reports from various counties which indicate that men without licenses to sell nursery stock have been busy and that some people have been imposed upon. Fruit growers and farmers have been asked to report all persons attempting to sell trees without state licenses.—Hamilton.

NEW YORK LETTER

Oldest Town Fair of State Discontinued.—After 62 annual fairs the Dryden Fair Association has sold its property at auction for $4,000. For many years it was a successful rival of the best county fairs of the state, but for the past few years it has had a hard time to pay expenses.

County News.—The receipts of the Otsego County Farm Bureau Association for the year was $7,080 and its expenditures $6,328. Broome County's poor cost the county $2.68 per capita per week for maintenance at the county farm. Cortland County's cost was $2.10 a week. Niagara County farmers have done an unprecedented amount of fall plowing in preparation for next year's crops. At a sale of Holstein cattle at Whitney's Point 122 head were sold for $40,000. A Rushville farmer who believes in sheep sold wool amounting to $110.50 and 40 lambs for $552, from 30 ewes the past year, making a total income per ewe of $22.08.

Farm Loan Board Warns Farmers.—Farmers and all friends of the Farm Loan System are warned that unjust attacks are being made on the system to discredit it with would-be patrons, and that such attacks are bound to fail. Several amendments to the existing law will be placed before the next Congress.

New York Dog Law.—A large number of claimants for damages done to animals or poultry by dogs find they will have to wait until the Legislature meets. About 600 claims have been made amounting to $60,000. About 90 percent of this is for sheep killed or wounded. Up to December 1, about $270,000 has been collected for dog licenses, yet not a cent can be paid out for damages. Many of the claimants need the money badly, having been practically put out of business, and while the funds are practically five times the amount of damages, yet the form of the law puts off payment until such time as the Legislature acts. Needless to say the dog law will receive attention at the hands of the people in these counties.

School Law Agitation.—The Assembly has practically assured the public it will repeal or amend the much discussed new school law. It passed this body by only two majority last winter, while only seven Senators voted against it. Senator Elon R. Brown is to be shown that this law is to come above party consideration, as the opposition to it in its present form gains force daily.

Farmers' Claims Looked After.—With the destruction of the efficient foods and markets department the farmers will lose a much appreciated source of help in securing justice from the express companies. During the past year the department has been the largest receiver of eggs in New York City. Over 500 claims against transportation companies have been prosecuted by the department and payment secured while 200 claims are yet on file.

Seed Corn Shortage.—The various counties of the state find they are faced with a serious seed corn shortage. Local supplies are much less than usual because of early frosts and the Western offerings are scant and of poor quality. In some counties a preliminary survey has already been taken to ascertain supplies and the shortage is said to be considerable.

Farm Labor Policies.—The Onondaga County delegation, with other county representatives were favorably received at Washington. The only definite statement issued regarding the situation at present is that farmers and other employers are advised to hire help only tentatively up to February 15. After that time they are told it would be safe to hire help for the year with no fear of having it drafted into national army service afterwards.—F.

NATIONAL ASSOCIATIONS MEET

The American Sociological Society, together with seven other national associations devoted to the study of economic, social and political questions, held its twelfth annual session in Philadelphia last week. The questions discussed related to the further extension of democratic principles and the improvement of social conditions. The leading colleges and universities of the country and representative men and women from many of the states of the Union took part in the discussions.

One of the co-ordinating bodies was the American Farm Management Association. The general subjects, land utilization, employment of labor and food production, provided themes for each of the three sessions, in which many sub-topics were ably discussed.

PRICE CORRECTION

The price of the American Gentleman Bill Fold as advertised by Chas. K. Cook Co., Camden, N. J., in our issue of December 29, is 75 cents instead of 50 cents as stated in the body of advertisement.

PENINSULA HORTICULTURAL SOCIETY MEETING

The thirty-first annual meeting of the Peninsula Horticultural Society will be held at Cambridge, Md., January 8, 9 and 10, 1918. A splendid program of subjects has been prepared and they will be discussed by some of the leading horticulturists of the country. A horticultural show will be held in connection, and $2,000 is being offered in prizes.

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Undoubtedly, the biggest question of all is: "How can I cut the cost of production?" Labor is scarce and more costly than ever before. Let Iron Age Potato Machinery come to your aid. They make the most of high-priced help and reduce production costs.

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Iron Age Potato Diggers reduce the cost of digging, especially when the Engine Digger is used. They get every tuber. The Engine Digger works readily in either sandy or heavy clay soil, or in soil choked with crab grass and green vines. Automatic throw-out-clutch prevents breakage. Iron Age Diggers may be had in four styles—one will serve your purpose.

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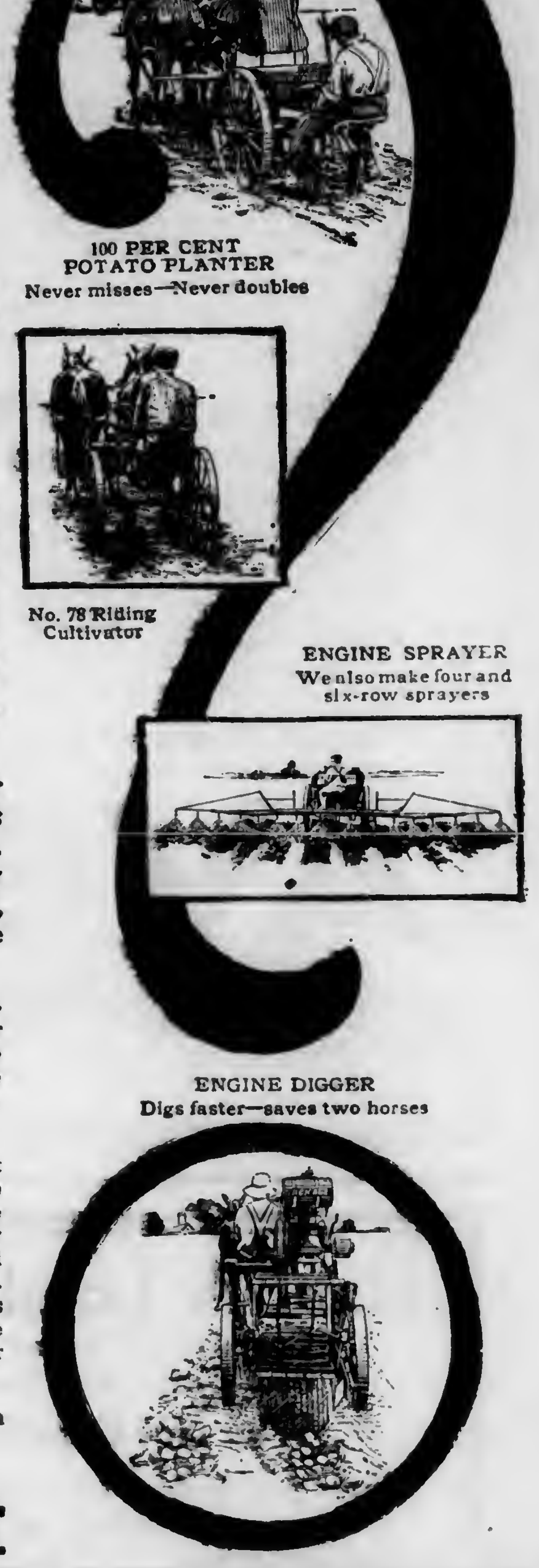
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Wanted first-class vegetable gardener who knows up-to-date methods, industrious; likes to work and live in the country; Will be expected to milk two or three cows, care for them, two horses, and chickens. Employment entire year. Fine brick cottage, with electric light, hot and cold water, free. Man and wife without children preferred. One mile from village, 90 miles from New York, on Long Island. Write, giving full details. H. E. MASTER,
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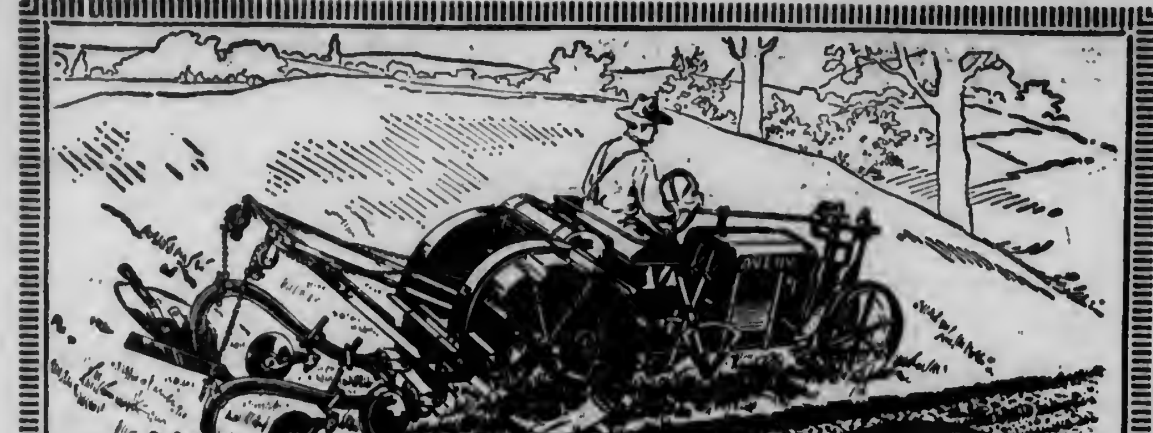

Avery Two-Row Motor Cultivator

Avery "Yellow Kid" Thresher

A New Idea in a Small Tractor Plow Outfit

You can now get a small Avery 5-10 h.p. Tractor with a special hitch and lifting device and use your old horse plow.

Attach your plow to the drawbar and connect the lifting chain and you have a complete tractor plow outfit. If you have hilly ground and want to use both right and left hand plows, attach them as shown here. You can raise and lower the plow without getting off the tractor. With the plow raised you can back up in short spaces easier than with horses.

This tractor is just the size for doing all the work on small farms or for light work on larger farms. The price is the lowest of any tractor built.

There is a size Avery Tractor to fit every size farm. Six sizes in all — from this small 5-10 h.p. up to a large 40-80 h.p. There is also an Avery Tractor Plow in light and heavy styles to fit every size tractor.

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THE COMING OF THE TRACTOR

(Continued From Page 2.)

but we cannot wait until all the experimenting is done. So we bought one some weeks ago, after several years of careful investigation and study, and after seeing most of the different makes at work in the field. The little machine we bought embodies as many of the desirable points as we could in our opinion secure in one machine. It weighs 3,000 pounds and is rated at 9-18; that is, nine horsepower on the drawbar and 18 on the belt. It seems about as well constructed as an automobile and what little time we have used it seems to show that it is well adapted to our work.

Starting Our Tractor

It went rather awkward to operate it at first but we were soon able to do a better job of plowing than could be done with horse power in the same field. It draws two 14-inch bottom plows and on the plowed land we are able to draw three harrows, well weighted. We find the self steering attachment very convenient, as the operator can give attention to adjustment of the plows and look after things in general while his attention is not needed at the steering wheel all the time.

Perhaps sentiment had something to do with our buying a tractor for our farm. It seems to offer an opportunity to apply skill and efficiency to our farm work in greater degree. I am sure the tractor will add much to the joy and satisfaction we derive from our farm, and will enable us to increase production, or do more with less manual labor. As to whether it will be an economic or a profitable investment, remains to be proved. I am sure we are going to get a lot of pleasure and satisfaction out of its possession and use and in my estimation this is worth much. Then, too, there is a feeling of satisfaction in the experience gained in advance of the majority, which experience we hope to use in aiding our fellow farmers.

HAS DISPLACED OTHER POWER

We have a 12-25, four-wheeled tractor. We have also owned several makes of steam tractors and stationary gas engines and have some of them now standing around in the yard idle. Whenever we use our feed mill, wood saw, hay baler or our corn shreader, we use the tractor. For plowing we have a three-gang plow. Should the ground pack and need loosening up, we have a 29-disk harrow that soon gets it in fine shape.

I had a party ask me the other day what my gas cost per acre for plowing. I told him that it cost us nothing, for the difference in the quality of work done by the tractor with the three-gang plow will more than pay for the gas consumed. We could not do without our tractor.—S. Krahenbill, Princess Anne Co., Va.

BIG DEMONSTRATION—1918

The National Tractor Demonstra- October 16, decided to hold one big, tion Committee, meeting at Chicago, national tractor demonstration in 1918. This demonstration will include: 1. Tests on fuel consumption in plowing, disking and other kinds of field work. 2. Tests on different types of traction wheels, wheel equipment and on tractive efficiency. To include tests running wheels in furrow, on upland ground, and also on plowed ground. 3. Tests on steering mechanism. 4. Tests on belt work. At least one ten-hour plowing run during the Demonstration. It was decided to hold this Demonstration at some point in the vicinity of Detroit, Mich., or Cleveland, Ohio, if suitable land can be found; 3,000 to 5,000 acres will be required in one body, or made up of adjoining fields.

WORK SUPERIOR TO HORSES

I have had very satisfactory service from my farm tractor. It is a wonderful help where my ground is smooth. I would not do away with my tractor for anything. It is taking the place of eight or ten horses and is decidedly more economical in every way. The work done in plowing is superior to that done with horses.—John W. Stewart, Berkeley Co., W. Va.

DISPLACES THREE HORSES

Last spring I bought a 14-27 horsepower tractor. It is a four-cylinder outfit. I have used it most for plowing and harrowing, pulling three 14-inch plows and turning about three-fourths acre per hour. When harrowing, we use a five-section, spring-tooth harrow covering two and one-half acres per hour. Under ordinary conditions we use about 25 gallons of kerosene, one-half gallon of gasoline and one and a half gallons of oil in ten hours' continuous run. Our tractor has had no repairs other than on fuel tank, which amounted to $1. I have never called on an expert and have had no trouble with the outfit.

My experience has been very satisfactory this season as we have done work with four horses and the tractor that would have required seven or eight horses without the tractor, and did the work in a shorter time, thereby making a saving in help. A man should figure first cost, depreciation and repairs (for they will surely come and be expensive). On the other hand, the day you run the tractor into the tool barn you can forget it as you have no expense except the interest on the investment.

I believe the tractor will be a good investment for a farm of 150 acres of level, tillable land, provided the operator is something of a machinist. The man who is unable to operate tools without being in continual trouble had better leave the tractor out of his outfit. In buying, avoid the cheap, poorly-made machines as they will be a continual source of trouble and expense. Personally, I believe the four-wheeled type will be the most satisfactory for all work. And all gears should be enclosed, to eliminate wear.—E. C. Nutt, Yates Co., N. Y.

DIGS POTATOES WITH TRACTOR

I doubt if a tractor would work to good advantage on very small farms, but on 100 acres or over, it will give good results. My tractor does the work of two teams, and much better than they would do it, on account of being able to plow deeper, putting the ground in condition to produce better crops. I also used my tractor this year for digging potatoes, with very good results. When not busy with farm work I have the machine equipped with a pulley, from which I run the fodder cutter and corn sheller and do other work.—John Thropp, Mercer Co., N. J.

PRACTICAL TRACTOR HITCHES

(Continued From Page 3)

the diagram that the middle machine has a longer pole than the two at the ends; by this arrangement the outfit can be turned to better advantage. A forecarriage beneath the stub pole would be an advantage to prevent seesawing.

When Two Hayloaders Are Used

The steady power of a tractor is a decided advantage for loading hay on level ground. The supplementary drawbar shown in diagram one is easily adapted to this purpose. The relative positions of the wagon poles on the drawbar are governed by the regulation width of the windrows. (See Diagram 4.) It will be found an advantage here to have the ends of the drawbar supported by caster wheels, or wheels with stub axles. These keep the drawbar and wagon poles off the ground. It must be remembered that such a hitch offers no means of holding the wagon back on a hillside, except by the friction of the rake teeth of the loaders.

With Plows and Peg or Disk Harrow

Such a combination as shown in diagram five does effective work as the harrow pulverizes the moist earth, preventing loss of moisture. The construction is simple. The 2x4 hard wood piece B is attached to the plow beam C by means of U-bolts with the supplementary drawbar extending over the furrow just turned. At the outer end of this drawbar holes can be bored to allow for adjustments in the position of the harrow. The cable A connects the outer end of this drawbar to the front end of the plow beams. This serves as a support against the weight of the disk or peg harrow.

Offset Hitch for Road Grader

Where an offset hitch is not supplied with the grader, diagram six shows how a simple offset hitch can be made, which will allow the tractor to keep near the center of the grade where better traction is obtained while the grader can be working in the ditch. To construct this hitch, a strong 2x6 of hard wood about four feet long can be used. The ends of this are connected to the grader axle by means of stay chains. A draw chain extends from one end of the new evener to the tractor and this chain should be only a few inches longer than the grade pole. The width of the offset is controlled by the grader operator by means of a block and tackle connection between the end of the drawbar chain. By reversing the connections, this offset can be made for either side of the tractor.

For Two or More Mowers

Diagram eight shows the outlines of a manufactured hitch for attaching two or more mowers behind a tractor. The first mower is connected directly to the tractor drawbar by means of a stub pole. The first mower requires no operator, for the operator of the tractor can raise or lower the cutter bar when necessary. The second mower is attached to the first by means of a bracket clamped to the axle of the first mower. From this bracket a flexible, adjustable tongue connection, marked A in the diagram, connects to the second mower. This tongue is adjustable to accommodate different widths of mower cutter cutter bars.

The attachment for the third mower corresponds to the attachment for the second. The proper of a crank and quadrant attached to the stub pole and flexible pole of the width of cut is maintained by means trailing mower. A series of mowers connected in this manner cannot, of course, be expected to turn a sharp corner. For a "non-stop run", the field should be laid out with rounding corners.

Trailer Hitch for Grain Binders

With a trailer hitch the grain farmer can operate as many binders behind his tractor as the tractor has the power to pull. Various types of hitches have been designed to meet the requirements of the different lines of harvesting machines on the market. The first binder is connected directly to the tractor drawbar by means of a stub pole. The poles on the trailing binders are pivoted to a rigid frame and controlled from the seat by a gear quadrant and pinion with a crank.

This system of control enables the operators of the trailing binders to swing the platforms of their machines thru a wide radius to or from the grain. Such a hitch can be attached to these machines without any alterations or extra holes in the binder frames.—From Co-operative Tractor Catalog.

THE GENERAL PURPOSE HORSE

Four years ago I purchased an 8-16, four-wheeled tractor for use on our 220 acres. Of this amount about 100 acres are flat and of ordinary grade. The tractor did much better plowing than a team would do. It does the work of about three teams in plowing and fitting the land. The fitting is better done with a team, as we can set the disks way down and then load it with a bag of sand on each side so that the soil is put in an exceptionally good condition for planting.

The tractor works everywhere except on hills and practically any man with a little horse sense can operate it. In the busy season we arrange so that a substitute man drives the tractor during the noon hour and the "iron horse" keeps busy from early morning until night. It burns 25 gallons of kerosene per day of ten hours and, of course, we get a lower price on kerosene where we buy in quantity.

In haying time we were short of teams and had long hauls. We hitched the tractor to a hay wagon and drew the hay loader behind it, doing good work very quickly. As soon as one wagon was loaded, the team, which traveled faster, started for the barn and the tractor brought another heavy wagon and was loading it while the team was away. This relieved the horses and put a good deal of work on the iron horse. When it came time to fill the silos, of which we have four, we found that we could use the biggest cutter that we could get.

In threshing, the hired power broke down and we moved the tractor up to keep the engine going instead of letting the crew stand idle. A day's work with a wood saw will cut up more wood than a man could saw by hand in all winter. We found it advisable to buy another tractor this year. We are keeping two busy, having rented considerable land. There are many uses to which the machine can be put on any farm. It is a paying proposition for any farmer who has fifty acres of level ground.—J. R. Loomis, Jr., Warren Co., N. Y.

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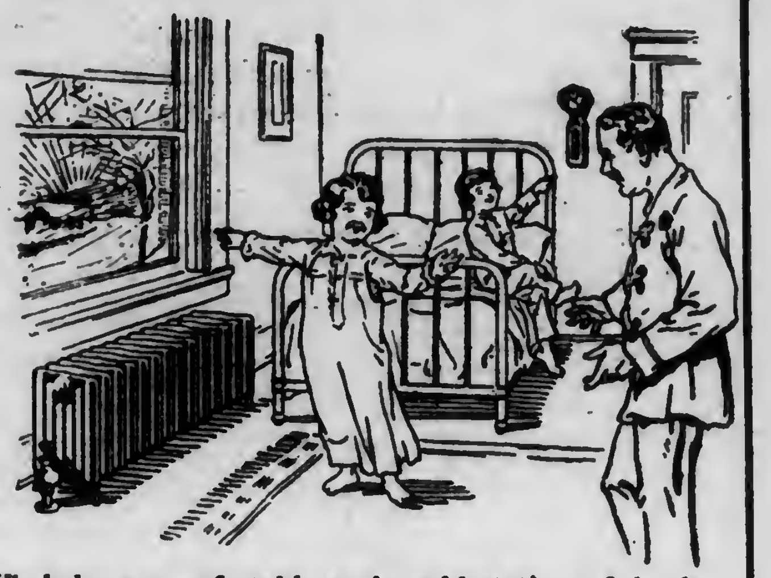

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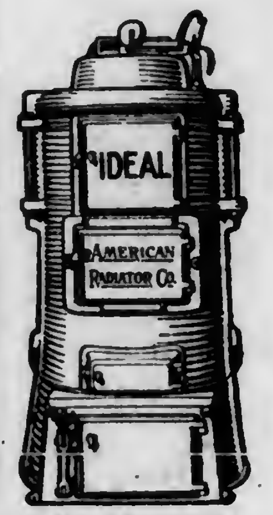

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Causes of Difficult Churning

The Cow, the Feed, the Cream or the Churn

By ERNEST L. ANTHONY

During the early fall and winter many people who make butter have trouble in getting their cream to churn. This trouble is generally known as difficult churning, and is characterized by the cream starting to froth or foam after it has been churned several minutes, and by the small granules of butter refusing to gather when the cream starts to break. Difficult churning is caused by one or more of the following factors: Cream from cows in abnormal condition of health or feed, improper handling or abnormal conditions of cream and improper churning conditions.

It is the belief of many buttermakers that cream should never have to be churned more than five or ten minutes and that when cream requires a longer time than this, it is a case of difficult churning. This is not correct. for proper churning cream should churn in 25 to 30 minutes. It is not desirable to have it churn in only a few minutes as a poor butter usually results; neither should it take more than 30 minutes, if all factors are properly watched.

Feeds and the Cow

The butterfat exists in the milk in very minute globules, about 25,000 of them being necessary to make an inch in length. These globules are composed of the natural fats of milk and under normal conditions are fairly soft and collect together quite easily in the churning of the milk or cream.

Trussel Track for Litter Carrier

When cows are fresh the butterfat globules which are in the milk are fairly soft and are easily collected together in the churning process, but as the lactation period advances the character of the butterfat changes and the fat becomes harder and less easily brought together. Inasmuch as many farm cows are fresh in the spring, this condition becomes more noticeable as the fall or winter advances. Together with the above, butterfats are influenced by the feeds the cows receive. Green succulent feeds are conducive to soft fats, so that during the summer when the cows are on grass there is seldom any trouble in churning, but dry feeds, such as corn stover, straws, timothy hay and grains such as cottonseed meal, and sometimes corn and ground oats, all tend to cause the character of the butterfat to change and become harder and more difficult to bring together.

To eliminate the above causes, care should be taken to see that cows are not continued in milk too long. After a cow has been in milk for 10 to 12 months, she should be dried up and given a rest, altho it is often a practice of people who milk only one cow to keep this cow in milk for more than a year. Care should be taken that cows are always in good health, and never allowed to become extremely thin or unhealthy in any way. Unhealthy cows should not be milked and milk from unhealthy cows is dangerous to use.

As the season advances, care must be taken that the succulent grass and feeds are replaced by proper feeds. Silage is an excellent substitute for the succulent summer grasses, and roots, such as beets, turnips, etc., are excellent in combination or in place of silage.

While it is absolutely necessary to feed the poorer feeds which are mentioned above, which hardens fats, they should be fed in combination with bran, oil meal or gluten, which are high protein feeds, are laxative in nature, help to balance the ration and to keep the fats soft. Cows should always be fed on a balanced ration, as a cow to produce normal milk should have all the elements necessary to produce milk supplied in the feed. If the feed is lacking in any of these elements, that is, unbalanced in its composition, in time the cow will reduce the amount of milk she is giving due to the deficiency of the feed.

Handling of Cream

At certain seasons of the year, difficult churning may be the result of improper handling of the cream. Cream which is too thin, that is, has a low percent of fat, will churn harder than cream from the same milk having a higher fat content. For good churning, cream should contain from 28 to 35 percent fat. Much hand skimmed cream contains only 15 to 20 percent fat. Where cream is thin it requires much more agitation in the churning process to bring the fat together.

To churn easily cream should have ripened and soured long enough that the viscosity of the cream has been cut by the acid developed in ripening. During the summer it is al-

most impossible to keep cream long enough to gather a churning without it becoming sufficiently sour, or too sour. This is due to the heat, but as winter sets in cream may be kept much colder, even nearly frozen, so that the ripening process is much retarded. If cream has not ripened during the time it is being gathered for the churning, it should be warmed up to 75 or 80 degrees and allowed to ripen before it is churned. Usually allowing the cream to set at this temperature over night is sufficient.

Cream churns best when it has at least 0.4 percent acid in it. It is not well to let it get too sour as undesirable flavors may result. Where the buttermaker has an acid test for determining the degree of ripeness, the proper souring is easily controlled. However, few people have such equipment, and must rely upon tastes to tell them when the cream is ready for churning. The following table will assist in determining the proper stage of ripening.

Guide for Judging Sourness of Milk or Cream Without Acid Test

Milk fresh from the cow averages 0.07 percent acid.

Milk containing 0.2 percent acid would be considered absolutely sweet by taste.

Milk containing 0.21 to 0.25 percent may give a very faint sour odor but is generally sweet to taste.

Milk containing 0.3 percent acid has a sour odor and slight acid taste.

Milk containing 0.3 percent acid is mildly sour.

Milk containing 0.5 percent acid is distinctly sour.

Milk containing 0.6 to 0.7 percent acid is quite sour.

Milk containing 0.8 to 1 percent is the maximum amount generally developed even in very old milk or cream.

Note: 0.4 to 5 percent acid in cream is the most desirable for good butter making.

The souring or ripening of cream is a natural process, caused by bacteria which are normally in milk. Bacteria grow best at 70 to 80 degrees. Sometimes in the fall or winter bacteria are not found so active in milk and cream, and it becomes necessary to use some sort of a starter to help the souring process. Where a starter is used care should be taken that it is a good one. Good clean sour skimmed milk or buttermilk added, one quart to two gallons of cream, makes a good starter. Where buttermilk is used, care must be taken that it is good and has no bad flavors as poor buttermilk added to cream may cause undesirable ripening and poor flavors to the butter.

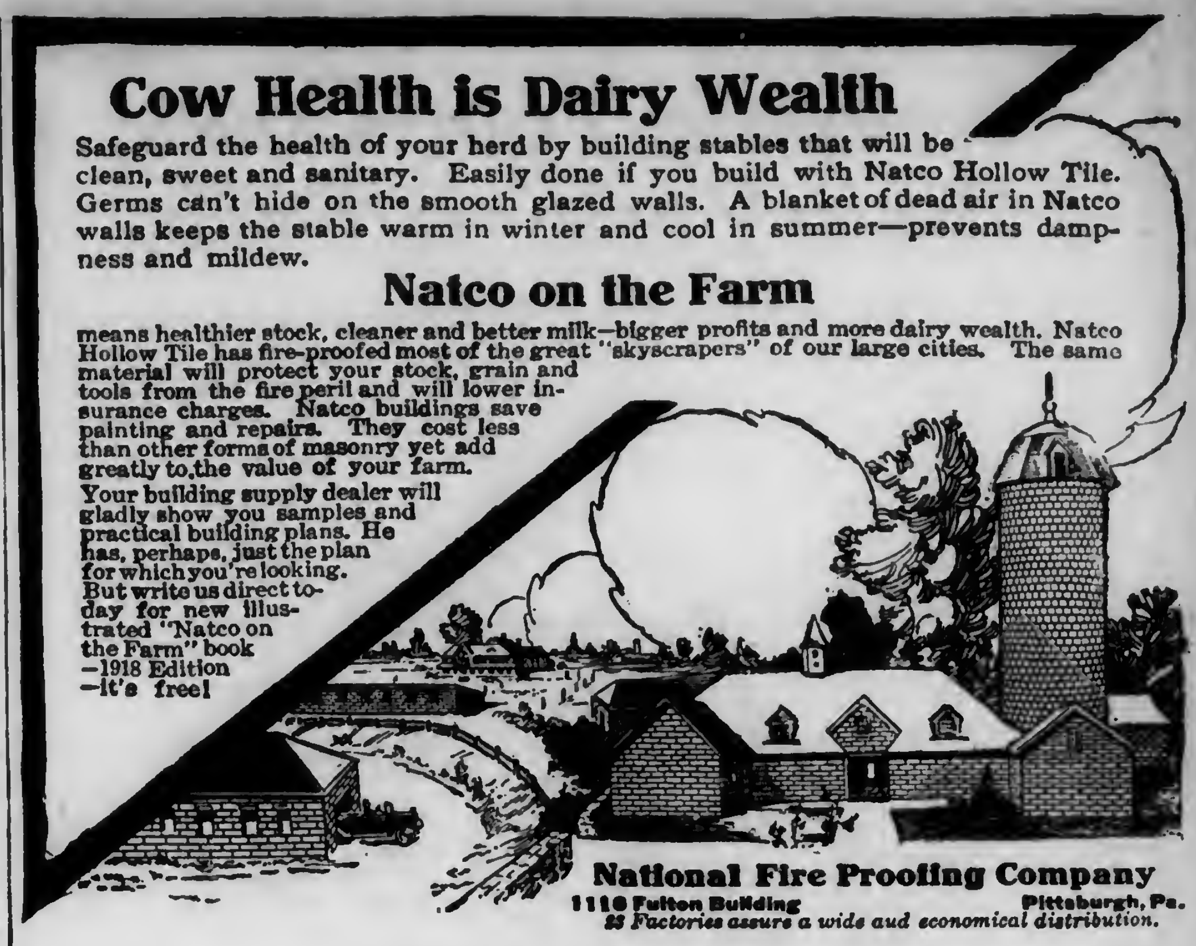
While difficult churning may be caused by one or both of the above causes—abnormal conditions of cow or feed, and abnormal or poorly ripened cream—it may also be caused by improper churning conditions.

Churning Conditions

Cream to churn right must be at the right temperature. Guessing at the right temperature is a disastrous thing in churning. In the summer, when the butterfats are soft and cream is always well ripened, a low temperature can be used, 52 to 56 degrees being found to be best. As fall and winter sets in and fats become harder in composition and cream is not so well ripened, a higher temperature must be used; 56 to 60 degrees is the range of temperature generally found to be best. It must be borne in mind that a difference of only a few degrees makes a great difference in the churning, not only in the case of churning, but also in the quality of the butter made. Every buttermaker, regardless of the amount of butter made, should have a thermometer and use it. A careful study of the effect of temperatures and the regulation of temperatures of cream before churning will eliminate many cases that otherwise would be difficult churning.

Whenever cream starts to froth or foam, it is usually an indication of the cream being too cold. When this occurs, pour the cream from the churn into a bucket and set the bucket in a pan of warm water and gradually raise the temperature of the cream from two to six degrees, then replace in the churn. Never pour hot water directly into the churn, as it may raise the temperature too high and cause a soft, salvy butter, or give the butter a scalded taste.

Difficult churning may sometimes be caused by improper churning. The formation of butter is the result of agitation of the cream until the butter fat globules collect in small



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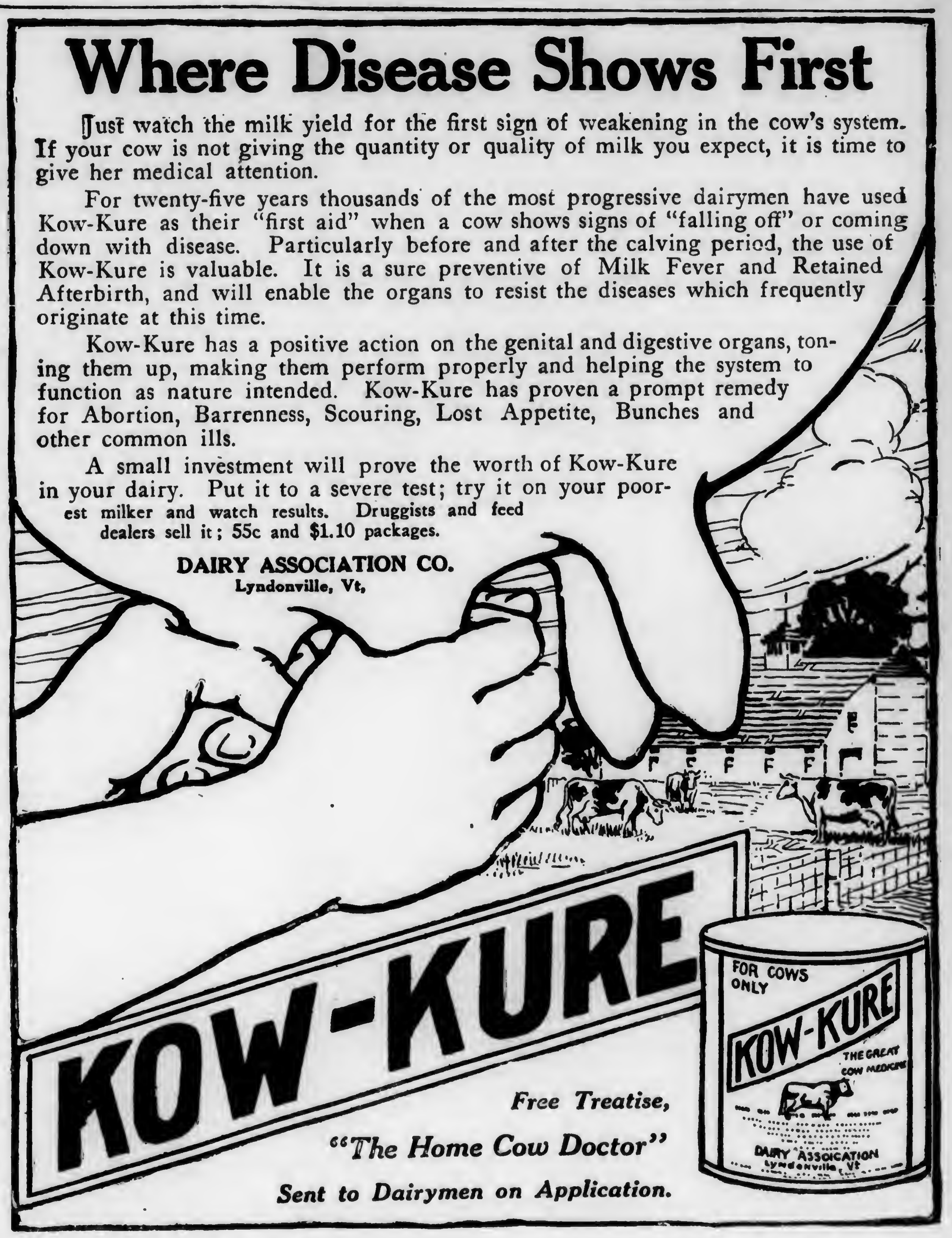

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Just watch the milk yield for the first sign of weakening in the cow's system. If your cow is not giving the quantity or quality of milk you expect, it is time to give her medical attention.

For twenty-five years thousands of the most progressive dairymen have used Kow-Kure as their "first aid" when a cow shows signs of "falling off" or coming down with disease. Particularly before and after the calving period, the use of Kow-Kure is valuable. It is a sure preventive of Milk Fever and Retained Afterbirth, and will enable the organs to resist the diseases which frequently originate at this time.

Kow-Kure has a positive action on the genital and digestive organs, toning them up, making them perform properly and helping the system to function as nature intended. Kow-Kure has proven a prompt remedy for Abortion, Barrenness, Scouring, Lost Appetite, Bunches and other common ills.

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Lyndonville, Vt,

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Free Treatise,
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Sent to Dairymen on Application.

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KRAUSE DAIRY FEED is a better business proposition for you than any combination of lower grade stuff. You feed for results and safety. You want a maximum milk yield and a healthy herd. Krause Dairy Feed will give you both. It has proved its sterling value for thousands of feeders.

It is a highly nutritious, easily digested and scientifically balanced ration which will give your cows exactly what they need for big, rich milk production without forcing.

Its formula was worked out under the approval of experts in two of the leading agricultural colleges. It is the result of long, successful experience in the manufacture of dairy feeds.

KRAUSE
24
HIGH PROTEIN

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Fed alone or with home grown products, KRAUSE DAIRY FEED is always a money maker.

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Sell your high priced grains and use KRAUSE DAIRY FEED. Compare the costs and the results with any lower grade combination and you will find that you are saving and making money.

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I have used your fertilizer on all crops for many years and have had splendid results. I have always found them in excellent drilling condition.

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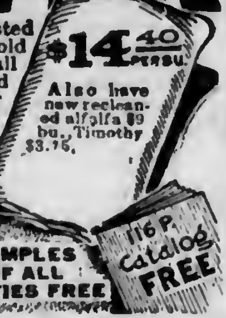
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PIPE second hand. Large stock all sizes furnished with new threads & couplings. Prompt shipments. J. F. Griffith, 416 Moyer St., Phila.

HAY Ship To The Old Reliable House Daniel McCaffrey's Sons 623-625 Wabash Bldg., Pittsburgh, Pa.

granules of sufficient size for separation from the buttermilk. To secure proper agitation the churn should never be more than one-third full. When the churn contains more than this amount of cream, there is not room for the proper agitation of the cream and slow gathering results. If there is more than enough cream to fill the churn more than one-third full, it is better to make two separate churnings. The churn should be turned fast enough that medium agitation is secured, but care must be taken that the churn is not revolved so fast as to cause centrifugal force to be developed and cause the cream to stay in one end of the churn and not be agitated.

Whenever difficult churning is experienced the buttermaker should figure out which one or more of the three factors may be the cause, and then try to eliminate this cause as soon as possible, rather than to go ahead and try to churn the cream and try to overcome the trouble after the churning has started. The fact that the best buttermakers, who have made a careful study of the factors affecting proper churning and good buttermaking, very seldom have trouble with difficult churning, is an indication that by careful study difficult churning may almost always be overcome

COW-TESTING ASSOCIATION DEMONSTRATES ITS VALUE

Accurate records of the amount of milk and butterfat produced and the feed eaten by each cow in the herd are necessary in order to determine which are the profitable and which the unprofitable cows on the farm. While a good judge can usually tell a good cow from a poor one, yet there are frequent cases where cows may differ by as much as two or three thousand pounds in their annual milk yield and it may be imposible to determine from general appearances which is the better producer.

This fact was recently demonstrated in an interesting manner by a judging contest held under the direction of a representative from State College at a farmers' picnic at East Greenville, Montgomery County, Pa. The cow-testing association had just completed a year's work and six association cows varying in yearly yield from 6,000 pounds to 11,000 pounds were used as a judging class. A prize of $10 was offered to the man who could place the six cows in the correct order of their production.

Fifty persons entered the contest. The $10 prize, however, still remains to be awarded as not one of the fifty contestants succeeded in placing the cows in the correct order of their milk production. Only one man placthe first three cows in correct order and only five succeeded to the extent of getting the first two cows in correct order. Thirty-seven out of the fifty contestants did not place the best cow first, and more than half of them did not place the poorest cow last.

This contest made it fully apparent to those present that an actual record of each cow's production, such as is furnished by a cow-testing association at low cost, furnishes the only guide as to which cows in the herd are the profitable ones to retain for milk and breeding purposes and which are the unprofitable ones and should be sent to the butcher's block. —A. A. Borland in Penn. State Cir.

SAVE THE MILK CANS

With the co-operation of the dairy trade, George E. Haskell, dairy representative for the U. S. Food Administration, has collected information on the probable future supply of milk and cream cans. The sheet steel and tin plate industries have been burdened with war orders to the extent that cans for dairy products are not only high priced but are frequently unobtainable except thru special channels not available to the average dairyman. Conservation of present supplies is therefore essential to insure enough containers for marketing the milk and cream which American farmers have been asked to produce. The campaign is being made along two lines: (1) to check the rough handling of shipping cans by transportation companies, (2) to investigate methods of straightening and retinning old and battered cans.

The Food Administration has already asked for some relief of the situation thru the Committee on Express Transportation of the American Railway Association. Mishandling of cans includes three classes of alleged abuses: (1) Unloading cans at wrong stations. (2) Unloading cans with unnecessary roughness. (3) Allowing cans to remain out in the rain and become rusty or be stolen.

Investigations as to rejuvenating old cans show that the cost varies from one-fourth to one-third the value of new cans. In the renewing process old cans are taken apart, the bent metal straightened and new sections furnished if necessary. The cans are then reassembled and retinned. While this matter is of great interest to creameries and large milk plants, farmers can take advantage of the economy by making up a car and marking their cans to identify ownership. A specimen retinned can secured by Mr. Haskell compared favorably with a new can in strength and weight, but lacked the usual polish. Retinning is essentially an economy measure and polishing adds to the cost.

In view of the shortage of tin plate and rolling capacity in the mills it is likely that the use of tin-plate will be restricted by the Government, and it is accordingly necessary that every effort be made to save it.

Ration No. 9.—For pasture grass feeding after July 15:

Lbs.	Feed	lbs. Protein	Therms. Energy
100	Bran or distillers C. G.	11	53
150	Cottonseed meal	48	135
100	Gluten feed	20	81
50	Linseed meal	14	44
400	Mixture contains	93	313
100	Mixture contains	23	78

Energy Ratio 1 to 3.4. To a Guernsey or Jersey cow, yielding over 20 lbs. milk daily feed 1 lb. grain for every 5½ lbs. milk. To an Ayrshire, Holstein or Shorthorn, yielding over 25 lbs. milk daily, feed 1 lb. grain for every 6½ lbs. milk.

Don't guess that "Old Red", or "Spot" or "White Face", or "Blackie", or "Brindle" are paying for their keep at present high feed costs. Weigh the milk and know the facts. Beef prices are now high.

Make ice save fuel. Gather natural ice this winter so that much needed coal will not have to be used for making artificial ice next summer.

Kill the rats on your farm and save the amount of your taxes.

Growing Cantaloupes

Secrets of Success with this Crop

By C. C. HULSART, New Jersey

On picking up the Pennsylvania Farmer of November 10, I was attracted to the picture on the cover page. The colored boy is holding a cantaloup while standing in a melon patch and a heap of melons at his feet. The boy appears happy and also looks as tho he anticipated a good time. It has been said that "anticipation is the greater part of all pleasures." Personally I think participation far more practical; especially so when it comes to partaking of a well grown cantaloup, fresh from the vine. This particular colored boy seems to have stepped one step ahead of his fellows and left the proverbial watermelon for the higher classed fruit—the cantaloup. I venture to say not over one-half enough good melons are grown. Many are planted that never reach maturity, other plantings are treated with indifference, hence produce fruit of very inferior quality.

The cantaloup is a fruit that must be understood before good luscious melons can be produced. The writer has seen people try to grow cantaloupes in a soil so clayey that it was impossible in nine seasons out of ten, and when they did mature fruit it was so poor in quality a well bred hog would not eat it.

When looking at the picture referred to it occurred to me that altho many articles have been written on this subject. still many new readers of this paper are continually being added to its family, hence a few hints made from facts might be acceptable First, the cantaloup is a warm weather plant, it will not stand cold weather nor cold feet. Second, it will not thrive in an acid soil, neither will it thrive in soil abnormally wet, even tho that soil becomes quite dry during the warm summer months.

The cantaloup, to do its best, should have natural surroundings and I will attempt to name them. First, may I ask why it is that the Rocky Ford country produces such a high flavored melon? Why, simply this: That country is what may be called perpetual sunshine and that is the secret in the flavor of the Rocky Ford melon. Sunshine thru the leaf promotes the manufacture of sugar—the main ingredient in the melon to make it palatable. Now, if we growers work to that end we get most of all we want in a good melon, namely, size, appearance, succulence, palatability and volume of crop. I admit that our western brothers are blessed with much more sunshine than we are here in the east. Then, how can we compete? Why, by growing more leaves so that the plant can do more work in what time it has. The leaves of a plant are its laborers, hence the more of them we have on the plant, in a strong healthy condition, the more work we get done. (Not always the case with human laborers.) What is essential to make the plant do all this work?

First, a congenial soil. That soil should be sandy, or one that warms up to some depth fairly early in the spring. Second, it should be alkaline; hence a ton or more of burnt lime per acre is a matter of insurance. The lime not only sweetens the soil; it helps liberate mineral matter to the advantage of the plant. It also helps decompose vegetable matter and make a better home for the nitrifying bacteria in the soil. The soil should be well filled with decaying vegetable matter. In the absence of animal manures there is nothing better than a clover sod turned under, provided the grower knows how to kill the cut worms that are hatched and grown in almost all clover sod fields. If animal manures are used, broadcast 10 or 12 tons per acre before plowing and disc it into the soil. Should the soil be just a little too heavy for ideal melon soil, a half shovelful of well rotted animal manure in each hill will help the young plants to get a start, otherwise none is necessary. In fact, on real sandy land it is a hindrance when applied to the hill, because when the first dry spell arrives the manure dries out and never gets wet again during the growing season; but when finely divided and applied broadcast and incorporated with the soil it holds moisture much better.

To secure this extra leaf surface there must be a rank growth of vine. To secure this growth, repeated applications of available nitrogen should be used. My experiments, together with observations made elsewhere,

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LIGHT 4

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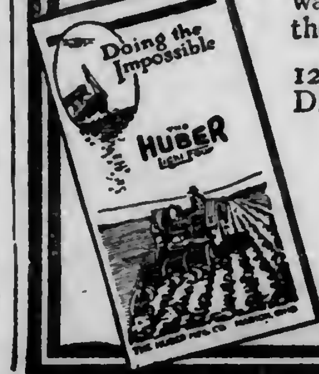
The Huber Light Four gets the plowing done when you want it. Powerful enough to pull three 14" bottoms over any field. Light enough to work on fields impassable to horses. Works on plowed ground without packing.



Besides doing the work of four three-horse teams, it operates all farm machinery. Gives power for threshing, pumping water, running the baler, filling the silo. Pays its way on the farm every day in the year.

12 h.p. at the draw-bar, 25 h.p. at the pulley. Center draft. Direct drive. Turns in a six foot radius. Never runs hot. Self-steering in the furrow. Easy to manage. Easily plows an acre an hour. Adjusts itself to any field. Speed 2½ to 4 miles per hour. Burns gasoline, kerosene or distillate.

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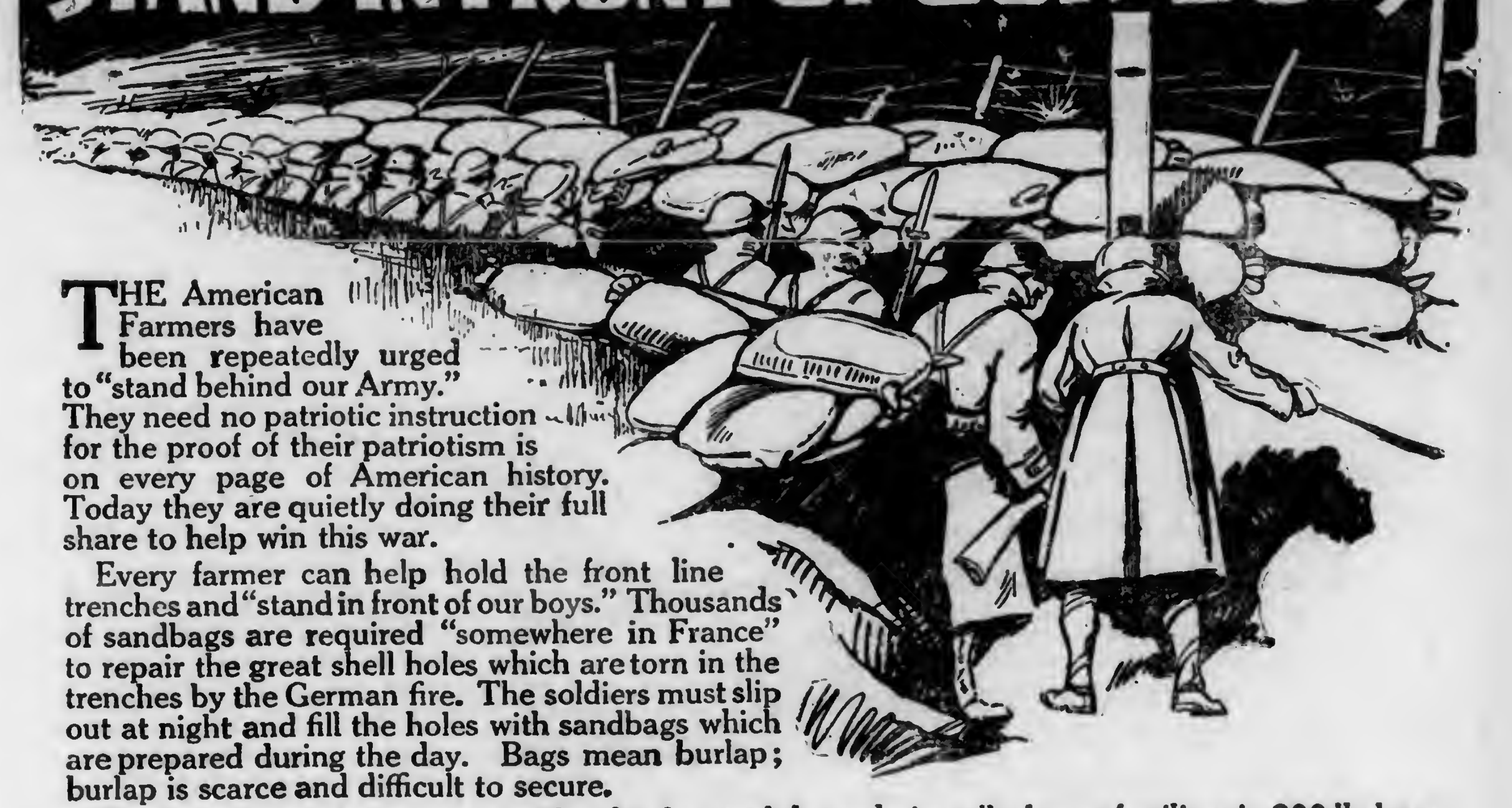

THE American Farmers have been repeatedly urged to "stand behind our Army." They need no patriotic instruction for the proof of their patriotism is on every page of American history. Today they are quietly doing their full share to help win this war.

Every farmer can help hold the front line trenches and "stand in front of our boys." Thousands of sandbags are required "somewhere in France" to repair the great shell holes which are torn in the trenches by the German fire. The soldiers must slip out at night and fill the holes with sandbags which are prepared during the day. Bags mean burlap; burlap is scarce and difficult to secure.

Do your share to help conserve the slender stock by ordering all of your fertilizer in 200-lb. bags. No real American would jeopardize the life of one of "our boys" for his own comfort. There is not enough burlap to go around and it is our privilege and our duty to sacrifice our convenience and use all 200-lb. bags this year.

There is little hope of further supplies for there is a shortage of ships and the Indian natives demand payment for all burlap in silver coin. Fifteen yards of burlap will carry a ton of fertilizer in 200-lb. bags. It takes from 1½ to 7 yards extra to carry the same ton of goods in small bags. Save the burlap by using all big bags.

All branches of industry and indeed all activities of life are affected by this war. The shortage of labor is causing hardship to both farmers and manufacturers. We are facing a national crisis more vast than any we have ever faced before. We shall all be called upon to sacrifice for this great cause; each must do his full share. Our burdens may seem greater than we can bear, but when we consider the supreme sacrifice which *"our boys"* are making, we who remain at home must feel humble. Each of us should be willing to do what he can to help win this war.

Every farmer should plan to secure *"a greater yield from every field."* *Now* is the time to order your supply of fertilizer for *immediate shipment* in 200-lb bags. Perhaps our crop books will help you. We will mail a copy free if you will tell us the crops which you expect to raise next year. Ask for the name of our nearest agent. We want new agents in unoccupied territory.

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THE COE-MORTIMER COMPANY
Subsidiary of The American Agricultural Chemical Company
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Niagara Dusters.

Capacity 40 Acres a Day In 45-Year-Old Apple Orchard

Niagara Dusters Save Labor, Time and Material and Insure Better Fruit.

They combine efficiency with simplicity, durability and lightness of weight—operated by any three-horsepower engine. They apply the dust so rapidly that frequent applications can be made over large acreage at critical times.

DUST APPLES, PEACHES, CHERRIES, PLUMS, ETC.

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For APPLES—A Niagara mixture has been developed which will control fungus disease (apple scab), chewing insects (leaf roller and codling moth), sucking insects (aphis and red bug).

For PEACHES—Niagara Peach Mixture has been developed to control Brown Rot, Peach Scab and Curculio without damage to the foliage, and late applications have been found to produce marked improvement in color as well as keeping qualities.

This is Important to You This Year

Every user of Niagara Dusting Machine is assured a supply of Niagara Dust Mixture. We have purchased enough raw material in advance to supply you.

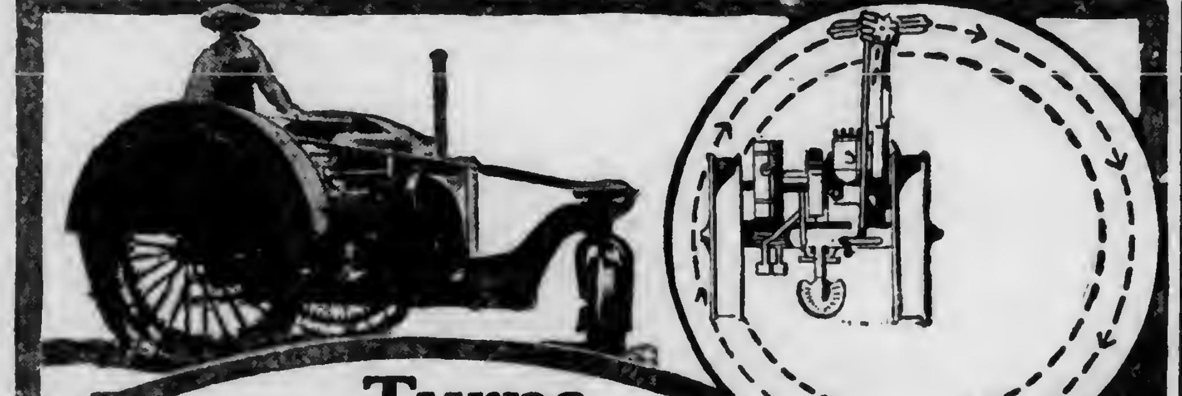
Write For Free Book on Dusting

which describes our various hand and power models. Tell us the size of your orchard, and the kind of fruit. Let us show you how to make your orchard pay better.

NIAGARA SPRAYER COMPANY
131 MAIN STREET, MIDDLEPORT, N. Y.

Model D-1

Shown complete in every detail (no extras—Niagara Dusters are shipped ready to run). This is the largest size duster, and requires a 3-horse power gas engine shown here mounted on special wagon adapted for Apple Orchard Work. Also shipped on skids with or without engine (NewWay Air-cooled).



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La Crosse Happy Farmer Tractor
The Perfect Kerosene Burner

you get a tractor that you can adapt to handle practically every form of power work on your farm. Simple in design—upkeep cut to a minimum.

Patented short intake with hot exhaust passing through it perfectly vaporizes the fuel charge. Heavy duty, twin cylinder motor—cylinders completely water jacketed. Result—cool engine—cylinders always round—full power all of the time.

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Learn how Happy Farmer owners are raising bigger crops with less help and at less expense. Write today.

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Model "B" 12-24 H. P. $975.00
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We have a distributor or dealer near you for prompt service. Also ask about La Crosse Tractor-drawn implements.

GARDEN SEEDS

Let us send you our catalog of seeds—it's different. It tells you facts, and why we can save you money, and give you a guaranteed SQUARE DEAL. Just drop a postal today and see the difference in buying your seeds in country. FORREST SEED CO., Box 39, Cortland, N. Y.

lead to the conclusion that there is no better form from which to draw this nitrogen than nitrate of soda. Furthermore, it is the cheapest form.

When liberal applications of nitrates are applied there should be present in the soil an ample amount of soluble and available phosphoric acid for the needs of the plant. This may be had by applying acid phosphate broadcast when preparing the land for planting. Without this form of plant food there is likely to be vine growth at the expense of the fruit. The last side dressing on the crop should be made at the time of the last cultivation and hoeing. That will be ample to keep the plants healthy and vigorous until fruit is matured.

Planting of this crop should be left until the soil becomes warm and the weather settled. When cantaloupe seed are planted early while the soil is yet cold and cold storms likely to occur, the seed is very likely to rot, or the young plants may be destroyed even after they have appeared above ground. This plant must be kept healthy and busy from the time it first shows above ground till the crop is made.

There are two troublesome insects that are a "bone of contention" to the melon grower: The cut worm and the striped beetle, commonly called the cucumber beetle. The cut worm can be killed with poisoned wheat bran, using 1½ pounds paris green to 50 pounds wheat bran. Place a small portion of this poisoned bait beside each hill before plants are thru the ground. Mix thoroly, and use dry.

The cucumber beetle is hard to kill with any poison, because he does his work on the under side of the leaf. However, he can be controlled by using something with a noxious odor. Lime or plaster with a little crude carbolic acid mixed thru it will do the trick. Moth balls broken up and scattered among the young plants will also drive them away. Where this insect attacks a melon field, get busy at once or the pests will kill the young plants in short order.

Pre-Cooling for Shipment

Advantage of Quick Cooling After Gathering

By HERBERT R. COX

At Riverton, New Jersey, there is a firm of fruit growers known as J. L. Lippincott and Company, Incorporated. It consists of Mr. Lippincott and Mr. C. B. Lewis, who is secretary and manager. But fruit growing is not the full extent of this firm's activities. It owns a controlling interest in a commission house in New York City; and also owns a controlling interest in a cold storage and ice plant at Riverton. It is the cold storage plant that is of present interest, as this firm has gone extensively into pre-cooling, the first case perhaps of the use of this valuable adjunct to marketing produce that has been put into commercial practice in the Eastern States.

The Lippincott Company sells not only its own fruits and vegetables, but handles on a commission basis the produce of a half-dozen other growers living in the Riverton and Moorestown district. The goods are pre-cooled and put into iced cars at the cold storage plant and are sold thru the commission house end of the Lippincott combination.

I went up to Riverton in the forepart of September, when the peach season was at its height, and found Mr. Lewis, who explained the whole situation. This firm began pre-cooling in an experimental way three years ago; peas was the first crop that was tried out. Results were promising and the firm extended the practice so that this year nearly all the summer produce has been pre-cooled and shipped in iced cars, except the stuff that has gone to the nearby Philadelphia and New York markets. The list includes peaches, early apples, peas, beans, sugar corn, tomatoes and pears.

"Here is the way it works," says Mr. Lewis. "The growers bring their stuff to the cold-storage plant and we immediately put it in the pre-cooling room where it stays from 12 to 24 hours. We charge the growers a fee of five cents a package for pre-cooling. The produce then goes into the iced car and rolls off to market. The commission end of our firm is in close touch with the markets, directs the cars to the most favorable points, and looks after the sales. The grower generally leaves it entirely in our hands to find a market for his stuff. The goods are usually sold f.o.b. Riverton, so that the purchaser pays the icing cost and the freight."

You may see that in effect, altho not in form, these growers practically have a co-operative selling association. The various individual growers may have access to the books of the Lippincott Company at all times, so that each man may easily find out when and where his goods were shipped, who bought them, when they arrived at destination, and what price they brought. Quite a neighborly little affair this, and something unique in a marketing way. Among growers shipping thru this channel are Barton Brothers, Horace Roberts, Emmor Roberts, Preston Roberts, Byron Roberts, A. L. Richie, Edward Mechling and P. H. Burke.

Before going further it might be well to describe just what pre-cooling is. It may be termed the prompt, quick cooling of produce immediately before shipment. It was noted years ago that fruit as it comes from the trees during the warm weather possesses a great deal of heat and even if it was rushed immediately into the iced car a certain amount of spoilage would result in transit. Mr. G. Harold Powell, and other workers in the United States Department of Agriculture, finally hit upon a cheap and effective way of preventing this. They found out that if the produce was chilled right after packing and before shipping that it came thru in much better shape and with a reduction in the amount of ice needed in the car.

The use of this principle in the shipment of certain kinds of produce has been an immense boon, especially to the citrus industry of California. The pre-cooling of Florida citrus fruit has not attained the importance on a commercial scale as that from California. It has been found, however, owing to the short haul thru warm territory citrus fruit from Florida that has been pre-cooled may be shipped successfully without any

icing whatever; the saving of the icing charge by the use of pre-cooling is a great advantage to Florida growers. The leading berry-producing sections in California and Washington have used pre-cooling for several years, with the result that they have been able not only to ship berries, such as red raspberries and Loganberries, in better condition, but to widen greatly their marketing territory.

Pre-cooling is usually accomplished by mechanical means, either in warehouse plants before the produce is put into cars or in car pre-cooling plants after loading. By the latter method pre-cooling is accomplished by forcing large volumes of cold air thru the load in the car.

The choice between these two systems depends on local conditions. Warehouse pre-cooling has the advantage of chilling the produce immediately after packing without any delay; the cooling is usually more uniform and the plants are frequently used as warehouses to hold fruits and vegetables in good condition for long periods when, on account of unfavorable markets, it is desirable to do so. Car pre-cooling is done in a plant built for the purpose. The principal objections to the latter plan are the delay between loading and pre-cooling, and the more or less unequal cooling of the different packages in the car.

Apples By Parcel Post

Pre-cooling at Riverton is done by the warehouse plan. The stuff is held at a temperature as near 32 degrees as possible. On the day I visited the plant the thermometer registered 36 degrees, but there had just been considerable activity in the room with frequent opening of the outside doors. The storage rooms in this plant, which can hold nearly 80,000 bushels of stuff, work at full capacity the year round. After the pre-cooling season the rooms are used for the cold storage of various fruits and vegetables during the fall and winter. After this stuff goes on the market the rooms are used for the storage of ice, some of which goes into the refrigerator cars and the rest sold in other channels.

"Are you sure that pre-cooling pays you?" I asked Mr. Lewis.

"I am positive of it," he replied, "altho it probably is not of much benefit with produce that goes only a short distance and without any delays, but you can never tell how long a car may be delayed in transit; and for long-distance shipments it is of great advantage. A carload of pre-cooled peaches, for instance, goes to Minneapolis and holds up in good condition for several days after it reaches the buyer. On the other hand, a carload that has not been pre-cooled begins to go down as soon as it gets out of the car. The buyers appreciate the difference and their appreciation is reflected in the price our stuff brings. Nearly all summer produce which is shipped by rail goes out pre-cooled and in iced cars, and we are going to continue the practice."

There are many fruit and truck growing sections that could well afford to look into pre-cooling. It is of course useless to go to the trouble and expense of it with second-grade produce—that would be like putting cull apples in a fancy-box package. But when first-class fruits and vegetables are shipped long distances during warm weather the principle of pre-cooling can often be applied to a decided advantage.

APPLES BY PARCEL POST

A new departure in selling apples is a parcel post trade in fancy fruit, a method of reaching the consumer which has been pronounced successful by several growers who have tried it. The box used is a one-piece corrugated container, 8x12x6 inches, which will hold thirty No. 1 Jonathans, or apples of the same size. The fruit is packed on the side, straight pack, with a cardboard division between the two layers. Each apple is wrapped. The box of fruit is sent anywhere in the first zone for $1, postpaid. The style of box illustrated costs about ten cents in lots of 100, and postage is in the neighborhood of 15 cents more, so approximately 75 cents is left to pay for the 30 apples and the cost of the wraps and labor in wrapping them—quite a fair return. Of course, only strictly fancy fruit must be sent.

A box displayed in a store window in town will usually secure plenty of customers, but advertising will reach a larger field. An important feature of this box trade is the fact that it may often lead to larger orders and the securing of regular customers. Always include some literature describing the apples you grow, together with prices by the bushel, box and barrel, in the box of 30. The average householder is anxious to secure good fruit, but is often at a loss to know where to get it. Direct dealing with the grower is profitable to both parties.—R. L. Scharring-Hausen.

A VARIETY TEST OF CABBAGE

A knowledge of varieties is of fundamental importance to the vegetable gardener. Since there is a marked difference in the large number of varieties on the market, with respect to type, yield, time of maturity, and quality, these facts should be taken into consideration if maximum results are to be obtained.

For a number of years the Department of Horticulture of the Pennsylvania State College and Experiment Station has been making a rather comprehensive variety test of cabbage. The aim of the test has been to include long established varieties and also those of more recent introduction. In so far as possible the history of each variety has been determined and a description of the variety is given, as well as a tabulation with respect to time of maturity and yield.

The results of the work for the first seven years of the test have recently been published as a reprint and may be had by addressing the Director of the Experiment Station, State College, Penna. The publication comprises a report of fifty-two early and thirty-one late varieties, many of which are illustrated by photographs.

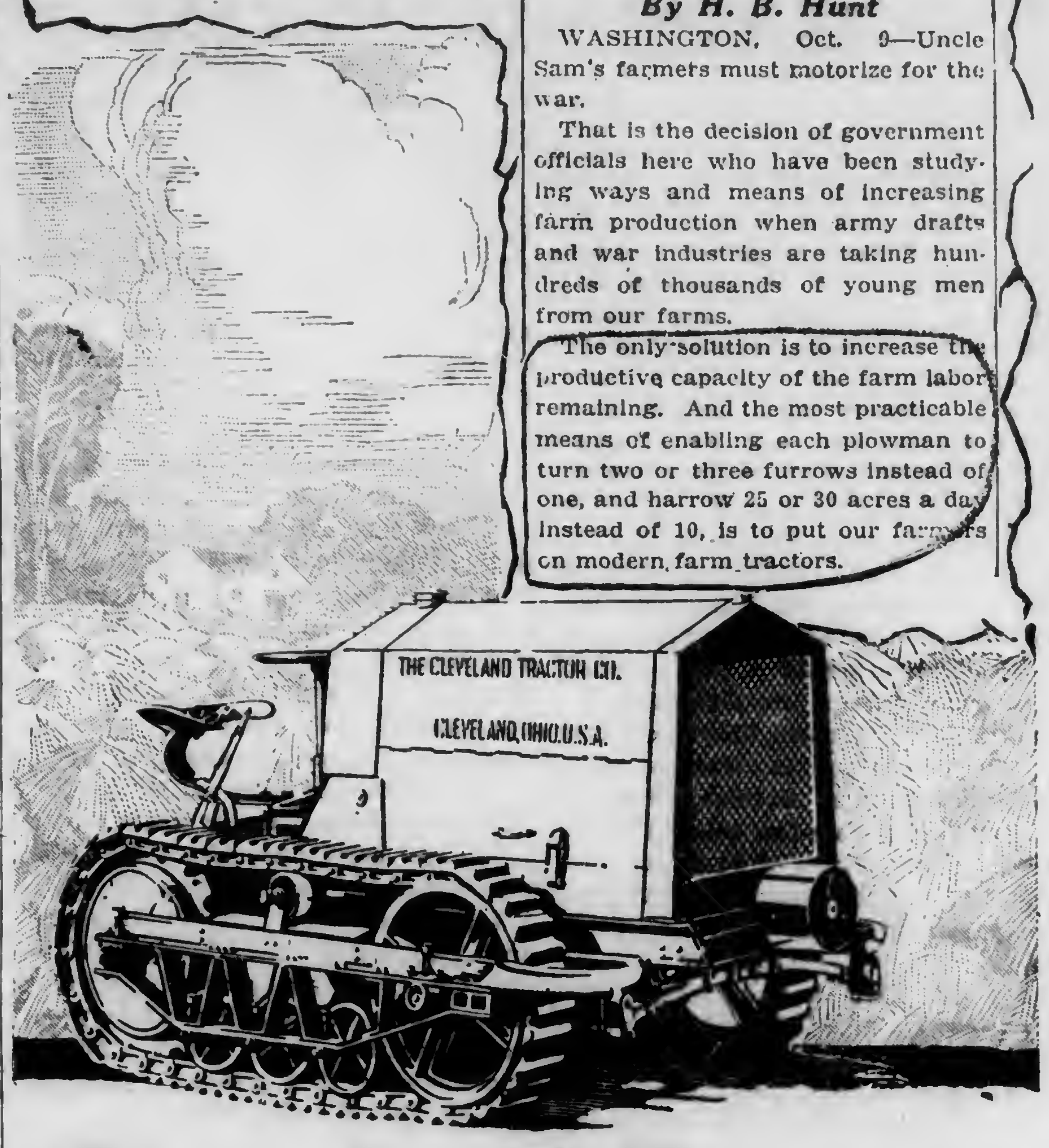
BUY TRACTORS TO HELP FARMS, U. S. PLEA NOW

By H. B. Hunt

WASHINGTON, Oct. 9—Uncle Sam's farmers must motorize for the war.

That is the decision of government officials here who have been studying ways and means of increasing farm production when army drafts and war industries are taking hundreds of thousands of young men from our farms.

The only solution is to increase the productive capacity of the farm labor remaining. And the most practicable means of enabling each plowman to turn two or three furrows instead of one, and harrow 25 or 30 acres a day instead of 10, is to put our farmers on modern farm tractors.


THE CLEVELAND TRACTOR CO.
CLEVELAND, OHIO U.S.A.

Cleveland Tractor

YOU must motorize your farm. Stern necessity demands it. Patriotism urges it. In that way alone can you counteract the shortage of labor and produce the bigger, better crops America expects of you.

Patriotic, progressive farmers are helping both their country and themselves by the use of the Cleveland Tractor.

This remarkable little machine hauls two 14 inch bottoms and with them it plows up to 3½ miles an hour—*8 to 10 acres a day*. That is more than you possibly can do with three good 3-horse teams and their drivers.

It not only plows faster—but better and with far greater economy.

Because it *crawls on its own tracks*, the Cleveland can go practically anywhere—over ditches and gullies—even through the sand gumbo and rice swamps of the South. It enables you to plow exactly where you want and when you want.

The Cleveland will not pack even a mellow seed bed—because it is light—only 2750 pounds—and has 600 square inches of continuous traction surface—a bearing pressure of less than five pounds per square inch. Though small enough for use among young fruit trees, it possesses tremendous power. It gives 12 horsepower at the drawbar, plenty for plowing, harrowing, pulling the manure spreader, seeder or any hauling job. At the pulley belt it develops 20 horsepower for pumping, sawing, cutting ensilage, filling silos and other stationary work.

The Cleveland Tractor is designed and built by Rollin H. White, the famous motor truck engineer Mr. White uses scrupulous care in his choice of materials. The gears are identical with those of the finest trucks and are enclosed in dirt-proof, dust-proof casings.

In short, the Cleveland Tractor means to you—an increased yield—*better, faster work—at much less cost*. What could be more important today?

Write us now for a complete description of the Cleveland Tractor and the name of our nearest dealer. We advise ordering now for use in the spring.

Address Dept. AA or use the coupon.

THE CLEVELAND TRACTOR COMPANY, Cleveland, Ohio

THE CLEVELAND TRACTOR CO., Dept. AA, Cleveland, Ohio
Please send me full information about the Cleveland Tractor

Name__________ City__________
County__________ State__________

Don't Think Only of Scale when you think of "SCALECIDE" it is all there is to Dormant Spraying

Does *all* that any other spray will do—but no other spray will do *all* that "SCALECIDE" will do. Kills all kinds of scale—all forms of fungus and insects that can be reached in dorment season—and invigorates your trees—and costs no more. *Read our money-back proposition* before ordering anything else.

Send for free booklet, "Profits in Fall Spraying"

B. G. Pratt Co., *M'f'g Chemists*
50 Church St. Dept. A New York

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Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE *Combined Hill and Drill Seeder* solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 30 combinations, $4.50 to $30.00. Write for booklet.

306 Drill and Wheel Hoe

Bateman M'f'g Co., Box 76C, Grenloch, N. J.

Marshalls Eureka Fertilizers
PAY BEST BY EVERY TEST—WRITE EUREKA CHEMICAL CO. BALTO., MD.

Farm Products Prices and Prospects

MARKET REVIEW OF FRUITS AND VEGETABLES

Potatoes Show Firm But Unven Tone

Shipments and selling movements have continued rather light in the producing sections from a combination of influences as severe weather, car shortage, and the waiting attitude of both holders and buyers, but total was about one-fourth larger than last week's very light movement. Reports from various shipping points west and east suggest probable resumption of heavy movement in the latter part of the winter and early spring. Prices, altho averaging about steady, show an uneven trend. Eastern and Northern markets have been fairly firm while various Western points appear slightly weaker, a natural relative condition in view of the more liberal offering of stock reported in Western shipping and market sections. Presque Isle, Me., reports a few sales of Green Mountains at range of $1.82 to $1.89 per 100 pounds bulk from wagons, compared with top figure of $1.82 last week. Rochester, N. Y., reports No. 1s, Round whites unchanged at $2.15 to $2.25 sacked f o.b. A wide but higher range $1.85 to $2.08 f.o.b. sacked for No. 1s, Round whites prevailed at Grand Rapids, Mich. Car shortage is reported a serious check on movement of stock. Sales by farmers at other Michigan shipping points range $1.30 to $1.50 sacked. Wisconsin round whites held at $1.25 sacked track side at Waupaca, and $1 at various country loading points, with some increase in both supply and demand. In the large cities the jobbing price ranges were uneven but with only moderate changes either way. Eastern markets appeared stronger than central and Western; thus Michigan Round whites were up 10 cents in New York, jobbing at $2.37 to $2.50 per 100 pounds in bulk, and up five cents in Boston at $2.40 to $2.45, with a similar movement in Maine Green Mountains, but Wisconsin Round whites in Chicago were unchanged at $1.90 in bulk and weakened five cents in Washington, Detroit, etc..

Apples In Fair Demand

Northwestern extra fancy Romes sold at previous range $1.25 to $1.50 per box, f.o.b. Colorado. Shipping sections reported little or no selling movement. Rochester, N. Y., quoted $5 per barrel. Asked for Greening A's from cold storage 50 cents lower; but ungraded Baldwins and others ranged firm at $3.75 to $4.50 with brisk demand. Northwestern Romes quoted unchanged at $1.25 to $1.50 f.o.b. with few sales. Movement and shipping continued light in all the producing regions, with total shipments of only 504 cars, decreasing from 920 cars last week and 1,466 the week preceding. In the large market centers, the jobbing demand varied from slow to good but the price range was firm. New York Baldwin A's 2½ ranged $4.75 to $5.50 per barrel, while Maine and Massachusetts A's sold mostly at $4 to $4.50. New York Greenings A's ranged $5 to $6.50. Maine and Michigan Spys A's and 1sts sold $5.25 to $6. Winesaps Virginia and Southern 1sts ranged $4 to $6.50. Fancy barrel stock of choice varieties reached $6 to $7.50 in Minneapolis, Missouri, Ben Davis 1sts were weaker at $3.50 to $4.25, but New York Bens, large size A's ruled strong at $3.25 to $4.75. Northwestern box apples met fair demand at steady range of $1.75 to $2.25 for extra fancy Jonathans and $2 to $2.65 for extra fancy Spitzenburgs.

Cabbage Market Holds Strong

Quotations held at recent top of $40 per ton for Danish Seed and Holland Seed in bulk f.o.b. Rochester, N. Y. Producers received mostly $35 at farm. In the racine district of Wisconsin, $35 to $40 f.o.b. covers the week's range with the bulk of sales around $37. However, the demand at f.o.b. points appeared light to moderate at these price levels. Shipments were mostly from New York 163 cars, and Wisconsin 105 cars, total 282 cars, compared with 176 cars last week and 309 cars the preceding week. Large distributing markets have been gradually catching up with rapid advances in producing sections and quote jobbing prices higher at a general range of $40 to $43 for Wisconsin Holland Seed and $45 to $53 for N. Y. Danish Seed, while choice barrel cabbage range generally $2.50 to $3 and good Domestic $2 to $2.75 per barrel.

Onions Show Firm Price Trend

The onion situation shows little change. Demand continues slow but the price trend seems a little more firm. Ohio and Indiana yellow stock sold at $2 to $3.25 per 100-lbs. sacked and New York yellow Globe $2.25 to $3. California and Australian Browns sold $2 to 3. In the producing sections holders show little disposition to part with their stock, asking $2.75 to $3 per 100-lbs. sacked f.o.b. A few sales were reported from Rochester, N. Y., at $2.65 to $2.75. General carlot movement continues light, 101 cars compared with 85 cars last week. About one-fourth of the total came from New York, with California and Indiana following, while other states shipped but a few cars each.

Beans More Steady

Demand is rated slow in all the bean shipping sections. Pea beans are still quoted $12 per 100-lbs. hand picked basis, cash to growers at farm, and in the Rochester, N. Y., district with limited movement. In the Michigan bean country the price to farmers is quoted around $11 and is reported at $12.60 to $12.70 per 100-lbs. sacked f.o.b. Michigan points. Colorado Pintos show a slightly stronger tone in the shipping sections and have held a range of $6 to $6.50 paid growers per 100-lbs. in bulk, recleaned basis, while choice recleaned stock sold $7 to $7.38 sacked f.o.b. Denver with improving demand. Jobbing prices of Michigan pea beans ranged $13.75 to $15 per 100-lbs. sacked in large market centers, and choice New York pea beans $14.75 to $15. California small white sold $13.25 to $15, and range of California limas improved 25 cents to $13.75 and $15.25. Colorado Pintos held jobbing range of $7.50 to $11 per 100-lbs. sacked, with strengthening tendencies in some markets.

Good Demand for Celery

Activity the past week has been chiefly in the distributing markets on account of preparation for holiday trade. Demand has been generally moderate to strong at a firm range of jobbing prices. New York choice large stock sold at a range of $3.75 to $4.50 per crate in the rough in most leading markets, but Philadelphia and a few other markets have remained depressed at $3.25 to $3.50. New York 1sts ranged 40 to 50 cents per dozen at Buffalo. Best Michigans in New York style crates were quoted at around $4 in the rough and squares sold higher in Chicago at $1 to $1.25, washed.

Southern Vegetables In Fair Demand

Recent estimates show frost damage in producing sections moderate in comparison with early reports. Florida string beans followed last week's prevailing jobbing range $5 to $6.50 in bushel hampers, with moderate to good demand. Florida peppers were in fair request, but generally weaker, selling $4 to 6 per crate for best stock. Eggplant continued in steady demand at wide range prices $3 to $5 per crate. Sweet potatoes maintained the high price level of the preceding week. Porto Ricans sell mostly at $2.30 to $2.50 per 100-lbs. sacked.

CORN IN ALCOHOL

Secretary McAdoo has instructed that no corn grading No. 6 or better shall be used in the manufacture of distilled spirits for industrial purposes, meaning that the present ban on distillation for alcoholic beverages restricts somewhat the proposed use of this year's wet corn for munitions also. This ruling is in effect on and after Jan. 1.

REGULATIONS FOR PRODUCE EXCHANGES

Confining the butter and egg business to only such persons and agencies as are actually rendering service to the people is the purpose of the new rules of the U. S. Food Administration governing transactions of butter and egg exchanges.

These new rules virtually eliminate from business all speculators and others who are not of actual service in handling goods from producer to consumer in the most direct and systematic way. It is believed that the producer will not only have greater confidence in the marketing agencies operating under such regulations, but that he will receive a larger proportion of the price which the consumer pays.

Under the regulations just announced, all future or speculative trading is eliminated and purchases on the "call" are confined to actual distribution. The "call" is a trade term meaning the sale of goods under the prevailing auction plan.

WHEAT SUPPLIES

The department of agriculture has made its final report on the wheat crop of the United States for 1917, and the general situation may be reasonably summed up about as follows:

Aggregate Supplies

Winter wheat yield, bu.	418,000,000
Spring wheat yield, bu.	233,000,000
On farm, July 1, 1917 . .	15,000,000
In second hands, July 1, 1917	33,000,000
Total, bu.	699,000,000

Distribution

Consumpt. for 1 yr., bu.	440,000,000
Seeding 62,000,000 acres	90,000,000
Carry over July 1, 1918, bu.	30,000,000
Total, bu.	560,000,000
Remaining for expt. .	139,000,000

In the quantity stated for consumption a reasonable amount is allowed for "wheatless" days. The consumption per capita in 1916 was a little more than four and one-half bushels, or about one-half bushel less than average, indicating economy on account of high prices. The consumption per capita for five years ending July 1, 1914, was about five bushels per capita. The exports of flour and wheat for the five years ending July 1, 1914, averaged 105,000,000 bushels, so that under present conditions we can readily export 139,000,000 bushels, or 34,000,000 bushels above the pre-war average of five years, of which 36,800,000 bushels have been officially reported up to November 1.—Daily Trade Bulletin.

WHY GRADE POTATOES?

Because it is progressive. For years the growers of fruit in California and the Pacific Northwest have competed successfully with growers 1,000 or 2,000 miles nearer the markets they entered. The western growers grade their products so every box is uniform and pack in such manner that every fruit is perfect when it reaches the consumer. Following their lead New York applegrowers and others now grade and pack carefully. Apples from such states are standard in markets, demanded and well paid for by those who know good fruit and wish always to be sure that they get it.

Southern potato growers' associations have graded potatoes for years and marked their best grades. In the poor market year of 1915, practically every car of 10,000 sent out by one southern association was sold direct. The buyers knew just what they would get from this association and took its stock at a fair price, while ungraded potatoes went begging. Other shippers' associations and many large growers have recognized the trend of events, and would have graded all their potatoes, even had the Food Administration not required it. Be up-to-date, then, and grade your potatoes.

Grange

GOVERNMENT FOOD PRODUCTS INSPECTION IN THE MARKETS

Under an act of Congress, approved August 10, 1917, "For enabling the Secretary of Agriculture to investigate and certify to shippers the condition as to soundness of fruits, vegetables, and other food products, when received at such important central markets as the Secretary of Agriculture may from time to time designate . . . ," the Department of Agriculture, thru the Bureau of Markets has made partial arrangements for carrying the law into effect. In this territory, supervising inspectors have been appointed for the work in New York, Jersey City, Philadelphia, Pittsburgh and Baltimore. Those interested should send for full information as contained in Office of the Secretary, Circular No. 82, U. S. Department of Agriculture, Bureau of Markets, Washington, D. C.

The purpose of the service is to inspect. upon request of shipper, shipments made to the city over which there is a controversy as to the condition of the produce. Shippers are requested, when making application for inspection, to give as closely as possible the percent of decay; state of maturity, condition as to blemishes; amount of frost injury, character of pack, etc.

Forms for making telegraphic request for inspection are provided in the bulletin. No charge is made by the Bureau for the service rendered.

RICHLAND CORN SHOW

A very good corn show was held in Richland, Pa., Grange Hall on Monday evening, November 26. It was the first one the grange has ever held and the committee was well pleased, as there were quite a number of good entries showing that there are some in the community who are interested in raising good corn. Those present listened to a good literary program while the corn was being judged and then Mr. N. E. Garber. the county agent, gave a talk, telling why each selection had been made, and the good and bad points in each entry. He also stated that the "White Cap Yellow Dent" seemed to be the kind of corn that the farmers should raise thru this section. Prizes were offered by the Quakertown Banks and the Richland Grange and were awarded to Wm. C. Sames, first on Flint corn, and Samuel Hillpot, second; Yellow Dent —First, Irwin Baum; second, C. G. Taylor; third, Frank Ruth. White Dent.—First prize, Wm. S. Sames. White Cap, Yellow Dent.—First, Elmer Haring; second, James Clark; third, Wm. C. Sames. Red Variety. —First, Robert Landis.

Among the Granges

Chautauqua Co., N. Y.—The annual Pomona meeting was held Dec. 14 and 15, with Union Grange in Mt. Tabor Temple, Johnstown, N. Y. Worthy Master Aikin, of Union Grange, presided and also gave the address of welcome to which Worthy Overseer of Pomona, Fred Lowell, of Fredonia, responded.

The outstanding feature of the evening session was the address given by State Worthy Master Lowell on "The Relation of the Grange to the War." The orchestra led by Hawley B. Rogers, farm bureau manager, favored the gathering with some most excellent music, and the day closed with an address by John S. Rutledge, of Washington, who represented Mr. Hoover of the food administration.

One of the most interesting events of the Friday morning session was a paper by J. W. Doty, of Sheridan Grange, "Grange Influence Upon County Affairs". Bro. Richard Hall, of Fredonia. opposed the town unit school law, and the farm bureau draft recommendations. A paper was presented by Bro. Earle Gage, of Ashville Grange, "The Farmer and the World War," and Rev. D. M. RatCliffe, of Busti, gave a paper. "Not Success But Service."

Several resolutions were passed, chief among them a protest against the lengthening of rural routes and the poor service caused thereby, copies to be forwarded to the legislators at Washington and to the Postmaster General.

Erie Co., Pa.—Pomona Grange No. 4, met in joint session with Edinboro Grange No. 947, December 5th and 6th, 1917. Interesting programs were carried out and among the speakers present was Rev. H. G. Teagarden, of Punxsutawney, Pa. He spoke at the public session held in Normal Hall on the afternoon of December 5th. Co-operation was the theme of his discourse. He gave the farmers some good pointers in regard to what more co-operation among them would mean to them. Milton Shreve, of Erie City, was also present. His talk was for the benefit of the registered farmer boys, who were soon to receive the questionaires. He thought that if careful attention was given in filling them out some of the boys might be kept on the farms. He cited a few cases where boys have been taken whose help was and is sorely needed. Feeding the army depends on the farmers and he must have sufficient help.

S. S. Lehman, of the Erie County Farm Bureau, gave a short talk. His remarks are always listened to with interest. More crops on fewer acres he urged the farmers to think about for next season.

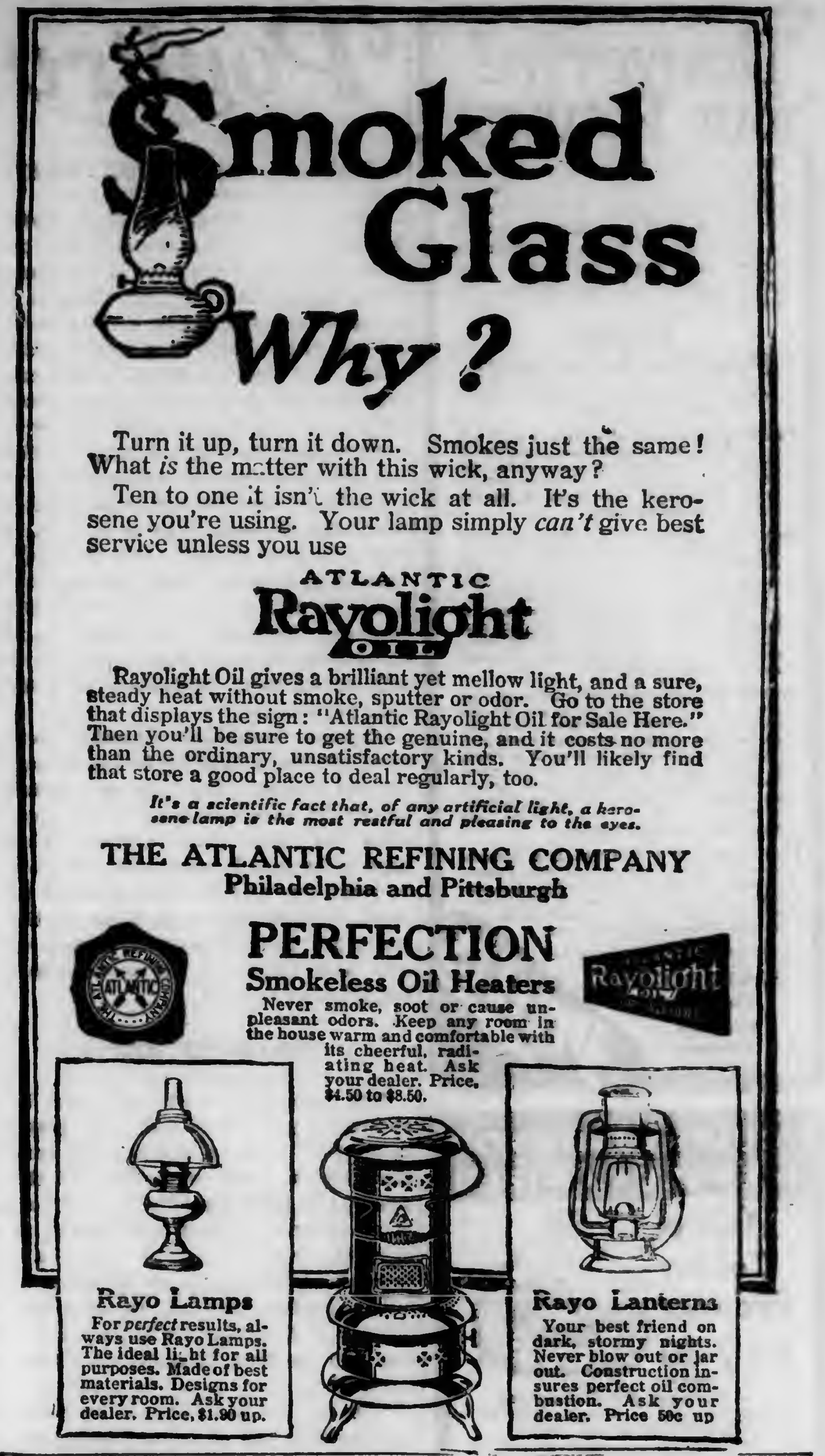
At the evening session, the officers for the next term of two years were elected.

"Profitable Poultry and Winter Egg Production" was one of the questions discussed at length at one of the sessons on the last day. The farmer has come to realize that poultry raising if given the proper care can be made to pay.

Another question on the program read, "We've taught in our public schools the evils of alcohol and narcotics, and now the American Flag is held out and we are solicited to pile into it tobacco and cigarettes for our soldier boys. Why is it?" And why is it that newspapers solicit money for this one thing—smokes for the Sammies?

There are 21 subordinate granges in Erie County. A goodly number sent delegates to this session. Edinboro Grange has a membership of over 200. The membership for the county numbers 2,300.—J. E. N.

There was never a poorer time to keep the average cow. Milk production must be maintained, but no one will care to maintain it as a losing proposition. The cow that pays is the cow to keep.



Smoked Glass
Why?

Turn it up, turn it down. Smokes just the same! What *is* the matter with this wick, anyway?

Ten to one it isn't the wick at all. It's the kerosene you're using. Your lamp simply *can't* give best service unless you use

ATLANTIC
Rayolight
OIL

Rayolight Oil gives a brilliant yet mellow light, and a sure, steady heat without smoke, sputter or odor. Go to the store that displays the sign: "Atlantic Rayolight Oil for Sale Here." Then you'll be sure to get the genuine, and it costs no more than the ordinary, unsatisfactory kinds. You'll likely find that store a good place to deal regularly, too.

It's a scientific fact that, of any artificial light, a kerosene lamp is the most restful and pleasing to the eyes.

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PERFECTION
Smokeless Oil Heaters
Never smoke, soot or cause unpleasant odors. Keep any room in the house warm and comfortable with its cheerful, radiating heat. Ask your dealer. Price, $4.50 to $8.50.

Rayo Lamps
For *perfect* results, always use Rayo Lamps. The ideal light for all purposes. Made of best materials. Designs for every room. Ask your dealer. Price, $1.90 up.

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Your best friend on dark, stormy nights. Never blow out or jar out. Construction insures perfect oil combustion. Ask your dealer. Price 50c up

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Cuts from both sides of limb and does not bruise the bark.
Made in all Styles and Sizes
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Our high grades of Grass seeds are the most carefully selected and recleaned. Highest quality in Purity and Germination. To grow Bumper crops good seed must be sown. We pay freight. Catalog and samples free if you mention this paper.
GLICKS SEED FARMS
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SCOTTS FIELD SEEDS
Our seeds are selected and cleaned to be WEEDLESS and free from dead grains. They will go much farther than ordinary field seeds, nearly always adding enough to the crop to pay for themselves. Samples and catalog including "How to Know Good Seeds" free.
Write today. O.M. SCOTT & SONS CO. 54 Main St., Marysville, O.

A PERFECT EDGE
We re-edge Razors, Safety Blades, Clippers, Etc.
Razors ground and honed, 25c.
Safety Blades, single edge, 2c; double edge, 3c.
Special attention to mail orders.
MODERN GRINDING CO.
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It is easy to make $300 to $500 per acre on our superior Michigan grown Plants, they grow sure and fast, are big producers. Write to-day for free catalog.
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A GOOD CHANCE
for a live farmer who wants to change to a dry climate at higher altitude. I will sell cheap a commercial orchard. Eight acres trees, two of open land. Good quality fruit, few varietie
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SAMPLE OUR SEED
Three earliest vegetables in cultivation for 10c. One packet each, Robinson's Earliest Tomato, Earliest Round Red Radish, Earliest Lettuce, 10c to new customers. Regular price 30c. CATALOG FREE.
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PURE FARM SEEDS
CLOVER, Timothy, Alsike, Alfalfa, Oats and all kinds of PURE FARM SEEDS direct from producer to consumer; free from noxious weed seeds. Ask for samples.
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WAGON COVERS Tarpaulin Horse Covers. All sizes. Full stock of Waterproof Duck.
Richards Mfg. Co., Fourth and Callowhill Sts., Philadelphia, Pa.

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Booking orders now for shipment in March or April. 300 by mail, postpaid, $1.25; 1,000 by express, not prepaid, $3.00. DAVID RODWAY, HARTLEY, DEL.

Strawberry Plants. Lowest prices. Catalog of 85 varieties including the Fall Bearers Free. L. G. TINGLE, Box 77, Pittsville, Md.

"Hooverize" Your Poultry

War rations for poultry must include the coarser, cheaper grains and by-products. It is economy to use them *if your birds are able to fully digest them* and convert them into eggs and meat. And *they can* if you regularly add to the ration

Pratts Poultry Regulator

America's Original Poultry Tonic and Conditioner

Pratts Poultry Regulator is not a food, but a scientifically compounded mixture of roots, herbs, spices, mineral substances, etc. Each ingredient performs a certain work in keeping the fowls in perfect health and highest vigor.

Its regular use cuts feed bills by preventing waste due to sluggish digestion, by enabling the fowls to thrive upon the coarser feeds. *And it makes hens lay.* It creates a keen appetite, improves digestion and circulation, regulates the bowels, makes the egg-producing organs "do their bit." We have backed these statements for 50 years with a broad money-back guarantee!

Pratts Poultry Regulator insures such vigorous health that the birds are practically immune from ordinary poultry diseases. For this reason alone it is worth its small cost—about 1c a month per bird. If ROUP—a germ disease—attacks your flock, Pratts Roup Remedy will quickly overcome this trouble. Use it in changeable weather as a preventive of roup and colds. It's guaranteed!

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—*"Your money back if YOU are not satisfied"*—the guarantee that has stood for nearly 50 years.

267 *Write for 48-page poultry book*

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POULTRY INDUSTRY REVOLUTIONIZED

Marvel Colony Brooder $17.50

Coal Burning, Self Regulating. Super-Automatic Check Control. Exclusive Patent Features.

The MARVEL is guaranteed to perform better and to raise more chicks than any other Brooder. Big saving in operating expense. Will brood 50 to 1000 chicks for less than 6 cents per day. Cuts initial cost for equipment to less than one half. Perfect satisfaction guaranteed or money back in 30 days. Send for Circular on "Scientific Brooding."

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304 Chestnut St., Phila., Pa.

This Brooder will save You Time, Work, Money

INCREASE YOUR POULTRY PROFITS

It takes but a few minutes a day to raise and save chicks with a

BLUE HEN COLONY BROODER

Plenty of heat for coldest weather. Fire can't burn up too high or down too low. BOOK FREE 100 to 1,000 chicks. Write at once for free book. Describes fully. Tells what owners say. Price saves you money. *Agents wanted.*

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2058 Ann St., Lancaster, Pa.
Dept. 2058, 1534 Masonic Temple, Chicago, Ill.

$8.95 Buys Champion 140-Egg Belle City Incubator

Prize Winning Model—Hot Water—Copper Tank—Double Walls of Fibre Board—Self Regulated—Thermometer Holder—Deep Nursery. When ordered with $5.25 Hot Water 140-chick Brooder—both cost only $12.95.

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Over 650,000 Satisfied Users
Start Early-Order Now-Share in my
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Poultry

REPAIRING INCUBATOR TRAYS

After a year or two of use the wire bottoms of most incubator trays become sagged and pretty well worn. It is very necessary that these sags be removed as the eggs will be lower in one part of the tray than in another, and thus receive a lower temperature than eggs lying on the cross pieces of the tray where the wire bottom is at its original height. The sag can sometimes be removed by restretching the wire, but in most cases new wire is needed, as it is usually worn thru in places. For this purpose copper wire cloth is best because it will not rust out from the frequent necessary washings and scrubbings as does iron wire, and it will excell most galvanized wire for this purpose.

Certain incubator manufacturers have adopted a tray with heavy perforated sheet iron bottom which makes an excellent sag-proof bottom with very few cross braces. This type of bottom is especially desirable in large trays of 100 egg capacity or over. Where the wood frame of the trays are badly bowed it is best to buy new trays.—J. Raymond Kessler, Chester Co., Pa.

SPACE PER HEN

The number of hens that can be successfully housed in a given amount of space depends to a very great extent upon conditions and the size of the individual flock. A liberal allowance of space is necessary to keep the fowls in health and to obtain the best results in production, but the allowance of an excessive amount of floor space will gain nothing and in cold climates is rather harmful.

The fact is well known by poultrymen that the closer a hen is confined the larger will be her egg production, provided other conditions are right. There is, however, a limit beyond which confinement cannot be carried without disastrous results to the health of the flock.

Where very large flocks of layers are kept, say 1,000 to 1,500 hens in a house—from three to three and a half square feet of floor space per hen will be found the smallest amount advisable.

A flock of this size can do with less floor space per individual than smaller flocks, because each hen has the entire house to travel over despite her rather small allotment of space, consequently having really more space to exercise in than her sister in a small flock with double the floor space per hen.

Flocks containing from 100 to 300 hens will require from four to five square feet of floor space per bird and flocks of 15 or 20 should have at least five square feet of floor space, and six to seven feet will be even better.

A single hen could never be housed, without the use of yards, in five or six square feet of building. Having a large house for a number together makes a small amount of floor space feasible, by reason of the fact that each bird has the entire house to use.

A single hen could not be successfully confined for any length of time to a smaller space than 18 square feet, but in this same space one could house three hens with equally good results.

The amount of space given is mainly suited to flocks kept for laying and closely confined, at least for the winter season to encourage heavy production. For the breeding pens it will be found better to have small flocks and give each hen from six to eight feet of space in connection with liberal sized yards.

However, climatic conditions must also be taken into consideration in deciding upon the size of flock to be kept. Where the winters are very cold it will hardly be found feasible under ordinary farm conditions to keep less than 20 fowls in a flock, since a smaller number would have difficulty in keeping warm. The popular sized flock of today is 20 hens in the breeding flock and 100 in the laying flocks. Such flocks give maximum results with a minimum of labor, and experience has convinced a majority of poultry raisers that such conditions are about ideal. —J. Raymond Kessler, Chester Co., Pa.

SHOULD WE PRODUCE MORE EGGS?

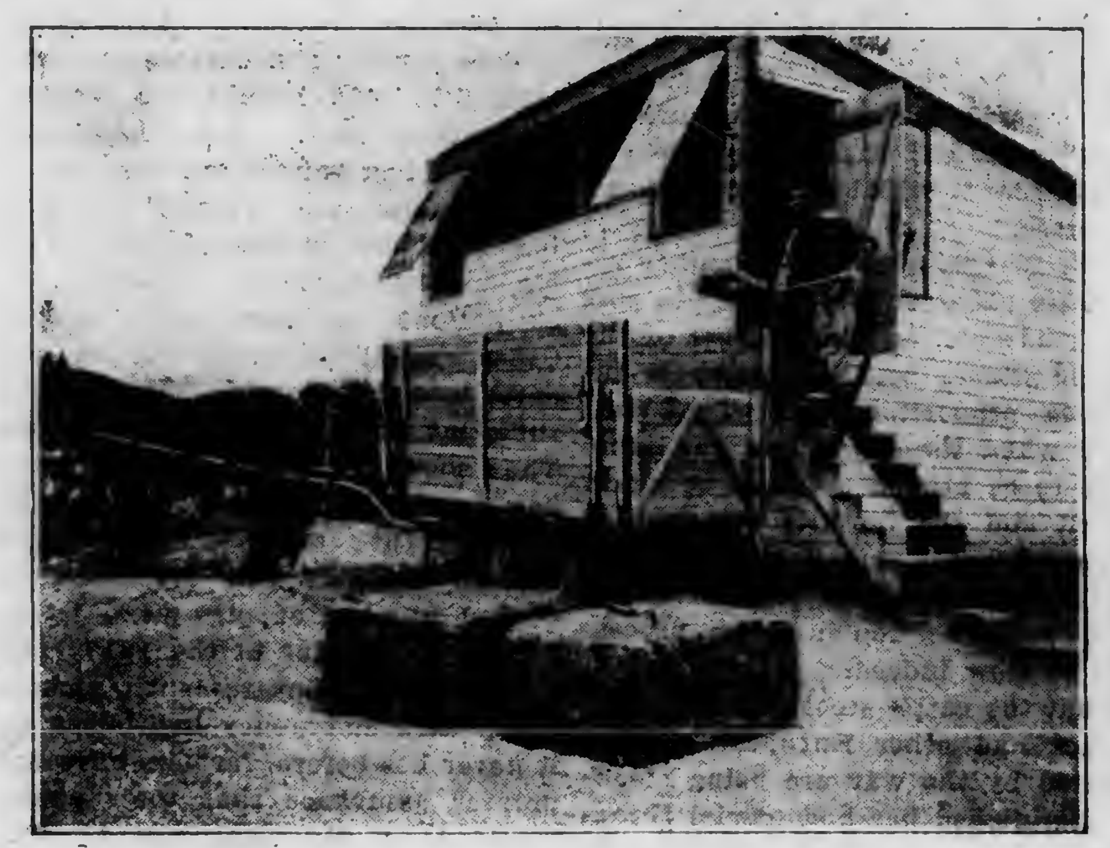
May I present a glimpse of the poultry-keeper's side of the egg question? I am sincerely sorry that conditions should be as they are, but unless some radical change occurs soon, any material increase in farm poultry flocks cannot prove otherwise than disastrous to the farmer. I am a widow with my little daughter and myself to care for alone, and I simply cannot risk money in what I know to be a losing deal. Just a few good hens, well cared for, may pay a small margin of profit, but more would not. I have culled my flock to 25 of the best and am giving them the best possible care. They are housed in dry and comfortable quarters, with windows facing the south and equipped with the correct proportion of muslin. They have shells, water, and dry mash always at hand, and twice a day they have a fresh supply of water nice and hot. Carrots, beets, cabbages, etc., are suspended on convenient nails practically all the time; and the hens are kept generously supplied with all the mixed grains they will scratch out of several inches of clean dry chaff and straw. Very few of my neighbors' flocks lay at all and mine lay very sparingly. Last January, while city women were boycotting 45-cent eggs, my account book showed that every egg I was getting cost me exactly 17 cents in cash outlay exclusive of all green feed, etc., produced at home and with no allowance for my own work. In other words, my city sisters were refusing me 45 cents for an article that cost me at least $3. This is a poultry section where everyone has hens and there are many commercial plants. Every producer, large and small, had experiences similar to my own last year, this year is no better, and all are cutting their flocks to a fraction of the usual number. As a matter of fact, only a well-to-do farmer could possibly continue the production of eggs, and just why should farming be made an entirely philanthropic scheme to produce delicasies for the city man, anyhow?—E. M. A.

SQUAB RAISING

The demand for squabs, especially in large cities, is gradually increasing, for they are being used to replace dressed game which is decreasing in this country. The supply of squabs, on the other hand, says Alfred R. Lee of the Department of Agriculture, appears to be increasing about as rapidly as the demand, judging from the average price.

Pigeons are kept in all parts of the United States, but most of the large squab-producing plants are found near the large cities in the Northeastern States and on the Pacific coast. Many pigeons are kept as a side issue on general farms in the Middle West and South, but the average value of the pigeons in these sections is only from 15 to 25 cents apiece, compared with 40 to 55 cents in New York and New Jersey. Prolific pigeons producing large squabs are kept confined in pens on most squab-producing plants, while common pigeons, which are less prolific and produce smaller squabs of a poorer quality, are kept on the general farms and are usually allowed their freedom.

An annual average profit of $1.50 per pair for breeders is considered good on successful plants producing only squabs for market. Success in a special calling requires experience, business ability, and a good market. Most of the large successful pigeon farms make a business of selling breeding stock and are not devoted primarily to the production of squabs for market. There have been many failures on squab plants, as the profit in this business has frequently been greatly overestimated and the care of the stock regarded as something very easy in which anyone could succeed.



Cleaning and Re-Littering Poultry House

Many people can keep pigeons successfully as a side issue, altho this requires constant oversight and careful attention to details. The greatest difficulties confronting the successful raiser of pigeons seems to be in securing good breeding stock and finding a good market for the produce of a small flock. Pigeons are a profitable source of income on general farms where they may secure much of their feed from the fields, provided they are not a nuisance and the loss by shooting and by hawks, owls, and cats is not large. They can also be raised successfully on farms where they are closely confined, provided the squabs can be marketed to good advantage.—B.

COAL-ASHES

Coal-ashes make good absorbent for use under the perches. When mixed with the droppings it preserves the fertilizing elements of the manure. Nitrogen, the most valuable ingredient of poultry manure escapes readily, and no better preservative could be used than screened coal-ashes. Wood-ashes should never be used under the perches. Wood-ashes contain a great deal of lime, which will liberate the ammonia in the manure, and reduce its value as a fertilizer.

If one has more coal-ashes than can be used under the perches, good use can be made of it by spreading it over the floor of the poultry-house and about the runs. When used inside the house, it penetrates cracks and crevices and helps to hold down the lice pest. It also keeps down noxious odors. Used in the poultry runs, the ashes facilitates drainage, keeps down mud and destroys germ life that may gain a foothold in the soil.

Hens like to scratch over an ash-pile and they will consume some of the cinders, which in a measure, at least, answers for grit. Cinders also supply the hen with needed mineral matter.

Finely-sifted coal-ashes makes an effective dusting material for the dust-box. Wood-ashes is not so good for this purpose because the lime it contains destroys the lustre and gloss of the hen's plumage.—T. Z. Richey.

THE SIZE OF INCUBATOR TO BUY

No doubt more of the small—50 or 60-egg size—incubators are sold than all sizes combined. The reason for this is that there are many who have had no experience in artificial incubation, and they seem to think that they can get their experience more cheaply by operating a small machine than one of the larger sizes.

These small machines will generally give good hatches, but the results, no matter how good, are never commensurate with the amount of labor necessary in operating them. A machine of 200-egg capacity can be operated with very little more oil, and the labor of attending the larger size machine is very little more.

The great advantage of using a large machine is that one can get out a large number of chicks early. One or two hatches will probably give the farmer or poultryman all the chicks he wants. This greatly simplifies poultry-raising. The pullets will reach laying maturity about the same time, and the cockerels can be marketed as broilers at a time when prices are attractive. Besides, the labor and worry of incubating and raising young chicks is soon out of the way.

On the other hand, if a small machine is used, it will probably have to be set four or five times in order to get the desired number of chicks. This not only calls for a lot of work and worry, but the results are never wholly satisfactory, since some of the chicks must necessarily be hatched late, and the late hatches are never as profitable as the earlier ones.

Where one has two or more large machines, however, a small machine will come in handy in keeping the large machines going at full capacity. This advantage can be obtained by setting the large and small machines at the same time. After a week of incubation, probably sufficient infertile eggs, or eggs containing dead germs, can be tested out of the large and small machines, to enable the large machine to take all the good eggs in the small machine. —T. Z. Richey.

Once every two days is often enough to clean and refill incubator lamps if a good grade of oil is used. In cleaning the burner do not rub the wick but turn it up and cut it straight across with a sharp pair of scissors, thus giving a clean end for lighting. Do not trim off the corners as they will cause the flame to burn into a point. Properly done this will give a very even round flame.—J. R. K.

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Live Stock

SAFEGUARDING THE BEEF SUPPLY

It becomes more and more evident that there is a well-founded concern in regard to maintenance of beef supply. Information is current that in the British Isles the government has decreed that it is more important that the acres available for crops serve the immediate needs of the country by producing grains for human food than for the maintenance of the herds. We are informed that three million acres are being put under the plow, sod that has in many cases never known the plow before. Pastures that have raised grass only for generations, and meadows of long standing will be converted into tilled fields that wheat, oats, barley, corn and other crops suited for human food may be produced. The argument is that the British Isles can better rely upon the United States and other cattle-producing countries where land is cheaper and range more abunant. It is argued that dressed beef can be advantageously imported; that under the circumstances it will be a real economy to do so.

The British Isles will promptly reduce its cattle supply, if we are correctly advised, and the market of the United States beef producers is increased proportionately. Time will come when these pastures and meadows to be broken up must be again seeded and the fertility restored by means of herds and flocks, but that will be in the days to come after the war, and the replenishing process will be slow indeed.

That the cattle stocks of Germany, France and other European nations affected by the war are being steadily diminished has had official recognition and in the United States there is every indication that we are hardly holding our own. The prices available to the beef producer induces him to sell closely. The cost of feed has reached such a high plane that the cattle producer inclines to dispose of his surplus and hold his stock to the minimum. It induces many to dispose entirely of their herds in order to take advantage of the present available prices for hay and grains. The farmer is willing for the time being to draw heavily upon the fertility of his soil, that he may take advantage of these alluring prices.

This all means the depleting of our cattle supply. Or if not actual depletion, it prevents the increase of which the world now stands so much in need.

With this condition everywhere recognized and with the appetite for beef being encouraged among the men composing the armies of all the warring countries, it is inevitable that there will be a permanent and growing inclination to beef consumption after the war. The readers do not need to be told that beef consumption at present in America is being held to a minimum at the urgent request of the food conservation department. Meatless days are becoming more frequent and we conform to the request the more cheerfully because of the high prices we are compelled to pay over the counter. But when these meatless days are no longer demanded and when prices settle a little, how eagerly we will anticipate the juicy steaks and roasts. We will not hesitate to gratify our appetites and beef consumption in America will tremendously expand. It is apparent to any observer that a decrease in meat prices of 20 percent would increase beef consumption 50 percent, were the food conservers' restrictions to be removed, as in time they will be.

So the producers of beef cannot be otherwise than encouraged by the prospect for the demand that will continue not alone thru the duration of the war, but for that long reconstructive period that will follow in its wake.—Frank D. Thomson.

THE COUNTRY'S CALL FOR HOGS

The Hog Shortage

Hogs on Farms September 1.

1916	65,645,000
1917	60,218,000
Decrease	5,427,000

The Corn Increase

1917 crop, bu.	3,191,083,000
1916 crop, bu.	2,583,241,000
Increase, bu.	607,842,000

This gap from a decrease of more than 5,000,000 hogs to an increase of more than 607,000,000 bushels of corn the hog raisers are expected to largely close up. Closing it by breeding more hogs is not only one of the big opportunities but one of the big obligations of American farmers. Other equally convincing figures enter into the equation but these are sufficient for present consideration. They show the reason for the "more hog" campaign, now at its height, to urge that sows be bred in increased numbers now to insure the needed number of pigs next spring to eat the surplus of the 1917 crop.

With the Government backing them, thru emergency legislation, as it never has before, farmers have had greater assurance that their efforts would be justly compensated. The Food Administration has said that, until further notice, prices, so far as it can influence them, will not go below the minimum of about $15.50 a hundred, for the average of the packers' droves on the Chicago market. Furthermore, it has said as to hogs farrowed next spring: "We will try to stabilize the price so that the farmer can count on getting for each 100 pounds of hogs ready for market 13 times the average cost per bushel of the corn fed into the hogs." Experience has shown that the ratio of 13 to 1 is liberal, and that it should stimulate hog breeding now.

Breed sows now, and gilts if necessary. Breeding may be done until as late as February in northern sections. But the sooner the new pig crop can be obtained, the sooner the urgent meat needs of the world will be met.

THE SHEEP SITUATION

The wool from 20 sheep is used to make the clothing and other equipment of one soldier. Yet six farms out of seven in the United States have no sheep. More than the entire wool production of the country will be used for the armies. And it will not be possible to get wool from abroad as formerly. Every ship is needed to transport men and supplies to the warring countries, and unless the necessity is extreme there will be no ships to spare for the long voyage to carry wool from Australia and South Africa. The need must be solved largely by the

production of more wool in this country.

The United States now has 1,200,000 fewer sheep than in 1914. Our production of wool has steadily declined since 1910, when it was 321,362,750 pounds, to 290,192,000 pounds in 1914 down to 285,573,000 pounds in 1917. In the same years our consumption increased from 550,356,525 pounds in 1914 to 737,679,924 pounds in 1916. Wool and mutton prices have almost doubled since 1914 and some grades of wool have trebled. There is every reason to believe that good prices will continue. Certainly this country can not afford to permit its wool business to decline as it has in the past few years. During the period of the war at least there is no possibility of over-production of wool.

OILMEAL FOR PIGS

Linseed oilmeal is sometimes used as a supplement to corn in hog feeding, and when tankage or skimmilk cannot be obtained at a reasonable price this feed may become the cheapest carrier of protein. Tankage at $80 a ton proved cheaper than oilmeal at $65 when fed with corn worth $1.68 a bushel in tests conducted at the Ohio Experiment Station.

Five pigs, weighing 141 pounds, were fed twelve weeks on corn alone; another lot, one part tankage with nine parts corn; and a third lot, one part linseed oilmeal to five parts corn. Those fed on corn gained 1½ pounds daily; those given corn and tankage, 2 pounds; and those supplied with corn and oilmeal, 1⅞ pounds.

The margin over the cost of the feed made by the pigs fed oilmeal with corn was $19.64, when hogs sold for $15 a hundred; of those fed tankage and corn, $22.72; and of those given only corn, $10.62.

Younger pigs would make much slower gains than those obtained in this experiment if corn alone is fed. Even for long feeding periods with well-developed hogs, corn is more profitable when supplemented with a small quantity of a feed rich in protein and mineral matter. Young pigs weighing 43 pounds gained only a third of a pound daily in one test when fed for 15 weeks on corn alone.

HAY AND SILAGE FOR COWS

In two tests at the Pennsylvania State College, comparing silage alone with silage and mixed hay as roughage for dairy cows, the animals were fed one pound of grain to each three pounds of milk and all the roughage they would consume. During the first year the milk yield decreased 0.14 pound during the feeding period of eleven weeks when hay and silage were fed and 1.64 pounds when silage alone was fed.

In the first test silage was offered twice daily to both groups and one group received hay in addition. When hay was fed in addition to silage the cows consumed 45 pounds of silage per cow daily. In addition, one group consumed five pounds of hay.

During the second test, silage was fed to one group three times a day. The other group received silage twice and hay once a day. In this test the group receiving silage alone consumed 52 pounds of silage while the group receiving an average of six pounds of mixed hay consumed 36 pounds of silage a day.

There was an increased silage consumption of 44 percent by the lot fed silage three times daily over that of the lot fed silage twice daily. During the second year the yield of cows fed hay and silage decreased 1.94 pounds per cow during the feeding period of eleven weeks. The decrease for cows fed silage only was 3.30 pounds per cow.

Altho it appeared that silage alone could be fed for a short period without detrimental effect upon the health of the cow, and without serious decrease in milk flow, there is an advantage in supplementing the silage with hay.

MEATLESS DAYS AND HOG MEATS

On Friday, October 30, Chicago experienced its first meatless day and it was generally conceded a success. The butchers had a very poor business Monday and Tuesday. At one place, where several butchers are employed, the receipts on Monday were $300 less than the previous Monday and the trade on Tuesday was practically dead. What effect the meatless days will have on pork products remains to be seen. At the present time, with receipts of hogs so light, we hardly think it will bring about any lower prices for fresh or cured hog meats but in a short time the receipts of hogs will be improving, and when there is plenty of fresh pork on the market and meatless days so far reaching if not more so in fresh pork than they will be in beef, for when receipts of hogs are heavy the supplies of fresh pork are burdensome, one meatless day a week with burdensome supplies of fresh pork will depress prices. We think the present dullness in the future provision market is due to the new rules of the Food Administration that will go into effect licensing the packers in the regulation of the meat interest.—W. G. Press & Co.

THE STRAW PILE

The Department of Agriculture says that 15 percent of our straw is burned and 22 percent more is disposed of in more or less unprofitable ways. Only about two-thirds of the crop is fed to live stock or used as bedding, altho these are the real ways to turn it into money.

Straw lessens the need for expensive concentrates and when marketed as meat brings greater returns than are likely to be obtained by disposing of it in any other form. Indirectly the gain in soil fertility is enormous. Burning straw means a total loss except that the ashes carry a negligible amount of mineral matter into the soil, but turned under unburned, however, it adds power to the soil.

At the present time the price of straw on the market ranges from nothing at all in some sections to $15 a ton for baled straw of good quality in others. Properly used, it is calculated that on an average it should be worth $5 a ton to the farm which produces it. On the other hand, reports from farmers indicate that in their opinion its average value is only $3.70 a ton. The explanation of the difference is that many farmers fail to realize that straw has any value at all or else use it in some comparatively unprofitable way.

Plenty of legume hay and silage mean that less grain may be fed without reducing milk production.

There's more milk in the pails and less purchased feed on the farms which are planted with more legume seed.

AA AA

Don't be crowded off the Cars

Right now you should order the fertilizer shipped which you will use next Spring.

The railroads, crowded to the limit with Government freight, require all cars loaded at least ten per cent above their marked capacity in order to handle necessary and essential freight.

This means that every fertilizer agent must bunch his orders to make up large carloads. This takes time, and cannot be done at all unless farmers will place now their orders for immediate shipment. Agents cannot take orders at the last moment and have them shipped as they come in. They must plan ahead. If you do the same, you will help the Government, the railroads, the fertilizer manufacturers and agents, and not least of all, you will help yourself by making sure of your fertilizer.

Don't be crowded off the cars. Order your fertilizer early.

If we have no agent in your town, we want one. Write us for agent's name or ask for an agency yourself. It is paying 50,000 others. Why not you?

HOW TO MAKE MONEY WITH FERTILIZERS

READ THIS BOOK

No matter how many other books about fertilizer you have read, *read this one.* It is a new and different book. There isn't any advice in it for one thing. Probably you have about all the advice you need already. This is just a common sense book. You will read it and say: "That's so! Why haven't I thought of that before." If you are using fertilizers you are probably making money with them, but *are you making enough?* How do you *know?* By making little changes here and there, as you sometimes shift your farm labor and teams, perhaps you can make more. This book may help you.

SEND THIS COUPON

Send me "How to Make Money with Fertilizers." I expect to use................tons of fertilizer this season. P. F. 7
My Name ....
My Post Office Address................................
My County............................*State*..............
My Crops for 1918 ....

The American Agricultural Chemical Co.
SECRETARY'S OFFICE
2 Rector Street, New York, N. Y.

The Company maintains an Agricultural Service Bureau conducted by Dr. H. J. Wheeler, (for many years Director of the Rhode Island State Experiment Station), whose Crop Bulletins, services and advice are free to all farmers.

We ship from 60 different centers east of the Mississippi. This means good service for you wherever you live.

AA AA

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Dec. 31, 1917.

Poultry did not maintain the high prices this week that were set last week for the Christmas and New Year's markets. While good prices are prevailing, they show quite a decline over the prevailing prices for the Christmas trade. Turkeys sold more slowly under moderate but ample offerings at the late decline. Other kinds of poultry of desirable size and quality were generally well cleaned up at the lower values. Turkeys are now selling at 35@38c for fancy dry picked stock, with fair to good bringing from 30@34c. Fowls are selling all the way from 25@29c, and chickens at 25@30c, the outside prices being for fancy heavy roasting chickens. Broiling chickens are in good demand at 32@37c, as to size and quality. Ducks and geese show a decline of 1@2c over last week's prices, ducks now selling at 25@29c and geese at 25@28c. Squabs continue firm and active selling as high as $7 per dozen for best, with small sizes and dark-meated squabs bringing from $3.50 per dozen up.

The market is ruling firm and active on live poultry, with extra heavy fowls selling up to 25@26c and smaller sizes at 23@24c. Spring chickens, when extra quality, also bring 25@26c, with fair to good selling at 22@24c. Ducks continue firm at 22@28c and geese at 25@28c, but turkeys are somewhat easier at 27@30c.

Vegetables

As was reported in these columns last week, potatoes receive very little attention from the trade during the Christmas and New Year's holidays, and very little trading has been done. The supplies, while still light, show an increase over a week ago, when there were only 27 cars of potatoes on the delivery tracks of both the Pennsylvania and the Reading Railroads. Today there were 43 cars on hand. This is a very small number for the season. Pennsylvania potatoes show no change, selling at $2.30@2.60 per cwt., while New York State stock brings from $2.20@2.40 per cwt. Nearby Jersey stock hauled in by farmers is still selling at 75@90c per ⅝ bu. basket.

Sweet potatoes continue in light supply and meet a fair demand. New Jersey stock is selling at $1.25@1.40 per bushel basket for best stock, with poor grades on down as low as $1.10. Maryland and Delaware stock in bushel hampers has been in very light supply and is selling at $1.65@1.85 for primes, with seconds at $1.10@1.25. There is no change to note in Marrow dried beans, which are selling at $16 per cwt. The Pea and Medium beans, however, are more plentiful, and a little lower, now selling at $14.25@14.50 per cwt. The Red Kidneys are also lower, bringing the same prices as the pea and medium beans. Strictly fancy green Florida beans are in very light supply, and such would readily draw $5@6 per hamper. There are still, however, plenty of the poor old beans here, some of which show the effects of frost. These are selling at very irregular prices, ranging from $1 on up to $3. Pennsylvania and New Jersey winter beets are in light supply and meet a steady demand at $3@3.50 per barrel. Bunch beets are also firm and active at $3@3.50 per 100. Brussel sprouts are very scarce and bring good prices when fancy, some Long Island stock selling at 20c per quart, with others at 16c up. California brussel sprouts are mostly poor. Best are selling at $10 per 100-quart drum. Carrots are plentiful, but steady, at $2@2.50 per barrel, with bunched bringing $2@3 per 100.

Cabbage is again in very light supply and much higher, and the prospects seem to indicate that the market will still go higher. Best green Danish is now drawing $50 per ton, with other grades from $15 up. A few Florida cucumbers are arriving and selling at $5@5.50 per box for best, with No. 2s at $3.50@4. Hothouse cucumbers continue steady, but firm, at 75c@$1.25 per dozen. The celery market appears to be rather weak. Supplies have been quite plentiful, and some of the stock is rather poor. Best washed bunches are selling at 50@60c, with lower grades at 25@35c. Pennsylvania celery has been meeting a ready outlet at 12@20c per bunch. Egg-plants are not bringing as high prices as they did a week ago, but still command from $3@5 per crate. Horseradish is rather scarce and bringing good prices, ranging from $5@9 per barrel. Lettuce continues very abundant and low prices have been prevailing for several days, best Florida in hampers selling at $1, with California boxes also selling at $1. Indications are that the lettuce market will do better very soon. Fancy hothouse mushrooms have been meeting an active market at $1@1.50 per 3-pound basket.

The onion market appears to be weaker. While supplies are not heavy, the demand has been light, and supplies have not been cleaning up. Best yellow onions are now selling at $2.75@2.85 per 100-pound sacks. There are quite a number of onions on the market which have been frozen, some of them quite badly, and these have been selling from $2 per sack on down, with some No. 3s as low as $1. Parsnips are in moderate supply and meeting a fair demand at 55@65c per basket. There are but very few peas on the market and fancy command extreme prices. Some Floridas here sold as high as $7 for a bushel hamper, while California peas are selling at $10@12 per small drum. Parsley is more plentiful and a little lower, selling at $5@6 per barrel. Radishes continue firm at $2.50@3.50 per hundred, with supplies very light. Peppers took quite a big drop last week, and instead of bringing $1 per crate, $5 is extreme top, and few reach this price, most sales being made at $4@4.50. Shallots are a little higher than last week, now selling at $3.50@4.50 per barrel. Norfolk spinach has been very scarce, and a car, which arrived here early this week, sold at $5.50 per barrel. Norfolk kale is bringing all the way from $2@2.50 per barrel, the lower price being for frozen stock.

There is very little squash on the market and prices are ranging from $3@4 per crate. Nearby turnips continue steady at 35@50c per basket for whites. The yellow Pennsylvania turnip is very scarce, and when here, has been drawing from 90c@$8 per basket. Canadian rutabagas are firm at $1@1.25 per cwt. for medium sized stock. There are but very few tomatoes here at the present time, and good, fancy, hard, ripe stock is selling at $3.50@4.50 per crate for the fancy 144 size, while the choice 180s are selling at $2.50@3.50 per crate. Hot-house tomatoes are also in light supply and firm at 25@27½c per pound for best stock, with No. 2 tomatoes selling from 15@20c per pound. Watercress continues in light supply and is selling around $2.50 per 100 bunches.

Fruits

The receipts of apples continue very light for the period of the year, as the daily offerings are only above five to eight cars. The cold weather prevailing has interfered with the movement this week, but the market rules steady and practically unchanged from last week. The range of values on the various varieties is about as follows: Baldwins, $3.50@5.50; Ben Davis, $3@4.26; Black Bens, $3@4.50; Black Twigs, $3.50@5.25; Ganos, $3@4.50; Greenings, $3.50@5.50; Kings, $3.50@5.50; Hubbardsons, $3.50@5.25; Starks, $3.50@4.50; Spys, $3.50@5.50; Snows, $4@5.50; Stayman Winesaps, $4@6.25; Twenty Ounce, $4@5; York Imperials, $3@5.25; Winesaps, $3.50@5.25; Rome Beauty, $5@6.50 The box apples continue in quite free supply with prices steady and unchanged generally and ranging about as follows: Rome Beauty, $1.50@2; Delicious, $2@2.50; Spitzenburg, $1.50@2.10; Jonathans, $1.50@2.10; Winesaps, $1.75@2.25.

The only pears now being offered are Kieffers, and these are meeting a rather slow demand unless strictly fancy, which command $3.50 per barrel, while some No. 2's are selling down to $2. The light remaining stocks of cranberries are closing very firm, best bringing $15@16 per barrel, with others from $12@14. California strawberries are not bringing such extreme prices as they did a week ago, when they sold up to 60c per pint. While an occasional few now selling at 45@50c per pint, most sales are being made at 35@40c, with others as low as 25c.

Eggs

There are very few arrivals of strictly fancy fresh, new-laid eggs coming and the market is very firm and higher, with demand greater than the supplies even at the advance. Nearby firsts are selling at 59@60c per dozen and current receipts at 58c, with seconds at 48@52c. Western fresh eggs are also selling at 58@60c per dozen. Fancy selected, well-graded and carefully candled eggs are jobbing out at 67@68c per dozen, with occasionally a small premium being made over these prices.

NEW YORK PRODUCE

New York City, Dec. 31, 1917.

All grades of butter firm. Best grades scarce. Cheese market improved. Eggs higher. Dressed fowls firm but turkeys weak. Little trading in fruits and vegetables.

Butter—Creamery, extras (92 score), per pound, 50½c; higher score, 51c@51½c; thirds to firsts, 39@49½c state dairy, 38@49c; ladles, 34@37c.

Cheese—Flats, specials, 24½c; do., colored, 23½c; prime, 22½@23c.

Eggs—Fresh gathered extras, 63@64c; extra firsts, 62c; nearby white, fine to fancy, 72@74c; ordinary to good, 62@66c; browns, 65c.

Dressed Poultry — Philadelphia and Long Island broilers, fancy, 38@40c; old roosters, 21c; squabs, $2.75@7.25 per dozen. Spring ducks, per lb., 25@28c; turkeys, fresh killed, 34c.

Vegetables and Greens—Beets, bbl., $2.25@4. Onions per 100-lb. bag, $1@3.75. Potatoes, Jersey, $1.83@2.50 per 100 lbs.; state and western, $2.25@2.50 per 100 lbs. Carrots, $2@3.50 bbl.

Apples—McIntosh, $4@7; York Imperial, $4@5.50; Twenty Ounce, $4@5.50; King, $4@5.50; Baldwin, $3.50@5.50.

LANCASTER PRODUCE

Lancaster, Dec. 31, 1917.

A record crowd of patrons at this morning's market found eggs overabundant and butter scarce. Butter brought 55 to 58c per pound. The supply af chickens was large, but they were held at Xmas prices, ranging from $1.25 to $1.50. Only a very few turkeys were on display and there was no demand for them.

Butter and Eggs.—Creamery butter, 55@58c per lb; country butter, 55@58c; fresh eggs, 58@60c per dozen; storage eggs, 45c; western eggs, 45c.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.00@1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Fruits.—Spinach, 20c hf pk; new turnips, 15c hf pk; potatoes, 12@20c hf pk; do, $1@1.35 per bu; sweet potatoes, 30 hf pk; cabbage, 5@10c head; eggplant, 5@10c each; cauliflower 15@20c head; lettuce, 5@12c head; lima beans 18c pt; apples, 20@30c hf pk; pears, 20@25c hf pk.

Grain Market.—Milling wheat, $2; damp wheat, $1.80; new corn, $1.15; rye, $1.65; oats, 65c; No. 1 timothy hay, $23; clover hay, $18; wheat straw, $12; oat straw, $10.

Miscellaneous.—Mincemeat, 16c lb; cornmeal, 10c qt; ponhaus, 10@12c lb; applebutter, 15c pt; homin, 6c pt.

YORK PRODUCE MARKETS

York, Pa., Dec. 31, 1917.

Market conditions were unchanged last week except the usual slack after a holiday trade This was not as noticeable as it is sometimes, as the Christmas buying was not as heavy as generally. For this reason the reaction was not as great.

Eggs.—56@60c per dozen.

Butter.—Country, 50@54c lb; separator, 55@58c; milk, 10c qt.

Poultry.—Hens, 18c lb, dressed; 75c@$2 each.

Vegetables.—Potatoes, 12@20c hf pk; 75c@$1.25 per bu; cabbage, 3@10c hd; lettuce, 5@15c hd; beets, 5c box; radishes, 6c bch; onions, 12c box; 25@30c hf pk; lima beans, 35c qt; soup beans, 34c@40c qt; celery, 5@10c a stalk; turnips, 20@25c hf pk; eggplants, 5@10c ea; cornmeal, 10@12c qt.

Fruit.—Apples, 12c@40c hf pk; pears, 5@10c box; 15@25c hf pk.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 90c; rye, $1.90; bran, $2.30 per cwt; middlings, $3 per cwt.

Wholesale Grain Market. — Wheat, $2.08; corn, $1.60; oats, 70c; rye, $1.40; bran, $38@40 per ton, middlings, $50@58 per ton.

PHILADELPHIA LIVE STOCK

Philadelphia, Dec. 31, 1917.

Beef Cattle—Supplies of desirable stock were only moderate and values generally were firmly maintained, with prices of some kinds showing an advance.

Steers, best, $12.50@13.50; fair to good, $11@12.50; common, $10@11; bulls, $8@10; extra choice, higher; cows, fat, per lb., 8@9.50c; extra choice, higher; medium, per lb., 6.50@8c; ordinary, per lb., 5@6.50c; calves, exceptional lots, $17@17.50; good to choice, $15.50@16.50; medium, $11@13; common, $7.50@8.50; Tennessee and southern, $8@16.

Sheep and Lambs—The market for sheep ruled firm, with a good inquiry that kept the offerings of desirable stock pretty well cleaned up. The market for lambs was showing some improvement. Outside advices were stronger, and with a more active inquiry and only moderate supplies values generally were maintained.

Sheep—Wethers, extra, $12.50@13; good to choice, $10.50@11.50; medium, $8@9; common, $6@7; ewes, heavy, fat, $10.50@11.50. Lambs—Choice, $17.50@17.75; do, medium, $16@16.50; inferior, $14@15.

Hogs—The market ruled steady under moderate supplies and a fair demand. Quotations for best western, $18.50@18.75.

City Dressed Stock—Lambs sold slowly and prices favored buyers. Other descriptions were firmly held, with demand fairly active.

Steers, 15@21c; heifers, 14@18c; cows, 10@17c; calves, 23@24c; southern and barnyards, 17@19c; country dressed, 20@22c; sheep, 22c; do, extras, 23c; lambs, 26c; do, extras, 27c; hogs, 24c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Dec. 31, 1917.

Baled Hay and Straw.—Receipts, 792 tons of hay and 6 cars of straw. Only a small proportion of the receipts of hay was for local use and the market was in good shape and firm, with supplies well under control. Straw was in fair request and values were steadily maintained. Quotations:

Timothy hay, according to location—No. 1, large bales, $28@28.50; No. 1, small bales, $28@28.50; No. 2, $26@27; No. 3, $23@24.50; sample, $19@21; no grade, $15@17.

Clover-mixed Hay.—Light mixed, $26@27; No. 1 do, $25@26; No. 2 do, light mixed, $22@23.

Straw.—No. 1 straight rye, $17.50; No. 2 do, $16.50@17; No. 1 tangled rye, $16@16.50; No. 2 do, $15@15.50; No. 1 wheat straw, $15@15.50; No. 2 do, $14@14.50; No. 1 oat straw, $15.50; No. 2 do, $14@14.50.

Bran.—There was little trading and values were largely nominal. Quotations:

Soft winter bran, in 100-lb. sacks, per ton, nominal; spring bran, in 100-lb. sacks per ton, $44.50@45.

Wheat.—No. 2, red, $2.25.

Corn.—Nominal.

Oats.—No. 2, 91@92c; standard white, 90½c@91c.

Rye.—Nearby, as to quality, $1.80.

NEW YORK HAY AND GRAIN

New York City, Dec. 31, 1917.

Feed.—The general market situation did not change to any extent on Saturday. No prices were available, mills being out of the market. Business was confined entirely to the filling of old contracts with delivery made as rapidly as possible under existing traffic conditions. The Government's price on western bran is $37.85 per ton, but no business has been heard at this figure. On this basis city grades should also be reduced about $10 a ton. The flour market is very unsettled, and no prices have been established to conform with the Food Administration's rulings, and until a market level is reached mills will not be able to determine the value of feed.

Hay and Straw.—The market is still improving. Offerings are light at Thirty-third street, and prices there are considerably higher than in Brooklyn. We hear of a few sales at Thirty-third street above our top quotations, but the bulk of the hay is being unloaded in Brooklyn, and there selling values average nearer our inside than our outside figures.

Wheat.—No. 2, red, $2.25.

Corn.—No. 3, yellow, $1.92 per bushel.

Oats.—No 2, white, 93c; No. 3, 92c.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Dec. 29, 1917.

Hay—Hay market continues in a healthy condition, receipts on the Pennsylvania being extremely light. Arrivals a little heavier on the New York Central Lines and the B. R. & P. Ry. Clover and clover mixed continue scarce at all terminals and readily placed at top quotations.

No. 1 timothy, $29.50@30; No. 2 timothy, $27@27.50; No. 3 timothy, $24.50@25; No. 1 light mixed, $28@28.50; No. 1 clover mixed, $29@30; No. 2 clover mixed, $26@28; No. 1 clover, $29@30; No. 2 clover, $26@28.

Straw—No straw arriving while there is an urgent demand for same; market advancing.

No. 1 oat, $13.75@14; No. 2, $13.50@13.75; No. 1 wheat, $12.75@13; No. 2, $12.25@12.75; No. 1 rye, $13.75@14.00; No. 2, $12.50@13.

Ear Corn—Light arrivals coupled with fair demand have given the market a better feeling.

New No. 2 yellow, $1.55@1.57; No. 3 yellow, $1.50@1.53.

Oats—Supply is very meager, demand urgent, market strong.

No. 2, white, 88@88½c; standard, 87½c; No. 3 white, 86@86½c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Dec. 31, 1917.

Butter.—The market ruled firm on high-grade stock, offerings of which were light. Demand, while not active, was fully equal to the offerings of this description. The bulk of the moderate offerings of solid-packed creamery was of the under grades, which were quiet at inside prices. Fancy prints were scarce and firm, with demand fairly active, but unattractive stock sold slowly and was irregular in value.

Western, fresh, solid-packed creamery, extra, 50c; high-scoring goods, 51@52c; extra firsts, 48@49c; firsts, 45@47c; seconds, 41@43c; sweet creamery, extra, 51c; under grades, 48@50c; held creamery, good to choice, 44@46c; do, ordinary, 40@42c; nearby prints, fancy, 54c; average extra, 51@53c; firsts, 47@49c; seconds, 42@43c; special brands jobbing at 55@57c.

Cheese.—The market was quiet and unchanged with ample offerings.

New York, full cream fancy, June, 25c; specials higher; do, fresh made, best 22¾@23c; do, fair to good, 22@22½c.

NEW YORK MILK MARKET

New York City, N. Y., Dec. 30, 1917.

Supply is easy, with demand moderate. The Federal Milk Commission will announce rates on Monday, December 31, for the producer and the distributor. Mr. Jordan, the chairman, states that everything consonant with a proper return to the producer and distributor is being done to meet the requirements of the consumer. The Commission expects to continue its work after naming prices. Committees have been appointed to consider means of eliminating wasteful practices and methods. Owing to the early date of this report, statement of receipts for this week is impossible.

TOBACCO MARKET

The New Year dawns bright upon Pennsylvania tobacco interests, at least from the standpoint of the grower. After a season fraught with vicissitudes, the situation at present is far better than usual and such as to encourage growers to plan for larger and better results during the coming year. The one great mistake of the year was by those who sold the result of their season's labor too early, before values were established. All should note now that valuations of practically all commodities are upon the average of 100 per cent above two years ago and accordingly price their products as well as their farms.

Sales were few during the holiday season and even before then there was considerable activity. Roads have been blockaded by mud and snow and thus not practical for automobiles, which are almost universally used by buyers; however, some sales were reported, the same ranging from 28 to 30 per cent for sound tobacco of good quality, and some $10 less for hail cut and frosted. The price at which the latter is selling is rather above expectation.—H. E. Tweed, Dec. 31, 1917.

GOVERNMENT BUYS NITRATES

Secretary Houston announced on December 29 that arrangements have been completed for the purchase of about 100,000 tons of nitrate of soda in Chile for the use of farmers. It is expected that about 18,000 tons will be ready for delivery at the seaboard during January, and that the remainder of the full amount will come along for the following months. It is expected that this material will be sold at a price of about $75 per ton on board cars at seaboard. Farmers will have to pay freight from the seaboard ports. The material will be sold only to farmers for their own use, and in amounts based upon the amounts used last year. Full directions on methods of making sale will be given later.

Grasses and Leguminous Crops in New York State, Bulletin No. 87. Published by the New York State Department of Agriculture, Albany, N. Y.—This work contains 280 pages and is well illustrated. It describes fully the different grasses and legumes which are grown in New York, together with directions for growing, harvesting and using. It also discusses the insects and diseases to which the different species are subject.

TRACTOR LUBRICATION

(Continued from Page 7.)

By rubbing two pieces of wood together you can make fire. It is not hard to imagine the heat that would be generated by metal-to-metal contact of the crank shaft and bearings when the former is revolving at the rate of, say, 900 to 1,250 or more revolutions per minute. Bearings differ widely in shape and size and are lubricated by different methods, according to the oil system employed in the engine. The use of an oil of poor quality or incorrect body may result in worn main or connecting rod bearings, piston pins, crank shaft or crank pins. You have a right to expect that the oil you use will amply protect all these bearing surfaces against ruthless wear.

Determining Grade of Oil

What is the lubricating system employed on your tractor? Engineers have classified these systems under five main heads. You should use an oil that is suited to the system employed. Suppose, for example, your tractor has full force feed lubrication. Here the oil is supplied by direct pressure to the main frictional points, including wrist pins. Such a system permits the use of a relatively heavier oil, rich in lubricating quality. Again, if your tractor has a lubricating system in which the oil pipes are exposed to atmospheric temperatures, the cold test qualities of the lubricant must be taken into account. The oil you use should be adapted to the lubricating system of your tractor.

The construction of the engine; horizontal, vertical or V-type cylinder arrangement; two- or four-stroke cycle; bore and stroke; valve construction, size and location; number and fit of piston rings; piston design and composition; piston clearance; water cooling system (pump or Thermo-Syphon); engine speed and climatic conditions—all must be considered. For best results, the oil you use must meet these conditions with scientific exactness.

The determination, then, of the correct oil for any tractor requires a highly technical knowledge of lubricants and their properties, and an exhaustive knowledge of gas engine construction and operation, combined with broad practical experience. Such knowledge and experience the tractor owner cannot be expected to have. How then can the tractor owner meet the lubrication problem his machine presents? Here is the answer.

When you buy oil, make the dealer or salesman show you the recommendation of a reliable lubricant manufacturer that the grade of oil the manufacturer recommends meets the lubricating requirements of your type of tractor machine with scientific exactness. And be sure of the manufacturer's standing in the lubrication field. Be sure that he is qualified to make an authoritative recommendation. Have it proved to your complete satisfaction by actual demonstration, if you will, that this oil will give maximum lubricating efficiency and lowest maintenance cost.

Don't be misled by oil tests. An actual service test with the oil being used in the crank-case of your tractor, or other tractors of similar make and model, is the safest guide to correct lubrication. In many instances it will be found that the tractor manufacturer either in his instruction book, or by means of a plate attached to the engine, recommends the use of a certain brand and grade of oil. In such instances it is advisable to follow the tractor manufacturer's advice. The tractor manufacturer wants his machines to make good. He wants to get the maximum of economical service from them. He realizes the vital importance of correct lubrication. Hence the recommendation plates and the suggestions in the instruction book.

Be guided by service rather than market price. Pennies saved in buying lubricating oil are danger pennies. They jeopardize your tractor dollars. They lead to heavy fuel bills, premature engine wear with its attendant repairs and loss of time and money. The difference in cost between the poorest lubricating oil and the best lubricating oil is small. Is that small first saving worth while? It can easily mean the difference between the smoothly-running tractor season and a season free from repairs, instead of overhauling and replacing of broken parts. If you start the season with wrong bodied oil, or poor quality oil, you are likely to finish it with your tractor in the repair shop. A single year's use may see your tractor seriously reduced in value—reduced in working efficiency—reduced in serviceability.

Conservation

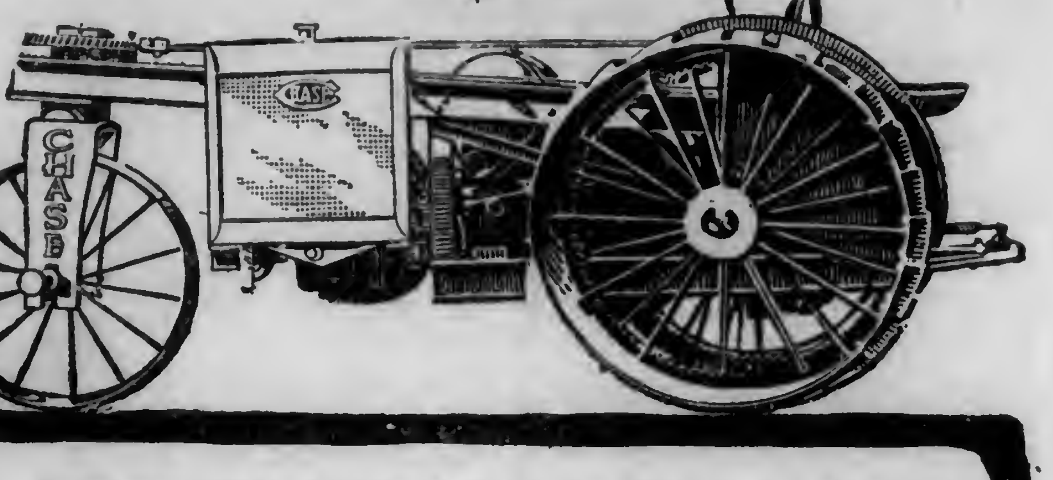
Here are two more reasons why correct lubrication should be of vital interest to you. First, vast quantities of petroleum products are required to wage war. The available supply can best be conserved by being guided by science and experience. "Do your bit" to conserve fuel, oil and machinery. Second, the nation has called upon you to increase crops. Help is scarce. More and more crops must be raised and handled by machinery. More tractors will be used this year and next year than ever before. These tractors will be worked harder than ever before. Protect them. The repair shop is no place for a tractor that should be harvesting grain sorely needed at home and abroad.

The vital plea to the American farmers is this: Cut down tractor repairs so that we can speed up the nation's crops. This is no year to slow down farm work thru time loss caused by unnecessary repairs and cleaning out of excess carbon. The war sharply intensifies the need for continued tractor operation.

When you consider that it is a matter of record among manufacturers, users, garages and repair shops, that approximately 50 percent of all internal combustion engine troubles are caused by faulty lubrication, then the absolute necessity for your using an oil that meets the needs of your tractor with scientific exactness is readily apparent. You bought a tractor that suits your needs. Buy an oil that suits your tractor. Correct lubrication is an investment. Make your lubricating oil pay you a cash dividend on every acre.

SOME OPERATING TROUBLE

We have had a three-wheel 8-16 tractor in use this past season. Our success has been curtailed by lack of a man who understands the operation of the machine. We have had difficulty in starting the motor, but we believe if operated right, it will do the work of six horses with the best results.—William Bray, Northampton Co., Pa.



Built to work in the East and to handle the side hills, the rocks, the soft land, the hard land, and all the other difficulties that are found on our eastern farms. The Chase Tractordoes the work. It's the best all round farm tool ever made. It is not built to sell at a price but is made to operate under the conditions on your farm.

CHASE FARM TRACTOR

The farm tractor offers the only solution for the shortage of help next spring. It makes it possible for one man to do the work of three men and six horses. The Chase Tractor draws two 14-inch plows—it draws a three section spring tooth—an 8 foot disc. It acts as a roller and pulverizer. It pulls a hay loader, manure spreader, etc. It saws wood, bails hay, cuts ensilage, etc. You cannot get along without it.

Write us now to get all the information while there is yet time—don't wait till later in the winter and then find out that the best delivery you can get on any tractor is long past May 1st, and you are left out and your spring work lost.

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Made from the best of meat scrap, carefully sterilized. If you are not satisfied with results, we will return your money. Order now while we can supply you.

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We also make "Ideal Meat Scraps" best for increased egg production in winter. Write for prices, etc.

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Last year we urged some of our investor friends to purchase certain farm lands in Eastern Oklahoma which were then offered at from $35.00 to $500.00 per acre. Many of these farms in 1917 earned for their owners several times the cost per acre in 1916. We still have a few farms listed for sale at very attractive prices. They are worthy of the consideration of any man who wants to buy a farm. We do not own these lands but with a view to increasing the number of farmers along our railroad, and thereby building up our trade territory, we have interested ourselves in the matter of distributing information in territory where we know there are good farmers, hoping that we can move some of them into Eastern Oklahoma.

We do not charge anything for our services. We will be well repaid if our territory is built up by the removal thereto of a number of men who know how to farm. If you are interested in a farm in Eastern Oklahoma, of the kind referred to above, write me for particulars.

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by feeding it to stock that is out of condition. IDEAL STOCK TONIC will save one-third of feed bills, condition your stock, create a normal appetite, relieve hide bound, exterminate worms, prevent slinking of calves, produce more and richer milk, produce more pork, prevent hog cholera.

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Free Catalog in colors explains how you can save money on Farm Truck or Road Wagons, also steel or wood wheels to fit any running gear. Send for it today.

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SHIRTS, PANTS AND OVERALLS made of the genuine Ironclad Khaki (the kind Uncle Sam uses) carry the yellow "army" label, like the above. Look for it in the garment before you buy.

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Our Winter Food Supply

Making The Most With It

Now that the shelves in our store room are loaded with canned vegetables and the bins are full of root vegetables, we do not fear any such lack of variety as was once the lot of the farmer's family. Food for energy is secured from the carbohydrates at less expense than from the proteins (meat, fish, eggs, etc.), and at less tax on the digestive system.

Swedish timbale cases (see illustration) filled with creamed peas, string beans, lima beans, macaroni, or any vegetable, fresh, dried or canned, make attractive ways of serving vegetables. To make timbale cases you need a set of timbale irons, one heart-shaped and one round, some hot fat, one-half cup sweet milk, one egg beaten well, three-fourths cup pastry flour, one teaspoon each salt and sugar, all well mixed. These proportions will make 25 or 30 cases. Heat the timbale iron in the hot fat, dip it then in the batter and then in the fat, and fry until brown. Drain on brown paper.

Vegetable Pot-Pie

Cook together until almost tender 1 cup dried carrots and 1½ cups diced turnips, using just enough water to cook; you can add a little boiling water as needed. Then add 3 cups diced potatoes and 1 quart of boiling meat broth, season with salt and pepper to taste, boil 10 minutes after adding the potatoes. A seasoning of parsley and any bits of left-over meat may be added to the vegetables with pleasing results.

. Prepare a biscuit dough with 7 cups pastry flour, 2¼ cups sweet milk, 3 tablespoons melted lard, 3 tablespoons baking-powder, and 1 teaspoon salt. Remember that all measures are level. Put layers of dough and vegetables in two kettles until all are used. Put all liquid for vegetables in, and enough more boiling water to two-thirds cover the pie; cover and cook 20 minutes. This will make two large dishes full.

Vegetable Soup

For vegetable soup use the above vegetables with a stalk of celery and an onion if liked, cut very fine, added with the potatoes. Cook one-half hour, adding as much broth or liquid as wanted and season to taste.

Vegetable Stew

Cook carrots, turnips and potatoes, cut in pieces, with a small piece of meat until tender.

Carrots With Vinegar

Cut carrots in small pieces and cook until tender in meat broth, add seasoning to taste, 1 tablespoon flour and 1 or 2 tablespoons vinegar. Prepare parsnips same way. The vinegar is a pleasing addition.

Peas and Carrots

Cook one cup of diced carrots in boiling salted water until tender. Add to the carrots 1 can of peas. Prepare as follows a sauce of 3 tablespoons of fat, 3 tablespoons flour, 1 cup meat broth and ½ cup milk seasoned with salt and pepper: Melt the fat, add to it the flour, and cook till it bubbles, then add the liquid and let boil. Heat the carrots and peas thoroly in the sauce and serve.

Baked Turnips and Cabbage

Place a pint of white turnips cut in small pieces with a pint of meat broth in a covered baking dish; bake until almost tender, then add small head of cabbage shredded. Season to taste and bake until tender. Add boiling water if more liquid is needed. Rutabagas may be used in place of white turnips.

Scalloped Corn and Chicken

Use remnants of chicken from a roast or boiled fowl. Free the meat from the bones, and skin. Mix 1½ cups chicken with 1 cup white sauce. Then in a baking dish or individual ramekin dishes, place layers of chicken in sauce and corn till the dish is full. Cover it with one cup bread or cracker crumbs mixed with ¼ cup melted fat (butter is best). Place in oven till thoroly hot and browned.

Corn and Noodles

Cook 1 pint of noodles till tender, then add 1 pint of canned corn, add broth or milk to make the desired consistency. Season to taste. Corn and macaroni may be prepared same way.

Creamed Lima Beans and Macaroni

Soak and cook till tender 1 pint lima beans. Cook 1 cup macaroni in boiling salted water 20 minutes, drain and add to beans. Add 1 cup white sauce, 2 teaspoons butter, salt and pepper to taste. We sometimes use canned lima or canned string beans in place of dried lima beans.

Stuffed Baked Onion

Peel 8 onions, cook in boiling water 5 minutes. Drain and let cool a little, and cut out centers to leave a thin wall of onion; chop the onion removed and mix with 1 cup chopped cooked ham, 1 tablespoon chopped parsley, ¼ cup butter, ½ teaspoon salt and a little pepper. Fill onion cases. Place in a baking dish, cover top with buttered crumbs, pour around the onions 1 cup broth or milk. Bake in oven till tender and brown.

Tomatoes, Spaghetti and Beef Balls

Chop fine 1 lb. beef, add to it ¼ cup bread crumbs, 1 egg, ½ teaspoon salt and, if liked, 1 onion shredded. Mix thoroly and make into 12 balls. Heat 3 tablespoons fat in frying pan; in this cook the balls till browned on all sides. Place in a baking dish with 1 can tomatoes (which have been put thru a sieve), 1 tablespoon chopped parsley and 1 cup water or broth. Cover dish and cook in oven 45 minutes. In the meantime cook ½ package of spaghetti, broken into half lengths, in boiling salted water till tender; drain and rinse in cold water. When about ready to serve add to the meat balls and tomatoes the spaghetti and ¼ cup grated cheese; cover and return to oven to become very hot. Serve from the baking dish. The onion and cheese may be omitted if preferred.

Creamed Cabbage Au Gratin

Shred a head of cabbage, cook in an open kettle till tender. Melt ¼ cup butter, in it cook 3 tablespoons flour and ½ teaspoon salt, add 2 cups milk and stir till boiling. Put in a baking dish a layer of cabbage sprinkled with salt, cover with the above sauce and 2 tablespoons grated cheese; so continue till all ingredients are used; cover with buttered crumbs and brown in the oven. Garnish with hard-cooked eggs sliced thin. The cheese may be omitted.

Beans, Macaroni and Tomatoes

Soak 1½ cups navy or kidney beans, cook till tender; cook ½ cup macaroni till tender in boiling salted water. Add to the beans this macaroni, 1 cup canned tomatoes, 4 tablespoons butter and salt and pepper to taste. Let simmer together 10 minutes, then serve. Rice may be used in place of macaroni.

Canned String Beans With Meat

Cook a small piece of ham till tender. Half an hour before serving add to the meat 1 can string beans, cook till the liquid is all evaporated and they are just ready to fry. Take up and serve with a little vinegar at table.

Bean Loaf

Soak and cook 1 pint beans, having about ½ cup liquid on them when done. Melt 4 tablespoons fat in a frying pan, add to it 2 cups bread crumbs, stir till well mixed and slightly browned. Then add to the beans with 2 tablespoons flour. Press firmly in a greased pan, place thin slices of ham or bacon over top, and bake till nicely browned. Turn out on a platter and serve with tomato sauce or bacon gravy. An onion may be added finely chopped if desired.

Dumplings With Meat and Vegetables

Cook together 1 carrot, 1 large rutabaga or white turnip, 3 potatoes and 1 small head of cabbage, all cut fine. Add 1 can boned spareribs or some fresh cooked ones, salt, pepper and parsely to taste. Then 15 minutes before serving add drop dumplings made from 3 cups pastry flour, 6 teaspoons baking powder, ½ teaspoon salt, 1 tablespoon melted lard or butter and 1 cup sweet milk. The batter will be quite stiff. Drop by small spoonsful.

Cabbage and Macaroni

Cut rather fine 1 head cabbage, cook till tender in meat broth, having plenty of liquid; when done add to the cabbage 1 cup macaroni which has been cooked tender in boiling salted water.—Mary A. Kintigh, Westmoreland Co., Pa.

Samples of the Kintigh Food Supply

Keep Baby's Skin Soft and Smooth

Always use 20 Mule Team Borax in the baby's bath. It softens and soothes the delicate skin and cleans it hygienically. Opens the pores and lets the skin "breathe". And every *other* member of your family will find many beneficial uses for

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See that it is used in the bath; for a mouth and eye wash and other toilet purposes. It is Nature's greatest cleanser. Costs little, does much. Endorsed by all health authorities. Used wherever hygienic cleanliness must be maintained.

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Send for "Magic Crystal" Booklet. It describes 100 household uses for 20 Mule Team Borax.

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THE PACIFIC COAST BORAX CO.

WHEAT-SAVING HINTS

Stale bread which has not become hard may be freshened to some extent by placing it in a tightly covered pan and baking in a hot oven for a few minutes. The crust may or may not be slightly moistened before baking.

Several recipes for the use of stale bread are suggested by Miss Pearl MacDonald, in charge of home economics extension work at the Pennsylvania State College, as follows:

Steamed Bread. — Put slices of stale bread in a steamer. Cover tightly and steam until bread is freshened. Serve at once.

Toast.—Cut bread into one-third inch slices. Toast to a golden brown on both sides, preferably over a slow fire so that bread may be thoroly dried out. Serve with or without butter.

Milk Toast.—Allow one cup of milk to one large slice toast. Heat milk almost to the boiling point; season with salt, pepper and butter. Just before serving dip slices of toast in the milk until moistened, then remove to serving dish and pour the milk over.

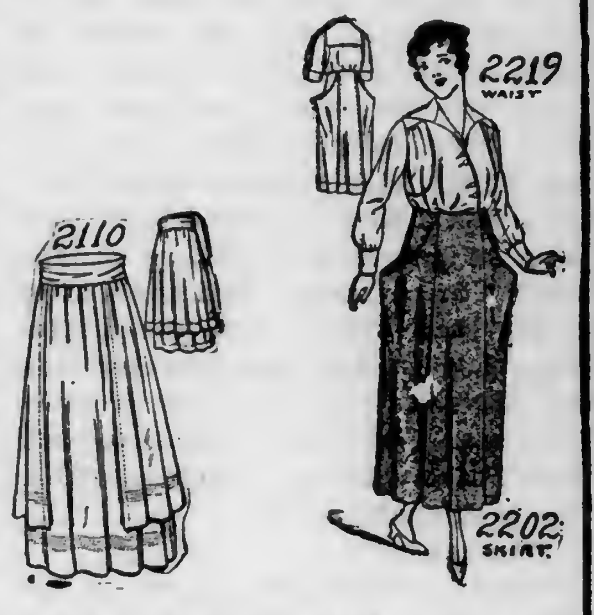
French Toast.—Six slices of stale bread, one egg or more, one cup of milk, one-fourth teaspoon salt. Beat egg slightly, add salt and milk. Dip bread into milk mixture, then cook to a golden brown on a hot, well greased griddle or frying pan.

Similar recipes may be secured by addressing Miss MacDonald at State College, Pa.

PENNSYLVANIA FARMER PATTERNS

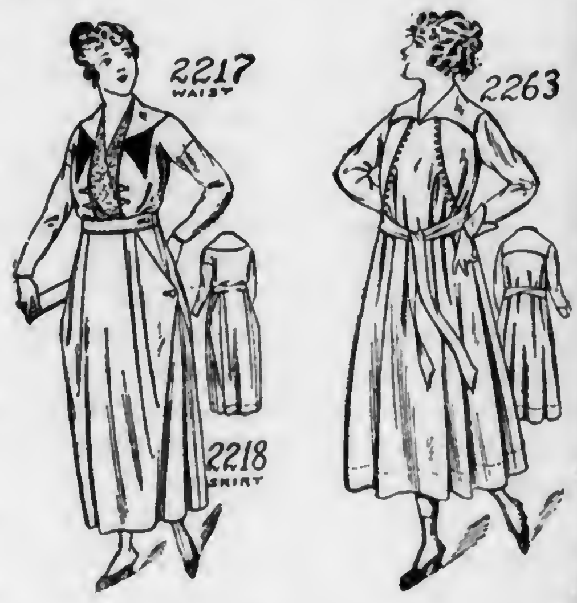
Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

2110—Ladies' Tunic Skirt in Raised Waistline.—The skirt and tunic may be finished and worn separately. The pattern is cut in seven sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. It requires 3¼ yards of 44-inch material for the skirt and 2½ yards for the tunic for a 24-inch size. The skirt measures about 2½ yards at the foot. Price 10 cents.



2219 (Waist)—2202 (Skirt).—The skirt may be made of Jersey cloth, serge, satin, linen, silk, novelty mixtures, checked or plaid material. The waist is nice for linen, crepe, lawn, madras, flannel, satin or silk. It is cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure and requires 4¼ yards of 36-inch material for a 36-inch size. The skirt is cut in six sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. Size 24 requires 6½ yards of 36-inch material. The skirt measures about 2⅜ yards at the foot. This illustration calls for two separate patterns. Price 10 cents each.

2217 (Waist)—2218 (Skirt).—The waist pattern is cut in six sizes: 34, 36, 38, 40, 42, and 44 inches bust measure. The skirt is cut in six sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires eight yards of 27-inch material for a medium size for the entire dress. The skirt measures 2¼ yards at the foot. This illustration calls for two patterns which cost you 10 cents each.



2263—Unique and Stylish.—The sleeve is a one-piece model, finished with a neat cuff. The dress closes at the left side, under the panel. Pattern is cut in three sizes: 16, 18 and 20 years. Size 18 requires 5¼ yards of 44-inch material. The skirt measures about two yards at the foot. Price 10 cents.

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PILLSBURY'S

Strength in Flour

The strength of a flour is determined largely by the amount of water it will absorb.

Bread made from a good strong flour will not dry out quickly. The extra amount of water absorbed in the mixing keeps the bread moist and fresh.

If your bread dries out in no time, and you have to bake often and in small batches, it is probably because the flour you use lacks strength.

Bread made from Pillsbury's Best flour stays fresh a long time, because Pillsbury's Best is a strong flour and absorbs lots of water.

The Flour Question Settled

Because Pillsbury's Best

Pillsbury Flour Mills Company, Minneapolis, Minn.

NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

SYNOPSIS OF PREVIOUS CHAPTERS

Henry de Spain is manager of the stage line running between Spanish Sinks and Sleepy Cat. The Morgan Gang, with headquarters at Morgan's Gap, make trouble for him at once, and in defending the property of the stage line, de Spain is brought into two desperate fights. After one of these his horse carries him to the foot of Music Mountain, where he is discovered and nursed back to life by Nan Morgan, niece of the Gang leader. De Spain falls in love with Nan, and believes that she loves him in return. Shortly after his recovery and escape, old Duke Morgan, leader of the gang, and Nan's uncle, is thrown from his horse and badly hurt. He is taken to the hospital at Sleepy Cat, and Nan comes to nurse him. Here de Spain sees her on the anniversary of their first meeting, and finally wins her acknowlegement that she loves him. The future presents many troubles for her, engaged to the man most hated by her own people.

CHAPTER XIX

Danger

With never such apprehension, never such stealth, never so heavy a secret, so sensible a burning in cheek and eye, as when she tiptoed into her uncle's room at midnight, Nan's heart beat as the wings of a bird beat from the broken door of a cage into a forbidden sky of happiness. She had left the room a girl; she came back to it a woman.

Sleep she did not expect to even ask for; the night was all too short to think of those tense fearful moments that had pledged her to her lover. When the anxieties of her situation overwhelmed her, as they would again and again, she felt herself in the arms of this strange, resolute man whom all her own hated and whom she knew she already loved beyond all power to put away. In her heart she had tried this more than once; she knew she could not, would not ever do it, or even try to do it, again.

She rejoiced in his love. She trusted. When he spoke she believed this man whom no one around her would believe; and she, who never had believed what other men avowed, and who detested their avowals, believed de Spain, and secretly, guiltily, glowed in every word of his devotion and breathed faint in its every caress.

Night could hardly come fast enough, after the next long day. A hundred times during that day she had reminded herself, while the slow, majestic sun shone simmering on the hot desert, that she had promised to steal out into the grounds the minute darkness fell—he would be waiting. A hundred times in the long afternoon, Nan looked into the cloudless western sky and with puny eager hands would have pushed the lagging orb on its course that she might give herself into the arms where she felt her place so sure, her honor so safe, her helplessness so protected, herself so loved.

How her cheeks burned after supper when she asked her uncle for leave to post a letter downtown! How breathless with apprehension she halted as de Spain stepped from the shadow of the trees and drew her importunately beneath them for the kiss that had burned on her troubled lips all day! How, girl-like, knowing his caresses were all her own—knowing she could at an instant call forth enough to smother her—she tyrannized his importuning and, like a lovely miser, hoarded her responsiveness under calm eyes and laconic whispers until, when she did give back his eagerness, she made his senses reel.

How dreamily she listened to every word that he let fall in his outpouring of devotion; how gravely she put up her hand to restrain his busy intrusion, and asked if he knew that no man in the world, least of all her fierce and burly cousin, had ever touched her lips until he himself forced a kiss on them the night before: "And now!" She hid her face against his shoulder. "Oh, Henry, how I love you! I'm so ashamed, I couldn't tell you if it weren't night. I'll never look you in the face again in the daytime."

And when he told her how little he himself had to do with, and how little he knew about girls, even from boyhood, how she feigned not to believe, and believed him still! They were two children raised in the magic of an hour to the supreme height of life and dizzy together on its summit.

"I don't see how you can care for me, Henry. Oh, I mean it," she protested, holding her head resolutely up. "You know who we are, away off there in the mountains. Everyone hates us. I suppose they've plenty of reason to; we hate everybody else. And why shouldn't we? We're at war with everyone. You know, better than I do, what goes on in the Gap. I don't want to know; I try not to know; Uncle Duke tries to keep things from me. When you began to act—as if you cared for me—that day on Music—I couldn't believe you meant it at all. And yet—I'm afraid I liked to try to think you did. When you looked at me I felt as if you could see right thru me."

Confidences never came to an end. And diplomacy came into its own almost at once in de Spain's efforts to improve his relations with the implacable Duke. The day came when Nan's uncle could be taken home. De Spain sent to him a soft-spoken emissary, Bob Scott, offering to provide a light stage, with his compliments, for the trip. The intractable mountaineer, with his refusal to accept the olive-branch, blew Bob out of the room. Nan was crushed by the result, but de Spain was not to be dismayed.

Lefever came to him the day after Nan had got her uncle home. "Henry," he began without any preliminaries, "there is one thing about your precipitate ride up Music Mountain that I never got clear in my mind. After the fight, your cartridge-belt was hanging up in the barn at Calabasas for two weeks. You walked in to us that morning with your belt buckled on. You told us you put it on before you came upstairs. What? Oh, yes, I know, Henry. But that belt wasn't hanging down-stairs with your coat earlier in the evening. No, Henry, it wasn't, not when I looked. Don't tell me such things, because—I don't know. Where was the belt when you found it?"

"Some distance from the coat, John. I admit that. I'll tell you. Some one had moved the belt. It was not where I left it. I was hurried the morning I rode in and I can't tell you just where I found it."

Lefever never batted an eyelash. "I know you can't, Henry. Because you won't. That Scotch hybrid McAlpin knows a few things, too, that he won't tell. All I want to say is, you can trust that man too far. He's got all my recent salary. Every time Jeffries raises my pay that hairy-pawed horse-doctor reduces it just so much a month. And he does it with one pack of 52 small cards that you could stick in your vest pocket."

"McAlpin has a wife and child to support," suggested de Spain.

"Don't think for a moment he does it," returned Lefever vehemently. "I support his wife and children, myself."

"You shouldn't play cards, John."

"It was by playing cards that I located Sassoon, just the same. A little game with your friend Bull Page, by the way. And say, that man blew into Calabasas one day here lately with a twenty-dollar bill; its a fact. Now, where do you suppose he got twenty dollars in one bill? I know I had it two hours after he got there and then in fifteen minutes that blamed bull-whacker you pay thirty-two a week took it away from me. But I got Sassoon spotted. And where do you suppose Splitlips is this minute?"

"Morgan's Gap."

"Quite so—and been there all the time. Now, Bob has the old warrant for him; the question is, how to get him out."

De Spain reflected a moment before replying. "John, let him alone just for the present," he said at length.

Lefever's eyes bulged. "Let Sassoon alone?"

"He will keep—for a while, anyway."

"What do you mean?"

"I don't want to stir things up too strong over that way just this minute, John."

"Why not?"

De Spain shuffled a little. "Well, Jeffries thinks we might let things rest till Duke Morgan and the others get over some of their soreness."

Lefever, astonished at the indifference of de Spain to the opportunity of nabbing Sassoon, while he could be found, expostulated strongly. When de Spain persisted, Lefever, huffed, confided to Bob Scott that when the general manager got ready he could catch Sassoon himself.

De Spain wanted for Nan's sake, as well as his own, to see what could be done to pacify her uncle and his relatives so that a wedge might be driven in between them and their notorious henchman, and Sassoon brought to book with their consent; on this point, however, he was not quite bold-faced enought to take his friends into his confidence.

De Spain, as firey a lover as he was a fighter, stayed none of his courting because circumstances put Music Mountain between him and his mistress. And Nan, after she had once surrendered, was nothing behind in the chances she unhesitatingly took to arrange her meetings with de Spain. He found in her, once her girlish timidity was overcome and a woman's confidence had replaced it, a disregard of consequences, so far as their own plans were concerned, that sometimes took away his breath.

The very day after she had got her uncle home, with the aid of Satterlee Morgan and an antiquated spring wagon, Nan rode, later in the afternoon, over to Calabasas. The two that would not be restrained had made their appointment at the lower lava beds half-way between the Gap and Calabasas. The sun was sinking behind the mountain when de Spain galloped out from the rocks as Nan turned from the trail and rode toward the black and weather-beaten meeting-place.

They could hardly slip from their saddles fast enough to reach each other's arms—Nan, trim as a model in fresh khaki, trying with a handkerchief hardly larger than a postage stamp to wipe the flecks of dust from her pink cheeks, while de Spain, between dabs, covered them with importunate greetings. Looking engrossed into each other's eyes, and both, in their eagerness, talking at once, they led their horses into hiding and sat down to try to tell all that had happened since their parting. Wars and rumors of wars, feuds and raidings, fights and pursuits were no more to them than to babes in the woods. All that mattered to them—sitting or pacing together and absorbed, in the path of the long-cold volcanic stream buried in the shifting sands of the desert—was that they should clasp each other other's clinging hands, listen each to the other's answering voice, look unrestrained into each other's questioning eyes.

They met in both the lava beds—the upper lay between the Gap and town—more than once. And one day came a scare. They were sitting on a little ledge well up in the rocks where de Spain could overlook the trail east and west, and were talking about a bungalow some day to be in Sleepy Cat, when they saw men riding from the west toward Calabasas. There were three in the party, one lagging well behind. The two men leading, Nan and de Spain made out to be Gale Morgan and Page. They saw the man coming on behind stop his horse and lean forward, his head bent over the trail. He was examining the sand and halted quite a minute to study something. Both knew what he was studying—the hoof-prints of Nan's pony heading toward the lava. Nan shrank back and with de Spain moved a little to where they could watch the intruder without being seen. Nan whispered first. "Its Sassoon." De Spain nodded. "What shall we do?" breathed Nan.

"Nothing yet," returned her lover, watching the horseman, whose eyes were still fixed on the pony's trail, but who was now less than a half a mile away and riding straight toward them.

De Spain, his eyes on the danger and his hand laid behind Nan's waist, led the way guardedly down to where their horses stood. Nan, needing no instructions for the emergency, took the lines of the horses, and de Spain, standing beside his own horse, reached his hand over in front of the pommel and, regarding Sassoon all the while, drew his rifle slowly from its scabbard. The blood fled Nan's cheeks. She said nothing. Without looking at her, de Spain drew her own rifle from her horse's side, passed it into her hand and, moving over in front of the horses, laid his hand reassuringly on her waist again. At that moment, little knowing what eyes were on him in the black fragments ahead, Sassoon looked up; then rode more slowly forward. The color returned to Nan's cheeks. "Do you want me to use this?" she murmured, indicating the rifle.

"Certainly not. But if the others turn back, I may need it. Stay right here with the horses. He will lose the trail in a minute now. When he reaches the rock I'll go down and keep him from getting off his horse—he won't fight from the saddle."

But with an instinct better than knowledge, Sassoon, like a wolf scenting danger, stopped again. He scanned the broken and forbidding hump in front, now less than a quarter of a mile from him, questioningly. His eyes seemed to move inquisitively over the lava pile as if asking why a Morgan Gap pony had visited it. In another moment he wheeled his horse and spurred rapidly after his companions.

The two drew a deep breath. De Spain laughed. "What we don't know, never hurts us." He drew Nan to him. Holding the rifle muzzle at arm's length as the butt rested on the ground, she looked up from the shoulder to which she was drawn. "What should you have done if he had come?"

"Taken you to the Gap and then taken him to Sleepy Cat, where he belongs."

"But, Henry, suppose——"

"There wouldn't have been any 'suppose.' "

"Suppose the others had come."

"With one rifle, here, a man could stand off a regiment. Nan, do you know that you fit into my arm as if you were made for it?"

His courage was contagious. When he had tired her with fresh importunities he unpinned her felt hat and held it out of reach while he kissed and toyed with and disarranged her hair. In revenge, she snatched from his pocket his little black memorandum book and some letters and read, or pretended to read them, and seizing her opportunity she broke from him and ran with the utmost fleetness up into the rocks.

In two minutes they had forgotten the episode almost as completely as if it never had been. But when they left for home, they agreed that they would not meet there again. They knew that Sassoon, like a jackal, would surely come back, and more than once, until he found out just what that trail or any subsequent trail leading into the beds meant. The lovers laughed the jackal's spying to scorn and rode away, bantering, racing, and chasing each other in the saddle, as solely concerned in their happiness as if there was nothing else of moment in the whole wide world.

CHAPTER XX

Facing the Music

They had not underestimated the danger from Sassoon's suspicious malevolence. He returned next morning to read what further he could among the rocks. It was little, but it spelled a meeting of two people—Nan and another—and he was stimulated to keep his eyes and ears open for further discoveries. Moreover, continuing ease in seeing each other, undetected by hostile eyes, gradually rendered the lovers less cautious in their arrangements. The one thing that possessed their energies was to be together.

De Spain, naturally reckless, had won in Nan a girl hardly more concerned. Self-reliant, both of them, and instinctively vigilant, they spent so much time together that Scott and Lefever, who, before a fortnight had passed after Duke's return home, surmised that de Spain must be carrying on some sort of a clandestine affair hinting toward the Gap, only questioned how long it would be before something happened, and only hoped it would not be, in their own word, unpleasant. It was not theirs in any case to admonish de Spain, nor to dog the movements of so capable a friend even when his safety was concerned, so long as he preferred to keep his own counsel—there are limits within which no man welcomes uninvited assistance. And de Spain, in his long and frequent rides, his protracted absences, indifference to the details of business and careless humor, had evidently passed within these limits.

What was stage traffic to him compared to the sunshine on Nan's hair; what attraction had schedules to offer against a moment of her eyes; what pleasing connection could there be between bad-order wheels and her low laugh?

The two felt that they must meet to discuss their own constant perplexities and the problems of their difficult situation; but when they reached their trysting-places, there was more of gayety than gravity, more of non-chalance than concern, more of looking into each other's hearts than looking into the troublesome future. And there was hardly an inviting spot within miles of Music Mountain that one or the other of the two had not waited near.

There were, of course, disappointments, but there were only a few failures in their arrangements. The difficulties of these fell chiefly on Nan. How she overcame them was a source of surprise to de Spain, who marvelled at her innocent resource in escaping the demands at home and making her way, despite an array of obstacles, to his distant impatience.

Midway between Music Mountain and Sleepy Cat a low-lying wall of lava rock, in part sand-covered and in part exposed, parallels and sometimes crosses the principal trail. This undulating ridge was a favorite with de Spain and Nan, because they could ride in and out of hiding-places without more than just leaving the trail itself. To the west of this ridge, and commanding it, rose rather more than a mile away the cone called Black Cap.

"Suppose," said Nan one afternoon, looking from de Spain's side toward the mountains, "some one should be spying on us from Black Cap?" She pointed to the solitary rock.

"If any one has been, Nan, with a good glass he must have seen exchanges of confidence over here that would make him gnash his teeth. I know if I ever saw anything like it I'd go hang. But the country around there is too rough for a horse. Nobody ever hides around Black Cap, except some tramp hold-up man that's crowded in his get-away. Bob Scott says there are dozens of mountain-lions over there."

But Sassoon had the pleasant patience of a mountain-lion and its dogged persistence, and, hiding himself on Black Cap, he made certain one day of what he had long been convinced—that Nan was meeting de Spain.

The day after she had mentioned Black Cap to her lover, Nan rode

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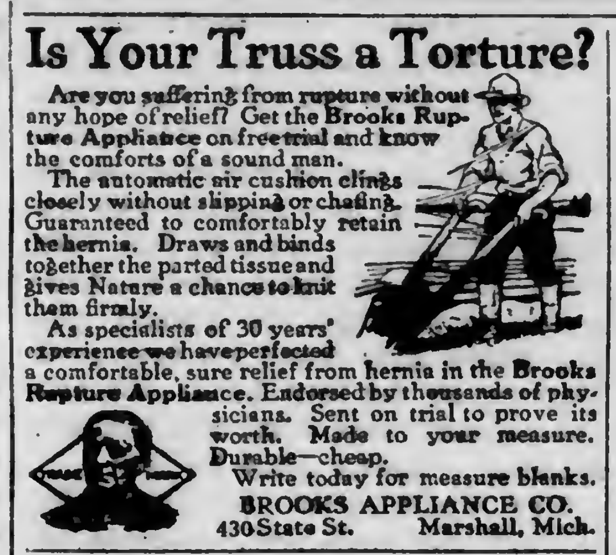

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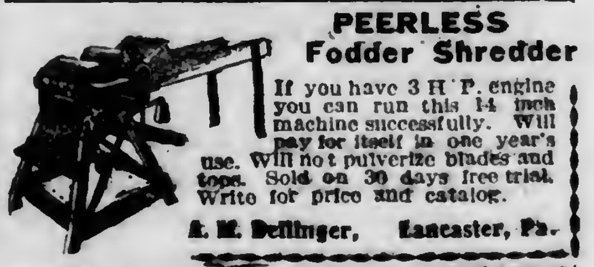

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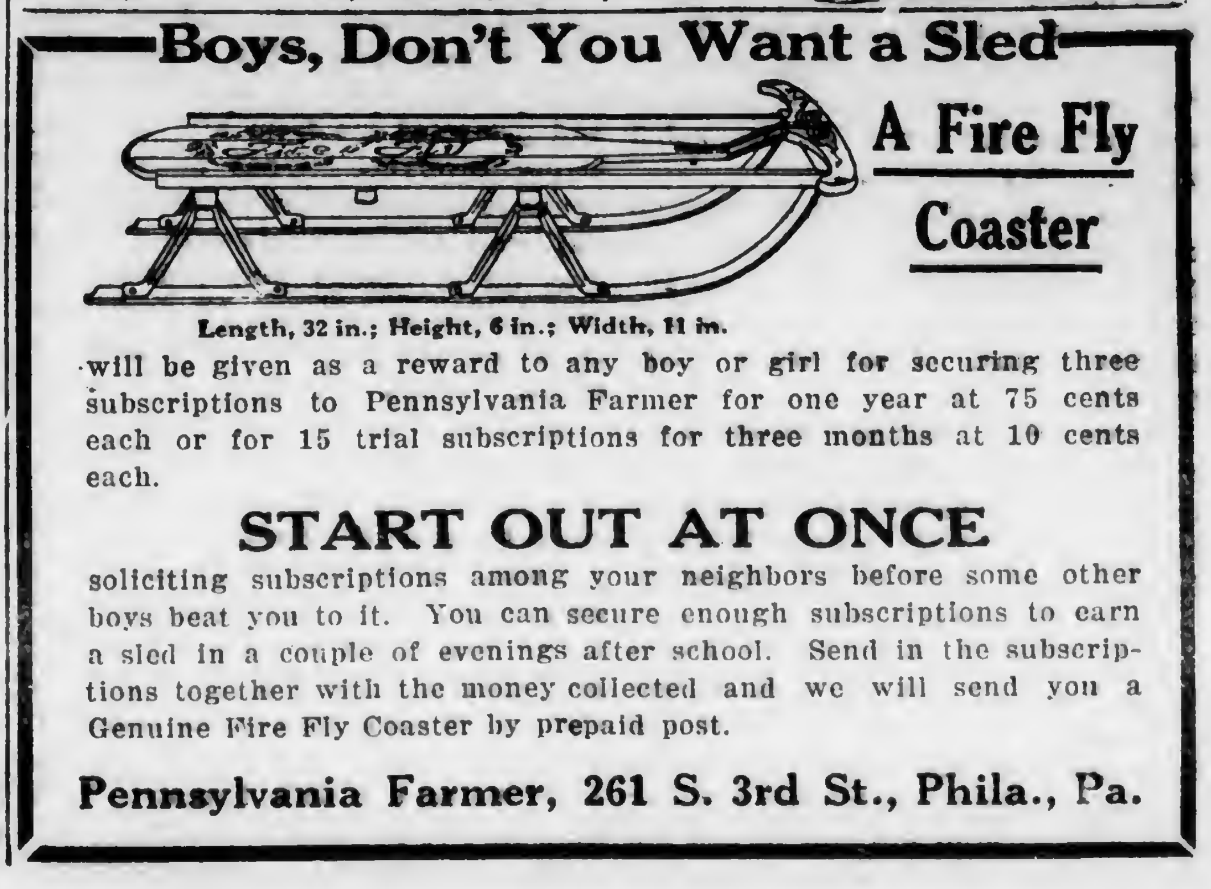

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over to Calabasas to get a bridle mended. Galloping back, she encountered Sassoon just inside the Gap. Nan so detested him that she never spoke when she could avoid it. On his part he pretended not to see her as she passed. When she reached home she found her Uncle Duke and Gale standing in front of the fire-place in the living-room. The two appeared from their manner to have been in a heated discussion, one that had stopped suddenly on her appearance. Both looked at Nan. The expression on their faces forewarned her. She threw her quirt on the table, drew off her riding gloves and began to unpin her hat; but she knew a storm was impending.

Gale had been made for a long time to know that he was an unwelcome visitor, and Nan's greeting of him was the merest contemptuous nod. "Well, uncle," she said, glancing at Duke, "I'm late again. Have you had supper?"

Duke always spoke curtly; tonight his heavy voice was sharp as an axe. "Been late a good deal lately."

Nan laid her hat on the table and, glancing composedly from one suspicious face to the other, put her hands up to rearrange her hair. "I'm going to try to do better. I'll go out and get my supper if you've had yours." She started toward the dining-room.

"Hold on!" Nan paused at her uncle's ferocious command. She looked at him either really or feignedly surprised, her expression changing to one of indignation and waited for him to speak. Since he did no more than glare angrily at her, Nan lifted her brows a little. "What do you want, uncle?"

"Where did you go this afternoon?"

"Over to Calabasas," she answered innocently.

"Who'd you meet there?" Duke's tone snapped with anger. He was working himself into a fury, but Nan saw it must be faced.

"The same people I usually meet —why?"

"Did you meet Henry de Spain there this afternoon?"

Nan looked squarely at her cousin and returned his triumphant expression defiantly before she turned her eyes on her uncle. "No," she said collectedly. "Why?"

"Do you deny it?" he thundered.

"Yes, I deny it. Why?"

"Did you see de Spain at Calabasas this afternoon?"

"No."

"See him anywhere else?"

"No, I did not. What do you mean? What," demanded his niece with spirit, "do you want to know? What are you trying to find out?"

Duke turned in his rage on Gale. "There! You hear that—what have you got to say now?" he demanded with an abusive oath.

Gale, who had been hardly able to refrain from breaking in, answered fast. "What have I got to say?" he roared. "I say I know what I'm talking about. I say she's lying, Duke."

Nan's face turned white with anger. Before she could speak her uncle took up the words. "Hold on," he shouted. "Don't tell me she lies." He launched another hot expletive. "I know she doesn't lie!"

Gale jumped forward, his finger pointed at Nan. "Look here, do you deny you are meeting Henry de Spain all over the desert?"

Nan's anger supported her without a tremor. "Who are you to ask me whom I meet or don't meet?"

"You've been meeting de Spain right along, haven't you? You met him down the Sleepy Cat trail near Black Cap, didn't you?"

Nan stood with her back against the end of the table where her uncle's first words had stopped her, and she looked sidewise toward her cousin. In her answer he heard as much contempt as a girl's voice could carry to a rejected lover. "So you've turned sneak!"

Gale roared a string of bad words.

"You hire that coyote, Sassoon, to spy for you, do you?" demanded Nan coolly. "Aren't you proud of your manly relation, uncle?" Duke was choking with rage. He tried to speak to her, but he could not form his words. "What is it you want to know, uncle? Whether it is true that I meet Henry de Spain? It is. I do meet him, and we're engaged to be married when you give us permission, Uncle Duke—and not till then."

"There you have it," cried Gale. "There's the story. I told you so. I've known it for a week, I tell you." Nan's face set. "Not only," continued her cousin jeeringly, "meeting that——"

Almost before the vile epithet that followed had reached her ears, Nan caught up the whip. Before he could escape she cut Gale sharply across the face. "You coward," she cried, trembling so she could not control her voice. "If you ever dare use that word before me again, I'll horsewhip you. Go to Henry de Spain's face, you skulker, and say that if you dare."

"Put down that quirt, Nan," yelled her uncle.

"I won't put it down," she exclaimed defiantly. "And he will get a good lashing with it if he says one more word about Henry de Spain."

"Put down that quirt, I tell you," thundered her uncle.

She whirled. "I won't put it down. This hulking bully! I know him better than you do." She pointed a quivering finger at he cousin. "He insulted me as violently as he could only a few months ago on Music Mountain. And if this very same Henry de Spain hadn't happened to be there to protect me, you would have found me dead next morning by my own hand. Do you understand?" she cried, panting and furious. "That's what he is!"

Her uncle tried to break in. "Stop!" she exclaimed, pointing at Gale. "He never told you that, did he?"

"No; nor you either," snapped Duke hoarsely.

"I didn't tell you," retorted Nan, "because I've been trying to live with you here in peace among these thieves and cutthroats, and not keep you stirred up all the time. And Henry de Spain faced this big coward and protected me from him with an empty revolver! What business of yours is it whom I meet, or where I go?" raining her words with flaming eyes on her belligerent cousin. "I will never marry you to save you from the hangman. Now leave this house." She stamped her foot. "Leave this house, and never come into it again!"

Gale, beside himself with rage, stood his ground. He poured all that he safely could of abuse on Nan's own head. She had appeased her wrath and made no attempt to retort, only looking at him with white face and burning eyes as she breathed defiance. Duke interfered. "Get out!" he said to Gale harshly. "I'll take care of her. Go home!"

Not ceasing to mutter threats. Gale picked up his hat and stamped out of the house, slamming the doors. Duke, exhausted by the quarrel, sat down, eyeing his niece. "Now what does this mean?" he demanded hoarsely.

She tried to tell him honestly and frankly all that her acquaintance with de Spain did mean—dwelling no more than was necessary on its beginning, but concealing nothing of its development and consequences, nothing of her love for de Spain, nor of his for her. But no part of what she could say on any point she urged softened her uncle's face. His square hard jaw from beginning to end looked like stone.

"So he's your lover?" he said harshly when she had done.

"He wants to be your friend," returned Nan, determined not to give up.

Duke looked at her uncompromisingly: "That man can't ever be any friend of mine—understand that! He can't ever marry you. If he ever tries to, so help me God, I'll kill him if I hang for it. I know his game. I know what he wants. He doesn't care a pinch of snuff about you. He thinks he can hit me a blow by getting you away from me."

"Nothing could be further from the truth," exclaimed Nan hopelessly.

Duke struck the table a smashing blow with his fist. "I'll show Mr. de Spain and his friends where they get off."

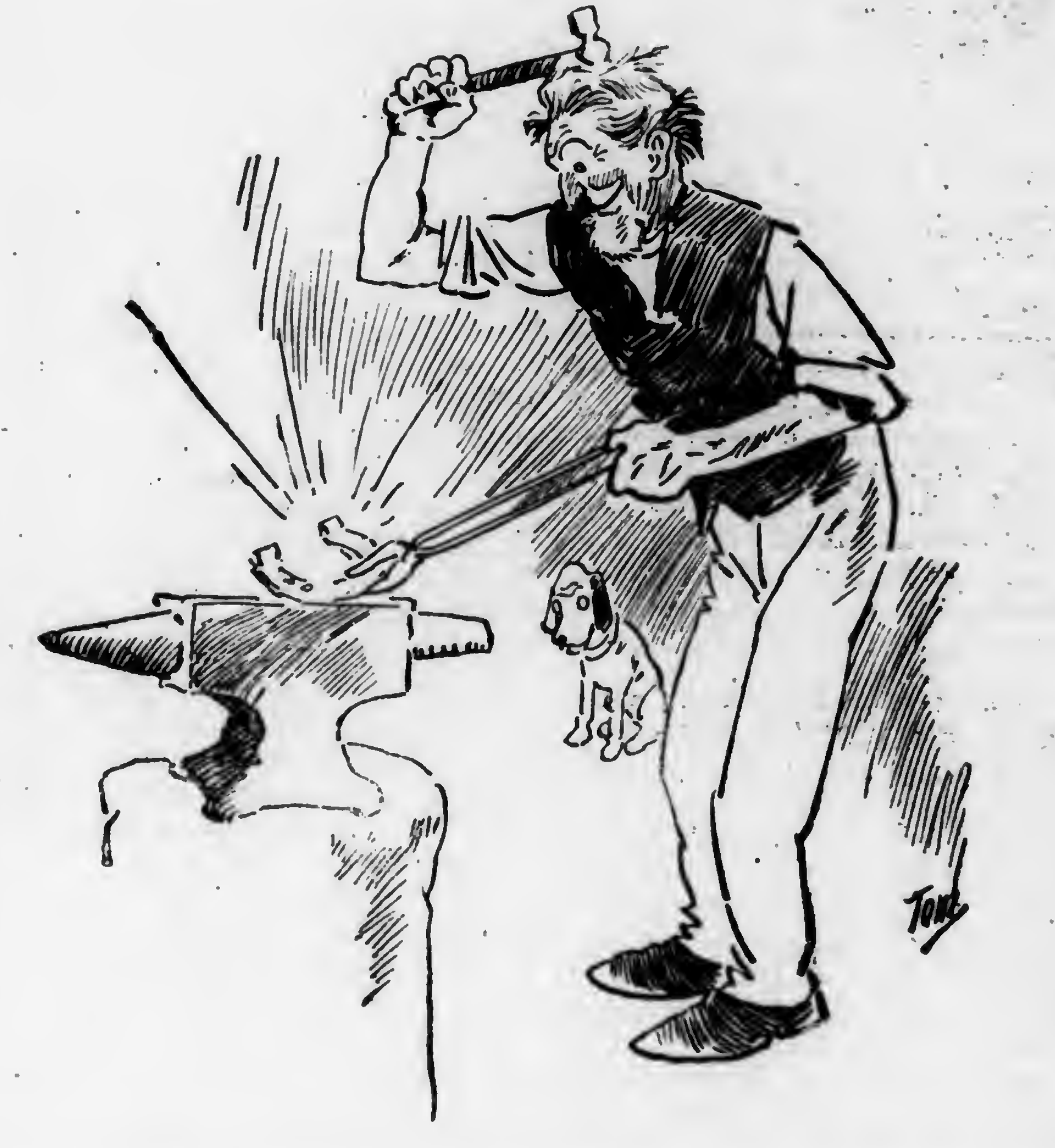
"Uncle Duke, if you won't listen to reason, you must listen to sense. Think of what a position you put me in. I love you for all your care of me. I love him for his affection of me—because he knows how to treat a woman. I know he wouldn't harm a hair on your head, for my sake. yet you talk now of bloodshed between you two. I know what your words mean—that one of you, or both of you are to be killed for a senseless fued. He will not stand up and let any man shoot him down without resistance. If you lay your blood on his head, you know it would put a stain between him and me that never could be washed out as long as we lived. If you kill him I could never stay here with you. His blood would cry out every day and night against you."

Duke's violent finger shot out at her. "And you're the gal I took from your mammy and promised to bring up a decent woman. You've got none o' her blood in you—not a drop. You're the brat of that damned, mincing brother of mine, that was always riding horseback and showing off in town while I was weeding the tobacco-beds."

Nan had never been permitted to forget that her unfortunate father was not loved by this forceful uncle. She had often dreamed of what her life might have been had her peace-loving and quiet-mannered father lived to direct her life. She had longed for the sort of life he would have preferred but every teaching of her uncle had been toward their mountain existence which she was beginning to detest.

Nan clasped her hands. "Don't blame me because I'm your brother's child. Blame me because I'm a woman, because I have a heart, because I want to live and see you live, and to see you live in peace instead of what we do live in—suspicion, distrust, feuds, alarms, and worse. I'm not ungrateful, as you plainly say I am. I want you to get out of what you are in here—I want you to be out of it. I'd rather be dead now than to live and die in it. And what is this anger all for? Nothing. He offers you his friendship—" She could speak no further. Her uncle with a curse left her alone. When she arose in the early morning he had already gone away.

(To Be Continued.)



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The extreme shortage of potash in connection with the war demand for large farm crops will force the United States to use every other possible element of fertilizer. Our most available supply is phosphate rock. A few years ago the known deposits of phosphate rock were recognized as nearing the end, the total supply in Florida, Tennessee, and South Carolina being estimated only sufficient to last a comparatively few years. Since that time the greatest deposits in the world have been discovered in the Rocky Mountain States and altho the tonnage computations by the United States Geological Survey are by no means completed, already many billions of tons have been blocked out—a supply sufficient to last the United States for a great many generations. In spite of these rich deposits, however, they yield less than one percent of the amount annually mined. This is due to two facts. Western land is as a rule very fertile and not much fertilizer is used, and eastern lands which require artificial fertilization are so far away that the freight rates have been considered prohibitive. With the present war conditions, however, requiring that every acre under cultivation should be stimulated to yield its utmost, it may be recognized as a simple business necessity for the government to provide for the mining, and to require the hauling of this western phosphate for the eastern farm lands, especially the great producing areas of the Mississippi Valley. Almost all of these great western phosphate deposits are upon government land—a prime fertilizer actually owned by the people. Germany, before the war, was a heavy user of American phosphate and were she to discover such deposits as America has, it cannot be doubted that she would immediately mine them by the millions of tons.

Rats and Mice.—Farmers' Bulletion No. 896, of the U. S. Dept. of Agriculture, discusses losses by and methods of combatting rats and mice. The discussion covers destructive habits of these rodents, protection of food and other stores, destroying rats and mice, organized efforts and important repressive measures. In summary of discussion the bulletin says: The rat is the worst animal pest in the world. From its home among filth it visits the dwellings and storerooms to pollute and destroy human food. It carries bubonic plague and many other diseases fatal to man and has been responsible for more untimely deaths among human beings than all the wars of history. In the United States, rats and mice destroy crops and other property each year valued at over $200,000,000. This destruction is equivalent to the gross earnings of an army of over 200,000 men. On many a farm, if the grain eaten and destroyed by rats and mice could be sold, the proceeds would more than pay all the farmer's taxes. The common brown rat breeds 6 to 10 times a year and produces on an average 10 young to a litter. Young females breed when only three or four months old. At this rate a pair of rats, breeding uninterruptedly and without deaths, would at the end of three years (18 generations) be increased to over 259 million individuals. Methods of destruction described include traps, poisons, domestic animals, fumigation, rat viruses and natural enemies. The bulletin is free from the above department, Washington, D. C.

Killing Hogs and Curing Pork.—This is the title of Farmers' Bulletin No. 913, just issued by the U. S. Department of Agriculture, Washington, D. C. The Bulletin takes the farm butcher step by step thru the processes of slaughtering, cutting up the carcass, lard making, curing, sausage making and smoking. The bulletin is free upon request addressed to the above Department.

Take care of the farm implements. The vigors of winter are particularly hard on machinery. To let it rust is unpatriotic and extravagant.

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Veterinary

Periodic Ophthalmia.—I have a four-year-old stallion that is nearly blind in one eye and the other eye seems to be affected. Our local veterinarian is inclined to believe that blood-letting will help him. Let me have your advice how to treat him. B. L. R., Corning, N. Y.—I fail to understand how blood-letting would in any way benefit your stallion. You had better discourage your veterinarian from doing it as blood-letting is a rather ancient treatment. Give him 30 grains of potassium iodine, 40 drops of fluid extract nux vomica and two drams of Fowler's solution of arsenic at a dose in feed or drinking water, three times a day.

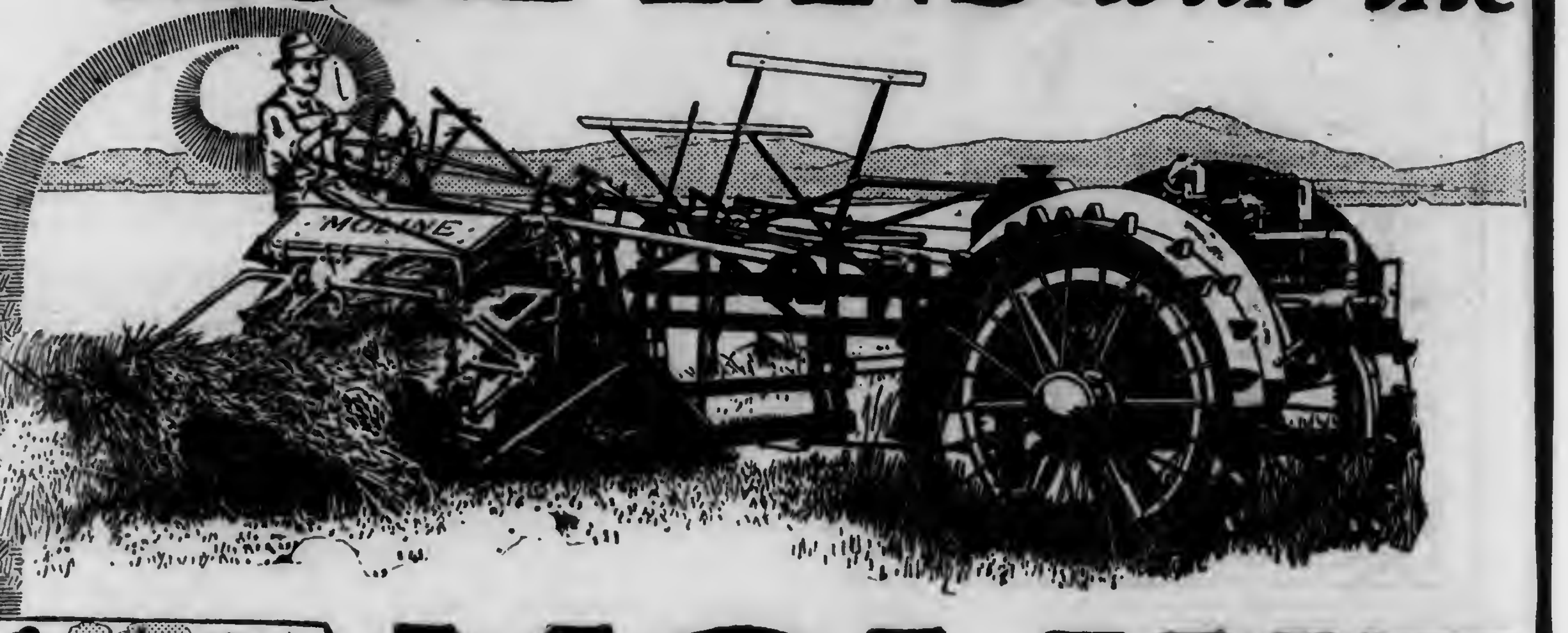
Side-bone.—We have a two-year-old draft colt that is showing some lameness in her left foreleg. The only bunch I can find on leg is low down at heel on inside quarter. A neighbor of mine who looked him over tells me that he has side-bone, which is perhaps true. When first taken out of the stable he shows some lameness, but after walking a hundred yards or more he trots sound. I am very anxious to have him cured. I might add that there is no swelling or inflammation in any part of the forequarter that I can find. C. S. K., Fetterville, Pa.—If you will paint bunch with tincture iodine daily for a week or ten days, you will perhaps succeed in relieving him of his lameness. Or apply one part iodine and nine parts fresh lard, every two days.

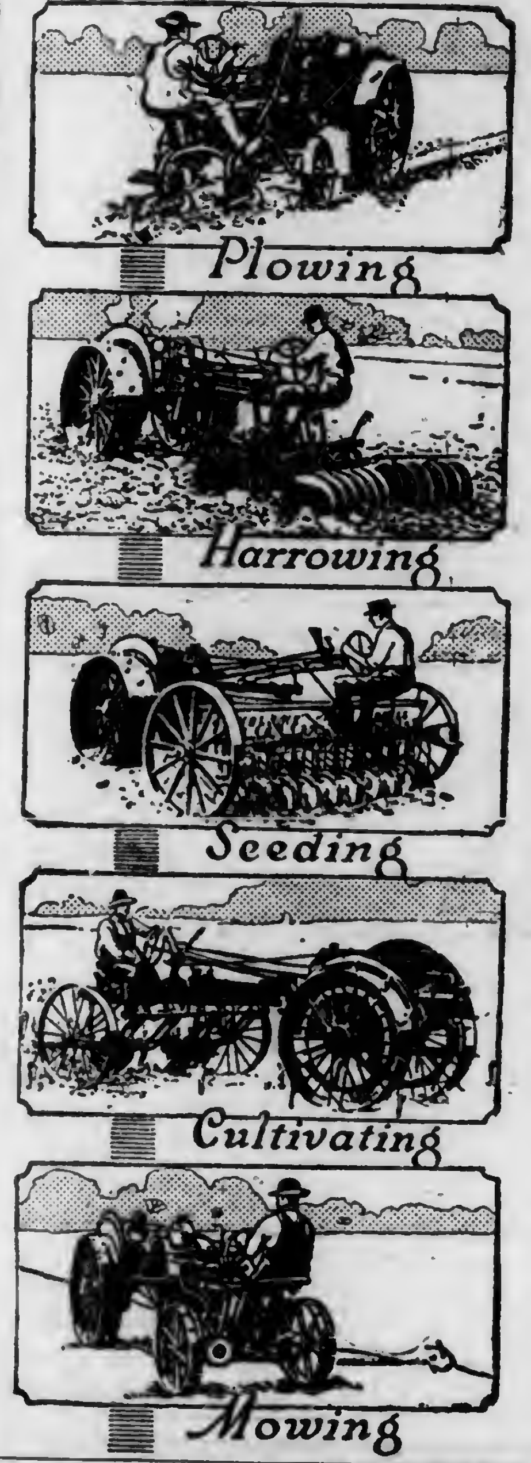
Low Down Lameness.—One of my horses has been lame for the past two weeks. Our local veterinarian is undecided whether it is in joint within foot, in pastern or fetlock. What had I better apply? S. M., Calicoon, N. Y.—Give him absolute rest and apply one part tincture iodine and two parts camphorated oil to lower part of leg twice daily. A bone may be fractured. If so, he will be slow in recovering, and a plaster cast may be applied.

Light Milker.—I have a valuable cow which we milked close up to calving time. Last year she gave up 45 lbs. daily. Since calving she gives only one quart daily, but shows no symptoms of sickness. What can be done to increase her milk flow? Reader.—She should be kept in a warm stable, fed plenty silage and roots, or other milk-producing feed. Her udder should be gently hand rubbed three times daily. Rather poor results will follow giving her drugs. She should have been dried six weeks before coming fresh.

Chronic Lymphangitis.—During the summer and fall my six-year-old horse has been troubled with an inflamed leg, but it never broke open. The leg is now thickened as high up as stifle joint, but so far as I can tell it is causing no lameness and he seems to be in good health. This thickened condition of the leg depreciates his market value and in the present condition I could not get within fifty dollars as much for him as if his hind legs were both alike. L. G. W., Moylan, Pa.—You will never succeed in reducing his leg to normal size. It is well to keep in mind that a horse which has suffered from several mild attacks of lymphangitis should be regularly exercised, fed but little grain when idle, the bowels kept open, the stable well pplied with fresh air. You will ain some benefit by giving the horse 0 grain doses of potassium iodide in feed or drinking water, two or three times a day.

Irritation of Throat—Grease Heel.—I have a five-year-old mare that has slight cough which affects her in morning, but very little at any other time. She seems to be in good health, but her coat is rough. I have another horse troubled with grease heel; the sores discharging pus. F. S. E., East Freedom, N. Y.—Give your mare ½ oz. powdered licerice and ¼ oz. ginger in damp feed, twice daily. Apply equal parts powdered alum, oxide zinc and boric acid to sores, twice a day. Give other horse ¼ oz. Donovan's solution of arsenic at dose in either feed or drinking water, three times daily. Keep the heels dry and clean.





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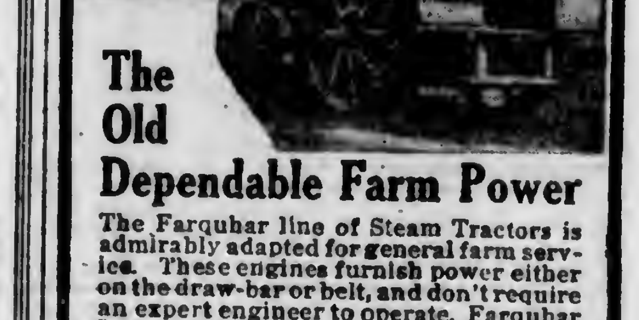

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Vol. 43—No. 2. PHILADELPHIA, PA., SATURDAY, JANUARY 12, 1918. 75 Cents per Year

Getting at the Facts in Dairying

Records Save Time, Labor and Feed and Lay the Foundation for Future Breeding

By PAUL T. MENZEL
HUNT COUNTY, DELAWARE

The dairyman's primary problem is well summed up in the statement of a leading dairy authority, thus: "The price the farmer is to receive is far beyond him so long as the market is governed by forces and conditions over which he has but slight if any control. But a penny saved in cost is just as good as a penny gained in price". Farmers are now exercising greater influence over the sale of milk than ever before, and may they continue. But the problem of saving on the cost will always be with them, and they can scarcely overdo it. Every effort for food production and conservation touches on this problem of saving on the cost. Such saving presupposes a knowledge of the items that enter into the cost, and no institution will give the dairyman the unbiased figures as will a well-conducted cow-testing association.

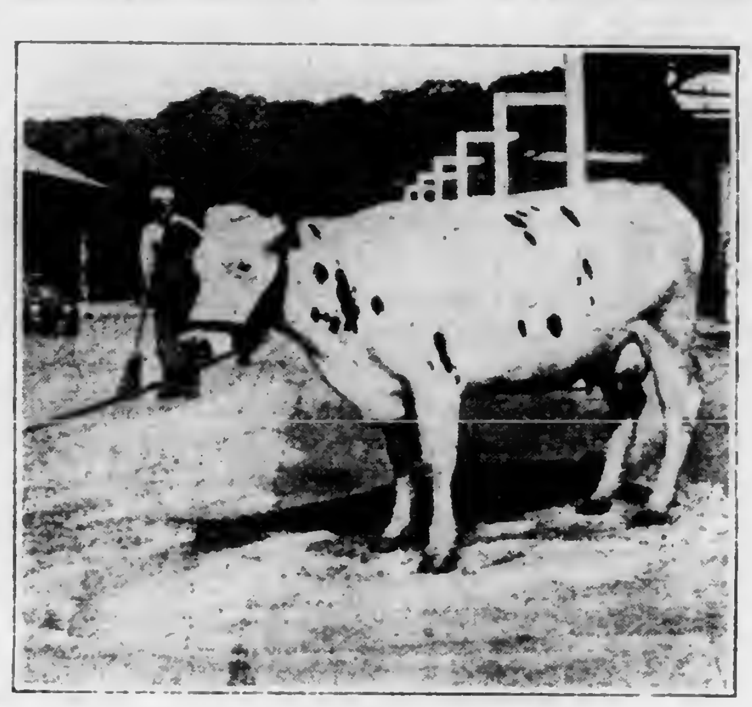
Waste of Time and Feed

An exhibit at the Minnesota State Fair showed that a certain dairyman wasted two hours a day by milking a herd of 30 cows, which resulted in a total loss of $59 for the year. If he had selected the 15 best cows of his herd and sold the rest he could have had a profit of $69 for the year, besides the interest on the money secured, and the saving of two valuable hours. Such an example is typical of thousands of herds. Prof. Fraser in a booklet entitled "Uncle Sam's Three Herds of Dairy Cattle" says that the American population on farms keep three herds of cattle; each herd contains seven million head and occupying a farm the size of the state of Illinois. One of these herds lacks $50,000,000 annually of paying for its keep. Another of equal size makes a moderate profit of $7.85 per cow, but the third herd of the 7,000,000 high producing cows makes the splendid but not extraordinary profit of $26.89 per head, or $787,000,000 annually.

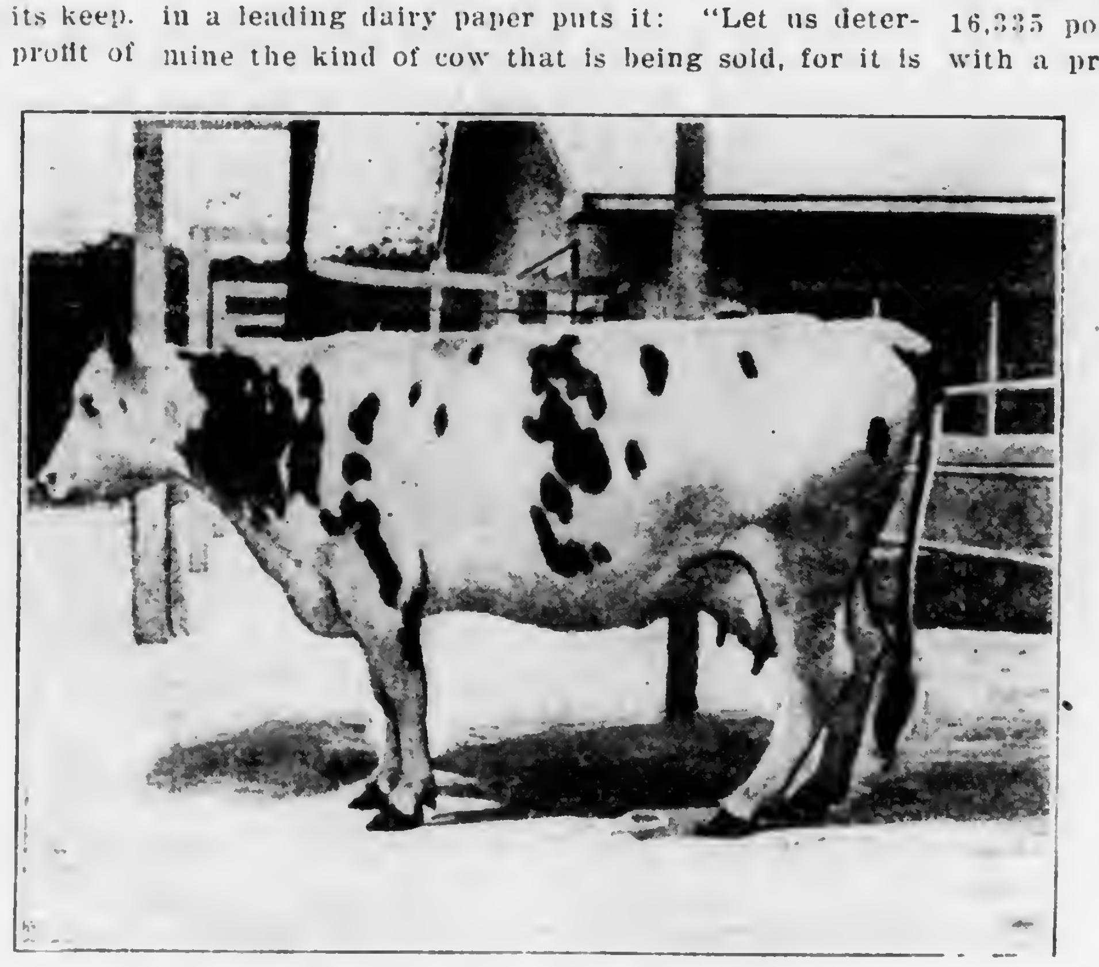
These figures are not guess-work, but are based upon actual census taken and accurate records kept. Therefore, $50,000,000 worth of feed are being wasted annually by the first herd and several hours a day on a large majority of farms are being taken from profitable crop production. Those who own part of the first herd may take the optimistic view of the Irishman who bought a pig for $7.50 and sold it for $17.50 after it had cost him $10.50 for feed. When reminded that the transaction was not very profitable, he remarked that he "had had the use of the pig in the meanwhile." Perhaps there are those who would like to feed and milk the first herd for the use of them, but if such men have no interests in profit, they should at least respond to the need of our country in its present trials and help to assist in eliminating the labor and feed wasted on the unprofitable 7,000,000 boarders. These would be the logical source of a deficient meat supply and it would be a patriotic duty to detect and eliminate them.

Beef the Unprofitable Cows

From time to time alarming articles have appeared, stating that a high percentage of dairy cattle have been sold for beef. A recent editorial in a leading dairy paper puts it: "Let us determine the kind of cow that is being sold, for it is economy to sell the unprofitable ones. We have no surplus labor or feed to waste upon that kind of a cow. In no instance do we find that cows are being sold to an alarming extent, and data from cow testing associations show that only unprofitable cows are being sold. This shows a healthy growth and that the farmer is improving his cattle."



A Two-Year-Old That Gave 17,859.3 Lbs. Milk and 737.08 Lbs. Butterfat



Another Two-Year-Old That Gave 12,848.1 Lbs. Milk and 455.79 Lbs. Butterfat

A recent report by all the county agents of Pennsylvania shows that dairy cattle are not being sold for beef to any great extent, and those that have been sold were of poor quality. A similar census of New York shows that state to have 40,000 cows more than last year.

Which Are Profit Makers?

The first step must be for every herd owner to determine to which of the three herds his cows belong and send the unprofitable ones to the butcher's shambles. The question then is how to detect the poor individuals. There are some who claim that they can judge the productive ability of a cow by her appearance. Not only is this impossible, but no man can estimate the yearly production of a cow within his own herd within 1,000 pounds, even if he milks her himself. At the Illinois State Fair two cows were on exhibit for the purpose of having visitors pick the better of the two. The cow that was invariably picked for the better produced 3,778 pounds of milk and 197 pounds of fat in a year, and the supposedly poor cow had a record of 9,138 pounds of milk and 413 pounds of fat.

Exhibits at nearly all State Fairs showed similar results. The most striking example was a cow that had been sold for $40 by a man who did not believe in record keeping. Her present owner put her on test and is proud of her record of 16,335 pounds of milk and 691.7 pounds of fat, with a profit of $198.12 above feed cost, which makes her better than 40,700 cows of Wisconsin of which records had been kept.

Van Pelt, the famous dairy cattle judge, says that the scales and the Babcock tester are the only reliable judge of the dairy cow.

Prof. Wing, of Cornell, whose judgment is held in high regard by the most successful breeders of pure-bred cattle states: "No great progress in the improvement of dairy breeds of cattle took place in this country until breeders began to base selections upon authenticated records and it is not necessary to call attention to the progress that has been made along this line since such records were inaugurated about 25 years ago"; and further, "a study of the conformation of all great producing animals shows that while they conform reasonably well to the ideal, they show great diversity of type and do not rank very high from show yard standard." All great judges of dairy cattle agree with Prof. Wing and a study of a large herd of good cattle on which records are kept would invariably bear out this opinion.

(Continued on Page 10.)

Farm Home of J. W. Kearns, Mifflin Co., Pa., Has Steam Heat In House and Acetylene Lights In House and Barn

City Chances Compared With the Farm

Some Questions Farm Boys Frequently Overlook---By L. Wyne Arny

One of the most vital questions relating to American methods has been the tendency for farm labor to emigrate to the larger centers of population. This has seemed at times to be a serious obstacle in the way of better farming, since not only has much hired labor left the farm for the factory, but also in many cases farmers' sons have been lured away by the glamor of the city. In far too many cases the farms are under-manned and any effort which may be made to make the farm worker more satisfied with his lot will be well worth while. Theer are certain well recognized economic principles which explain the desire for city life and it is a full recognition of these that will help in solving the problem.

It must not be supposed that a desire for a change in his mode of living is restricted to the farmer, for in our cities and towns are to be found many men who want to move into the country and own a farm. In many cases these men do actually buy farms and operate them. Their condition on the farm is, however, somewhat different from that of the farmer since they usually retain their business connections and are thus not financially dependent upon the soil. There is no doubt but that many farm workers who have moved from the land would have been quite contented to stay under the conditions which the city man operates his farm; and this being true, then the discontent usually found in such cases comes not from the farm itself, but from the lack of finances from which the farm probably suffers. In other words, if the farmer had more money he would be more satisfied, and be less ready to leave conditions which otherwise he finds satisfactory.

Farming is not a business which can be expected to yield large financial returns, or one which makes fortunes; altho there are farms which yield a very satisfactory interest on the investment, more than the average city business. Therefore, the man who expects to become rich from his farm will probably be disappointed and will be tempted to join the deserters who search for a source of wealth in the city.

The farmer who figures his finance in such a manner makes two main mistakes. He assumes that his labors would have a greater earning capacity in the city than they do in the country, and he fails to properly appraise the worth of the farm. The average city worker who is skilled in his particular trade to the same degree that the farmer is in his, can earn probably $18 per week. If he happens to have a family he will find difficulty in renting a livable house for less than $20 per month. Even if he had no children he could not hope to pay his store bills for less than $10 per week, which leaves clothing, incidentals, savings, etc., to be paid out of the surplus of $8 weekly, which, in these times, would require most skillful financing to make sufficient for any degree of comfort. And yet, it is into such conditions that the farmer usually plunges after he moves into the city, altho that side of city life is least often taken into consideration before making the change.

The process of reasoning which is more appealing is that which considers only the opportunities to be found in the city. Nearly every farmer achieved great success by his own efforts. And while such examples are always stimulating, business sense should dictate the more sane attitude of computing the chances of such a progressive career against the wearing grind from which by far the larger number of men never escape. Competition in industrial life in the city is becoming more and more keen so that unless a man has unusual influence which will help him to secure promotion in his work, he must rely on marked ability to meet the competition successfully. Comparatively few men have such ability as shown by the large number of financial failures which are annually reported from our cities. Of the numerous enterprises which are floated every year, only a minority ever reach a profitable stage and it has been computed that the average life of remunerative production for even our large corporations is only about 20 years.

The fact that so many of our most prominent business men, financiers and others who have made a marked success in industrialism have originally come from the farm has lead others to believe that there must be some feature about a farm training which makes for later success in industrial work. But the changes which economic conditions have undergone in recent years must be considered in this regard. If those same successful men were to take their positions as office boy and clerk today, it is very questionable whether they would again accomplish the results which they did 20 years ago. This is not because the standards of ability have changed, but because of the tendency towards specialization in all lines of industry. A man who has made himself proficient in a particular line of industrial work can be kept in that position more economically than to have him promoted and another man broken into the same work. Hence the drift of policy has been toward the establishment of systems in which each man does his particular thing and continues to do it as long as he is in the employ of the company. The young men who hold positions of responsibility, in the large majority of cases, are men who are particularly fitted for their positions by reason of special training, rather than those who have come up thru the ranks.

It is evident, then, where the farmer would be classified under such a system. He would come to the city with no more recommendation than robust health would give him; entirely unfitted for industrial responsibility and would, of necessity, take his place among the millions of workers who soon lose their identity under the pressure of the continual grind. Is it worth while? Has the city anything to offer which will justify a man for so sacrificing himself?

As has before been said, the cause for discontent on the farm is mainly due to lack of cash returns. There are other factors, however, which compensate for this deficiency and which are generally overlooked. The farmer may provide food for himself and family at very little cash outlay, his groceries being the only food articles which he is forced to purchase. He furthermore has his house upon which he pays no rent. These represent a cash equivalent of about $800 per year and if his crops bring him in a return of $400 after his taxes, depreciation, interest, etc., have been deducted, his position will be stronger than that of his city brother who receives $1200 annually, and does not have other advantages which the farm affords.

Let the man operate his farm as a business, so that it will provide for him comfortably altho not luxuriously; the healthfulness of his occupation, the clean, wholesome environments which surround his family, the freedom from bosses and landlords and the stimulating influence of the soil itself, all commend the farm to him as a sane and rational place in which to live.

With the sons and daughters, however, the problem is somewhat different. They cannot be expected to weigh the advantages and disadvantages with mature judgment, for the city is very alluring. It is within their just rights to expect certain advantages and pleasures and if these are not to be had on the farm, the tendency to seek them elsewhere is logical. This condition has been overcome in many ways. Properly balancing play and work, giving the children an actual interest in the farm for the work that they will perform, providing them with enough money so that they may have some small funds to look upon as their own, teaching them to observe and appreciate the wonderful things which nature has placed around them, so that farming will mean something more than drudgery, are all ways in which their interest may be centered on the farm. If, however, a boy knows nothing but hard grinding work and is then even not compensated for it, he would be lacking in pluck if he did remain under such conditions. Let the farmer so train his son that he will learn that there is not much in the city that is really worth while that is not to be found on the farm.

Farm Home of John M. Murphy, Monmouth Co., N. J.

What Shall We Do To Be Fed?

Pertinent Comments on the Question of Production

There is needed by the government, iron and steel and fire-brick and supplies of various manufactured articles, and munitions for the armies. How are these things being secured? By giving the mills and factories preference in receiving supplies of raw material, and their products preference over other traffic. Their labor is protected by the fact that they are allowed a good percentage of profit over and above the cost of raw material, labor, and all other expenses. Thus, when they are in need of men they are sure to get them because they are enabled to pay a price that will draw the most efficient ones from other industries, especially from Agriculture, which they have done by the thousands.

The draft regulations also give them special preference. These are facts that anyone who reads may know. But now the call is for food for our people and our armies. Workers cannot labor with empty stomachs. Soldiers cannot fight while they are hungry. All the heart goes out of a people if they are poorly fed.

There is a sugar shortage in spite of the thousands of acres adapted to the raising of cane and the millions of acres on which sugar beets and sorgum could be grown, not to mention the syrup and sugar possibilities of the thousands of maple trees of the middle and eastern states. If producers of sugar and syrup materials were assured of a market and were guaranteed a percentage of profit above cost, including labor, and were assured of receiving supplies and shipping facilities, and were given sufficient labor protection by the draft laws, there need be no sugar shortage next year.

There is a wheat shortage and a meat shortage and a milk shortage and other shortages of food and feed products looming up in the future, but no shortage in the proclamation and advice markets.

The farmers are ordered to cease combining, are asked to be patriotic, are called half-farmers by a high state official; scolded for not getting up earlier and working later; are entreated, cajoled, threatened and patted on the back by turns to keep us busy. But all the while our sugar, grain, meat, milk, fruit, vegetables, eggs and poultry are made the basis of profiteering by thousands of men who should be engaged in some productive industry but who have grown rich and powerful for simply controlling products that have required the thought and sweat and actual privation of millions of farmers and their wives and children to plant and grow and harvest and send to market. I am not quite prepared to say that the methods best for all the people are being used in stimulating the production of iron and steel and munitions and supplies for the army. That it is effective in stimulating production no one can deny, however.

Now, we are all beginning to see that food and the other basic products of the earth are the prime essentials without which we can accomplish nothing. A world food famine in 18 months is the prediction of an economist of wide experience. And so if we are to go on and win the war, feeding ourselves and our allies too, prompt, very prompt, and effective methods must be taken to put Agriculture on an effective basis.

No industry of the many in this country has been put upon a 100 percent basis except by putting it upon a sure financial footing. Farmers are human, like other people, and their sons and daughters who make such good material to add lustre and fame and riches to our cities, must be given assurance that they can have equal opportunities at home on the farms, or they will not stay there, and the world will still grow hungrier day by day.

In the face of figures put out by the National Agricultural Department showing a farm production in 1917 of $21,000,000,000, this may seem grouchy. This was a decided increase in value over last year, but so was the cost of production an increase over last year. We must sometimes look at the reverse side of the picture to see the truth and prepare for the future. Thousands, millions of farmers and their families made extra efforts last year, and yet a majority of them know that it will be impossible to duplicate last year's crops the coming season unless the unexpected happens.

In the eastern states at least, stock is being reduced to make the feed last. Labor shortage made it impossible to seed as much fall grain as intended, or to do it seasonably, or carefully. Much fall plowing had to be omitted. This will add to spring work. Tree pruning is left undone. Winter planning for next season's work is necessarily wavering and uncertain because, first, the farmer or his sons may be called to the army either before spring or during the season; or, second, they may decide, as some I know are doing, that it is better to give up the farm and go to work for some company where hours are short and wages high; third, those who would like to work their farms to their full capacity (and I am sure this is the patriotic wish of the majority of farmers) are met by the additional difficulties of securing efficient hired labor at a price that they dare pay and in supply that will insure carrying the work thru harvest time, and by the high cost and delays in securing machinery, tools, fertilizers and other supplies.

The American farmer is the most efficient in the world in food production at a minimum cost in labor and investment. But his crops are necessarily subject to seasonal uncertainties beyond removal. Give him the position of financial assurance that he needs—sure that he will get as good a return for labor and investment as his brother American gets at other business and he will feed the world and do it easily.

Let the men who are spending restless days and sleepless nights over the food problem put in a few hours figuring up the value of a farmer's investment and its depreciation, the value of the hours at current wages, that he and his family labor in a year, adding, as is done in any factory, something for oversight and management, and on such a basis compute the cost of farm products, and let farm prices be based upon the result. On this let there be guaranteed as fair a percentage of profit as other industries get. Do this, and practically all of our food worries may be cut out for the coming year.—T. L. Wall.

EDITORS' NOTE

We present on this page two articles dealing with the serious and vexing problems of farm labor and production—the latter depending so largely upon the former. The first article is written by a farmer and presents the farmer's idea of economic justice and business principles. The other article is condensed from an article received from Secretary of Agriculture Houston and presents a plan for solving the farm labor problem by other than ordinary and natural business methods—officially directing and advising from the outside. Which is the more logical? We ask your opinions, expressed briefly.

Solving the Farm Labor Problem

Comments and Suggestions by Secretary D. F. Houston

The farm labor problem has presented and continues to present many difficulties. It is sufficiently difficult without the added complications which arise from the unrest and apprehension created by the utterances and writings of misinformed and, in some instances, of mischievous persons. Not a few statements are being made which not only are not conducive to a satisfactory solution but which, on the contrary, are responsible for additional unrest and misdirection of effort.

This is one of two or three subjects to which the Department has given more thought than to any others, not only since this country entered the war but for many months prior to that time. There has been before the farmers the question of retaining a sufficient number of year-round skilled laborers and also of meeting the urgent needs at the planting and havesting periods. In very many sections of the Union difficulties in both directions have been experienced. This has has been particularly true of communities where there has been great industrial activity incident to preparations for the army and Navy. Farmers in the neighborhood of cities where there has been great redirection of labor and capital, and also where the cantonments and other special enterprises have been under way, have been greatly embarrassed. In some respects, the situation may not be so acute another year. Naturally, the disturbances are much more violent immediately after a great shock has been given the industrial system. This Nation had been organized on a peace basis. When it entered the war, it was necessary not only to create vast additional facilities and machinery, but also to provide on an enormous scale for the operation of new establments and of those previously existing. However, it is well to recognize that the situation will continue to be difficult and that a satisfactory solution will require the best thought of the Nation and the fullest and most complete co-operation of all agencies. Even under the pressure of the first draft, the War Department held definitely in mind the thought of lightening the burden so far as possible by not calling to the colors those essential for leadership and direction. With the fuller time at its disposal, that department, which has recognized from the beginnig the necessity of not unduly disturbing any essential industry, has worked out a system of classification of the men subject to the draft which contemplates the placing of skilled farm labor engaged in necessary agricultural enterprises in class two, assistant or associate managers of necessary agricultural enterprise in class three, and heads of necessary agricultural enterprises in class four. The operation of this new arrangement should remove many of the difficulties previously encountered and, in reasonable measure, meet the demands of the situation.

The most promising lines of effort seem to me to embrace the following:

First. A systematic survey of the farm labor situation in order to ascertain the possible needs of farmers and to determine ways of meeting them. The department, before the beginning of the next crop season, thru its agents stationed in the various states and in co-operation with the Department of Labor and state councils of defense, will meet such a survey.

Second. The promotion of fuller co-operation in the utilization of labor among farmers in the same community.

Third. The further development of machinery for assisting in the transfer of labor from sections where the seasonal pressure has passed to regions where additional help is urgently needed.

Fourth. Making available labor which heretofore has not been fully or regularly utilized in farming operations, including boys of high school age who have had experience on the farm.

(Continued on Page 13.)

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Start Farm Accounts Now

In addition to the personal need for every farmer to keep a system of accounts, which by the way may be very simple, there are now many other reasons why he should keep them. Every year it is necessary to prove something for the public's information in regard to farm prices, profits and products. Past experience has shown that the more accurately the farmer can show these things the better his business is understood and the more readily the public acknowledges his rights. Still another reason why he should (we may even say must) keep accounts now is the requirement of the income tax law. The farmer whose income is subject to tax will find the task of filling out the blanks a much easier job than when everything must be estimated at the end of the year. The farmer whose income is not great enough, or perhaps falls just a little short, can prove his position much more quickly and satisfactorily should he be called upon to do so. There is every reason why every farmer should keep an accurate record of his farming operations, and none at all why he should not. Now is a good time to start.

* * *

"Keep on the Sunny Side"

We wonder sometimes from what we see and hear whether there is not some danger of some of our people developing a grouch under present circumstances. There is no denying the fact that conditions as they are and will be add much to the difficulties of farming. But the same thing is true in every other line of business. It is a time of difficulties all around, but that makes it all the more necessary to make strenuous endeavor to keep sweet and hence maintain the maximum ability to do. This is not intended to minimize the unsatisfactory condition of affairs, but rather an appeal that we may realize the fact that fussing only makes it worse at a time when the best possible is expected and necessary from everyone.

It is not patriotic nor good business sense for a man to say he will do absolutely nothing on his farm or in his factory because he cannot run it the same way or as extensively as formerly. There is always before us the duty of each one's doing the best he can, and of adapting himself to meet changing conditions, and the duty never rested so heavily upon all as now. It is not sufficient excuse for us that somebody else is a slacker, or is discouraged, or is pouting and balks in a crucial time. Our duty is to make the best of the circumstances even while using our best efforts to correct wrong and error. The old saying was, "Grin and bear it." If the newer one, "Keep on the sunny side" sounds better to you, use it and sing it, if your neighbors will let you, from morning till night. The sentiment in the fine old song, "Paddle Your Own Canoe," is pertinent now:

"When things don't go to suit you,
And the world seems upside down,
Don't waste your time in fretting,
But drive away that frown.
Since life is oft perplexing,
'Tis much the wisest plan
To bear all trials bravely,
And smile when e'er you can."

* * *

The Waterpower Grab Again

For the past two or three years we have been urging our readers to use their influence upon their representatives in Congress to prevent the long continued efforts of the interests to put thru the waterpower grab bill. One of the first things introduced and passed in the Senate at the present session was the iniquitous Shields bill—the one that failed of passage last session, thanks to the efforts of Gifford Pinchot and others. This was made possible by its sponsors taking advantage of President Wilson's recommendation to pass laws making the immense water power of the country available. The Secretary of Agriculture, together with Newton D. Baker and Franklin K. Lane, were preparing a bill which we may assume would foster the honest development of the waterpower, but those who have monopolistic ambitions got busy at the earliest possible moment with their bill and rushed it thru. However, it will probably have hard sledding before it passes finally, especially if the people get after their representatives.

Some may wonder what interest farmers have in this matter since it is so far removed from their business. But is it so far removed? Will not the future see every business still more dependent upon the sources from which power is derived? Every business, every home, must have the products of the factory, and heat and light as well. The source of these in the past and at the present is chiefly coal and natural gas. These natural resources are naturally and gradually becoming scarcer and higher; besides, they are controlled by those having absolute and indeterminate possession.

Water power is a cheap and comparatively permanent source of power. It is well distributed thruout the country. It can, by turning it into electricity, be conveyed to almost any place in any quantity desired. It is possible to so develop it that all our homes, farms and factories may have cheap heat, light and power at any time by the simple turning of a switch or the pressing of a button. The government has millions of horsepower in the rivers and streams in its possession. Shall it turn it over absolutely to private ownership for exploitation and the formation of perpetual monopoly to which the people shall pay tribute forever?

Even if it is not considered expedient to have the government develop the waterpower of the nation, it is desirable that the government should retain title to it and have power to regulate its development, distribution and profits. Private enterprise may very properly be allowed to develop it and be assured of a reasonable return but it should not have title giving absolute ownership, and this is what the Shields bill proposes.

* * *

"Uneconomic Arrangements"

In making an appeal for greater wool production, the U. S. Department of Agriculture points out an "uneconomical arrangement" which has become rather familiar to farmers. In tracing the decline of the sheep business in this country the report says: "We had gotten into the habit of using a great deal more wool than we produced. We'd just send over to Australia or South America or perhaps somewhere in Asia and get what we needed. But the ship shortage now interferes with this uneconomic arrangement. Present war necessities will teach us the lesson we would have had to learn at some time—to establish sheep production permanently as a part of general American agriculture."

There is an old, familiar political argument in this statement that is not worth discussing at this time. The economic phase is more timely. Wool production declined primarily because it did not pay to raise sheep. Other farm production declines for the same reason. In the effort to reestablish declining industries or to build up those most needed now and in the early future, economic arrangements must be carefully considered. Farmers must be returned a price that will pay the cost of production and a reasonable profit or they can not meet the demands of the present or the future. No one produces and sells seeds, fertilizers, machinery, groceries for and to the farmers simply because the farmers need these commodities. Neither can the farmer produce food products at a loss for any considerable length of time simply because the public needs them. The future is safer if "uneconomical arrangements" are prevented rather than corrected after they are made.

* * *

Milk Prices

The January prices of milk for the Philadelphia and New York markets are announced on page 11 of this issue. The New York price was set by the Federal Milk Commission, announcement being made December 31, after several weeks of public hearings. The Philadelphia price was set by Howard J. Heinze, Federal Food Administrator of Pennsylvania; Jay Cooke, Administrator for Philadelphia County, and Dr. Clyde L. King, Milk expert of the Federal Food Administration. These men, with the sanction of the Food Administration, acted as a commission and determined upon a price after consultation with the representatives of the Inter-State Milk Producers' Association and the milk dealers. By bringing these representatives together the informal commission saved several weeks of investigation and arrived at a price based as nearly as possible on the cost conditions in production and distribution. The price is within half a cent per quart of the New York price, and as no increase was permitted to the dealers, the consumers in the Philadelphia market are enabled to get their milk for a cent and a half less per quart than is paid by the New York consumers. The result will be encouragment of production with the least possible discouragement of consumption.

The discrepancy between the New York and Philadelphia markets is not as great as the figures would indicate. The New York producers are given a half cent more per quart for the same percentage milk, but the New York producers have to meet a system of barn scores, with price variations based upon the scoring. Again the freight charges are greater in the New York district. The average freight haul on New York milk is something like 300 miles, while the average in the Philadelphia district is only about 150 miles. This difference in the freights, which the producers have to pay, brings the net price to the dairymen to about the same level.

The attitude of the commissioners to the dairy industry should be most gratifying to the producers. The new prices will not mean big profits to the dairymen, and in many cases will still mean a loss except on most careful handling of good cows. But the commissioners have shown that they are awake to the situation in the dairy industry; that they see the necessity of keeping the price high enough to permit the dairymen to keep their herds up to near maximum production. Should the results thru January, as measured by receipts of milk and the sale of dairy cows, show that a higher price is necessary, there is every reason to expect that the February price will be raised. Unless there is a material change in the feed market, there is little possibility of the February price going lower.

The producers of the Philadelphia district are fortunate in having food officials willing to take up the matter without the usual delays. Dr. King has long since shown his grasp of the entire milk industry. He has always been able to look beyond the temporary features of locality and personality, to the broader economic phases of the industry. It is very easy for a commission of this character to be influenced only by the immediate demands of the consumers. It requires men of vision as well as courage to look beyond those demands to the ultimate good of the country and its future needs. Incidentally, the Inter-State Milk Producers' Association again served its members by providing the production cost records upon which all price adjustments must be made. This association has made every fight upon a clean cut statement of facts.

HARRISBURG NOTES

Farm Labor Uppermost.—Ways and means to secure the farm labor necessary to maintain, if not increase, the production of foodstuffs in Pennsylvania during the war are the big subjects announced for the meetings of the State Board of Agriculture and allied organizations which are to be held in Harrisburg during what has come to be known as "Agricultural Week." These sessions are expected to be of unusual importance and the reservations being made at the hotels indicate a large attendance, partly due to the fact that the new State Poultry, Potato Growers' and Vegetable Growers' associations will meet here for the first time and the State Veterinary Medical Society will have its meeting here. The programs are unusually varied, but each one will have discussion of the labor situation in its particular field. For discussion of the paramount matters there will be two joint sessions on the evenings of January 22 and 23. Governor Brumbaugh will speak on the relation of agriculture to the war, and John A. McSparren, master of the State Grange, and Gifford Pinchot, former national forester, talk on labor, while Prof. L. H. Dennis will discuss high school boys and agriculture. It is probable that representatives of the national government and the State Public Safety committee will be here and that some general plan for the state when the days when the farmers must have help will be evolved.

Must Kill Unlicensed Dogs.—Under a decision of the Attorney General's department which has just been made public by the Department of Agriculture, the state authorities will insist that county, borough and township officers enforce the dog license law of 1917, which will become operative on January 15. The licenses are now being sold generally thruout the state and plain notice has been given that unlicensed dogs are to be taken up and held for owners and that dogs must be kept penned up at night. The purposes of the law, as has been pointed out frequently, are primarily to prevent raids on sheep. The opinion is to the effect that if county commissioners fail to enforce the act they may be prosecuted and mandamussed. The same may be done to police officers. The act is drastic, but the contention is made at the capitol that it is either a case of dogs or sheep.

Oleo Records Go.—State Dairy and Food officials have issued more licenses for the sale of oleomargerine effective January 1 than ever known before and indications are that 1918 will go ahead of 1918, which broke the record. There are over 4,000 licenses issued for 1917 and the revenue therefrom would pay the expenses of the whole bureau for a year or more.

State to Kill Elk.—The State Game commission has decided to give short shrift to the elk which have raided farms. There have been complaints about deer and elk for some time and the deer situation seems to have been cleared up. However, it was impossible to round up the elk which were destroying farms in Blair County and orders have been given out by the commission for its wardens to shoot the elk.

Space All Taken.—The space has all been taken up for the mid-winter show to be held here in "Agricultural Week" and efforts are being made to get extra room for the displays which have been offered. The corn competition for which the state has been divided into four districts, bids fair to be the keenest ever known at a state show. Over 200 fleeces of wool have been promised.

Eleven Tractors Due.—Eleven tractors for farm use, the largest number ever assembled under one roof in the State Capitol, have been arranged to be shown here during the big week. This display is being arranged by the State as a suggestion toward helping the farm labor situation.

Crow Killing Starts.—The State Game commission wardens are placing poisoned corn in places which have been selected as likely to be visited by some of the big flocks of crows which have been reported lately. The game officers say that the corn will not be placed where domestic animals can get it and that it will not kill chickens or quail. Some controversy has arisen over the matter, but the commission is going thru with its plans.—Hamilton, Harrisburg, January 7th.

NEW YORK NOTES

Cold Storage Holdings.—The December holdings of apples are found to be nearly normal, about 1¾ bushels per capita. Those farmers who still have small flocks of poultry left should be encouraged to increase their next season's output by the federal report that the total poultry in cold storage at present has decreased an average of 44.2 percent over that of a year ago, with turkeys and ducks each decreased over 58 percent. This cannot but help to increase prices—and this form of meat is the most rapidly grown of any.

Baker's Plan for Crop Work.—Headed by I. C. Styver, a farmer representing New York State farm bureaus, a delegation of New York farmers interviewed Secretary Baker last week, protesting against conditions creating a scarcity of farm labor, partly brought about by the draft and partly by the inability of the farmer to pay as good wages as other industries. The secretary told the farmers he was planning to grant furloughs in spring and fall to boys from the farms whose training was sufficiently advanced, on condition that they return to their homes to help in time of need, but that compulsory leave to assist in farm work was no part of his plan.

Wheatless and Meatless Days Most Urgently Needed.—The farm bureaus of the state are in receipt of letters from C. E. Freeman, of Ithaca, N. Y., federal food administrator, saying rumors that meatless and wheatless days are unnecessary sacrifices for the American people originate from enemies or personal interests. He says that we will be unable to ship the 100,000 tons of foodstuffs demanded by our allies for next month's use, and that from now on what we send to them will be limited entirely by the volume of the savings of the people, as we have already sent the surplus of the 1917 wheat crop. Let all help our starving neighbors across the water by learning the advantages in the use of corn, rye, barley, white meats, fish, poultry and creamery products and save wherever we can in wheat, red meats, fats and sugar. It is such a little "bit" to do and the aggregate gain in export food stuffs means actual life to so many thousands of perishing ones.

Milk Consumers Indignant.—E. K. Baird, counsel for the consumers of New York City, declares the new federal milk commission has given a "30 percent investigation" when a "100 percent investigation" was asked for. The consumers are to put up a vigorous opposition to the rise in prices announced by the big milk companies at the beginning of the new year. Another cent has been added to the retail prices, making Grade A milk 17 cents and Grade B 15 cents. The big milk companies have again put one over on the public. Mr. Baird says if the commission, when it reconvenes, will give a real investigation he will prove that the distributors make exorbitant profits. No report on prices have as yet been made to the farmers and this, with the fact that farmers' evidence has not been available for the daily press that consumers might understand this side of the question, leads producers to fear that they are, as usual, to get worsted at the hands of the commission.

State In Grip of Coldest Weather Known.—For a week the entire state was paralyzed with cold. In Central New York, 40 degrees below zero was touched at many points, while in New York City it has been 13 degrees below, or seven degrees colder than any previous record. With less than half the normal supply of coal coming into the city's bins, the poor of the city and many other cities have suffered terribly, many resultant deaths being reported. Shipping of country produce has been suspended, but at the first let up, cabbage will be received at $35 per ton and potatoes at $1 per bushel.

Normal Amount of Fertilizers to Be Used.—The vegetable growers of Central and Western New York are ordering the normal amount of fertilizers for 1918, despite the fact that prices have soared. Cannon and crops require the same food, and manufacturers of fertilizers have had to compete with munition factories. They suggest a uniform price for their goods and will not guarantee delivery after March 1. Order now, is their emphatic advice.
stocks and ease financial strain.

Machinery Code Discussed.—The State Industrial Commission holds a hearing this week on its proposed new code for the guarding of dangerous machinery. Under the new code practically every machine in the state will need guarding, and means of doing so inexpensively are sought. At present the commission is handling 1,100 accidents a day, a large percentage of which could be prevented by the use of proper safeguards.—F.

NEW JERSEY FARM NOTES

Legislature.—With the prospect of the shortest session in many years, the 142nd Legislature of New Jersey convened at Trenton on Tuesday of this week. The Republicans were in complete control of each branch and chose Thomas F. McCran, of Paterson, for Senate President, and Chas. A. Wolverton, of Camden, for Speaker of the House. Governor Edge transmitted his first annual message and also sent in his first budget message. One of the striking recommendations of the Executive was that a "four square local option bill" should be passed. He would also limit the contributions in a state political campaign to $25,000, and in a county to $5,000. Reports were also received by the Legislature from the special commissions which have been studying the management of the state's penal, correctional and charitable institutions. In place of the present system of independent boards for each, there is advocated a state board of control for all the institutions, so that authority may be centralized and the management of each institution co-ordinated.

In his budget message Governor Edge recommends that the Legislature give the various agricultural interests of the state a total of $349,100 for the state's fiscal year beginning November 1, 1918. The agricultural branches of the state government had put in a budget request for $412,790. In 1917 their appropriation was $318,340.81 and they are now operating under an appropriation of $351,840. Following is the amount of each agricultural activity asked for the next fiscal year and the amount recommended: Department of Agriculture: Asked, $130,000; recommended, $120,360; Experiment Station, asked, $132,300; recommended, $104,400; Agricultural College, asked, $147,340; recommended, $121,840; State Horticultural Society, asked, $3,150; recommended, $2,500.

Appropriations totaling $14,571,298.30 were requested in the estimates submitted to the Budget Commission and the Governor recommends a total of $8,828,656.98 He points out that the budget law specifically prohibits his recommending a total amount in excess of anticipated revenue of the state for the year for which the budget is proposed to cover. This income has been estimated by the State Comptroller, who is Newton A. K. Bugbee, at $9,038,870 from November 1, 1918 to October 31, 1919.

"Food administration will not be a success, no matter how much legislation we enact or how diligently we co-operate in practical economies with the Federal Food Administration, unless positive steps are taken to assist the farmer in producing and handling his crops," said the annual message of the Governor to the Legislature, speaking on agricultural topics. "Shortage of farm labor is an alarming problem. Men, money and food are the triumverate of necessity in this war and the labor shortage enters so persistently into the third factor that it deserves the most profound attention."

Agricultural Work.—Representatives of farmers' organizations in New Jersey, together with farmers and their wives, are expected to attend "Agricultural Week," which will be held at Trenton from January 23 to 25. The first day will be devoted to the Agricultural Convention at the State House when two members of the State Board of Agriculture will be chosen. On the evening preceding the convention there will be a conference of county superintendents of farm demonstration from all the counties of the state. During the three days there will be meetings of 15 agricultural organizations or groups of farmers for the study of problems arising in their calling.—Lanning.

PENNSYLVANIA FARMERS' INSTITUTES

First Section.—Dauphin County, Linglestown, Jan. 14-15; Gratz, Jan. 16-17; Fisherville, Jan. 18-19. Speakers, Wm. M. Patton, L. W. Lighty and W. R. White.

Second Section.—Bedford County, Yellow Creek, Jan. 14; Fulton County, McKendry, Jan 15; Buck Valley, Jan. 16-17; Rehobeth, Jan. 18-19. Speakers, J. Stewart Group, M. H. McCallum and W. Theo. Wittman.

Third Section.—Butler County, Saxonburg, Jan. 14-16; Cooperstown, Jan. 16-17; Slippery Rock, Jan. 18-19. Speakers, Sheldon W. Funk, J. Aldus Herr, Robert S. Seeds and Rev. G. G. Kerr.

Fourth Section.—Clinton County, Mill Hall, Jan. 14-15; Loganton, Jan. 16-17. Speakers, J. T. Campbell, Dr. John N. Rosenberger and Fred W. Card.

Fifth Section.—Luzerne County, Town Line, Jan. 14-15; Orange, Jan. 16-17; Wyoming County, Mehoopany, Jan. 18-19. Speakers, D. H. Watts, Prof. Franklin Menges and George H. Gillingham.

FARM MEETING CALENDAR

New Jersey Corn Show, Trenton, January 23-25.
Agricultural Week, Harrisburg, Pa., Jan. 22-24.
Agricultural Week, Trenton, N. J., Jan. 22-25.
New York State Grange, Syracuse, N. Y., Feb. 5-8.
New York Farmers' Week, Ithaca, N. Y., Feb. 11-16.

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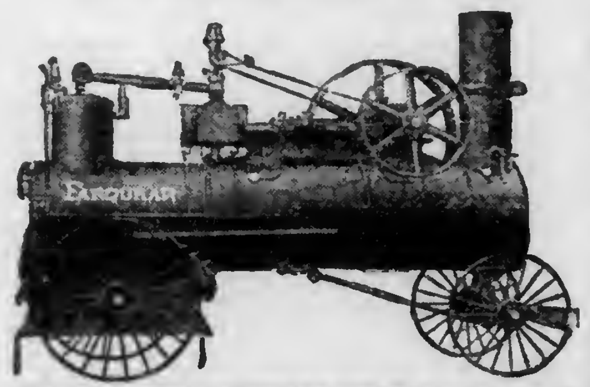

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Fertilizer Problems

Some Things I Have Noticed The Past Season

By C. C. HULSART, Monmouth Co., N. J.

The season of 1917 has drawn to a close so far as the use of fertilizers is concerned, and the next concern will be what is the best thing to do for 1918? That thought is uppermost in the minds of many farmers. Some are buying stable manure where it is to be had within reach of the farmers' pocketbook; others are on the "fence" not knowing on which side they are going to fall. One of the great troubles today, aside from high prices of fertilizer materials is the farmers' lack of knowledge of fundamental principles of plant feeding.

I have repeatedly noticed farmers using some form or other of plant food solely because it was cheap, regardless of whether or not it was what the plant required. Then, when such fertilizers are more or less of a failure, the goods are blamed, when in reality, the fault was the farmers'. Then, too, there is quite a disposition to substitute nitrogen for phosphoric acid, or nitrogen for potash. To illustrate: In many truck and market garden sections the farmer has learned that nitrate of soda, under fairly normal conditions, is quick to invigorate the plant into more stem and leaf growth. But whenever an application of nitrate fails to give the desired results what happens? The goods are condemned, when in fact it was a misunderstanding of the functions of the goods used. Furthermore, farmers are skeptical on certain forms of a given element of plant food. For example, if a farmer is tied to bone meal as a carrier of phosphoric acid it is hard to make him believe that phosphoric acid in dissolved rock is as good.

With high prices and the extremely abnormal conditions that are now confronting us, with all kinds of fertilizing material soaring higher and higher, it behooves us to buy that which is the cheapest per unit of plant food, and cease being chained to some form simply because habit has prejudiced us. If the purchaser for a family who habitually used beef on their dining table was to go to the shop for the accustomed supply and there was none to be had, what would naturally occur? Why lamb, pork, veal, or possibly fish, would be substituted, and with no detriment to anyone. The range is just as wide in plant feeding. The thought that caused this article to be written is an outgrowth of some observations made and lessons learned this past season. The last week in May I had applied to my field corn (it was just coming thru the ground) an application of acid phosphate. This material had mixed with it a small amount of ground fish and tankage. I was away at the time the fertilizer was applied. When I inspected the work on my arrival home, it appeared to be all right. By the time the corn was four inches high I could see a difference in size and vigor of the young corn plants. The corn in two rows was small while that in adjoining two rows was vigorous and much larger. This was the case over the entire field. When I first noticed the difference I laid it to being covered at different depths at time of planting the seed. However, as time passed the difference was just as pronounced and the theory of the deep covering of the seed was not wholly satisfactory, particularly when all of a sudden it occurred to me that the seed was planted east and west while the difference in the young corn was north and south. (We plant corn in check rows.) Now, I had solved the problem; it was in the application of fertilizer, mainly acid phosphate. The difference existed all season on one field while another had nearly outgrown it. This one was planted on a clover and timothy sod while the former was bare ground, having been in corn the previous season, and hence not so well supplied with available fertility. The cause of this difference was that one man applied a larger amount than the other. Later in the season, I was talking with a friend who is a heavy grower of tomatoes. The conversation drifted to fertilization when he invited me to visit a certain field claiming he had something to show me worthy of study. I went and on reaching the field found a very nice crop of fruit, much of it ripe at that time. He showed me a strip where his fertilizer had become clogged when applying the fertilizer prior to setting the plants. This was two rows across a six-acre field. It did not take a very experienced eye to see the difference. While these two rows did not have the first application of fertilizer as did the rest of the field, it did have a substitute—an application of nitrate of soda, and another later in the season as did the rest of the field at this time.

At the time I visited this field, just at the beginning of the season, the vines on these two rows were yellow in color, spindling in growth with fewer branches. They had set and matured 15 to 25 fruits while the adjoining plants were more dense in foliage and stem and carrying a crop of larger fruit, nearly or quite three times in volume or weight.

Here is a lesson as to what soluble phosphoric acid will do on two widely separated crops—corn in my own case and tomatoes in the other. In the case of the tomatoes, nitrate of soda was substituted for the original fertilizer which was 10 to 11 percent phosphoric acid goods, and it failed. When the plant needs phosphoric acid, nitrogen will not take its place; hence do not try to make a crop with only nitrogen when phosphoric acid is what is needed. Do not be persuaded into believing that plant food in animal bone of any kind is superior to the same plant food in acid phosphate. A pound of phosphoric acid in acid phosphate is worth just as much to grow crops as in bone and can be bought for less.—C. C. Hulsart.

Sweet Clover Cover Crop—Seed Sown July 15. Two Feet High on Oct. 10

COMBATTING PLANT DISEASES

According to C. R. Orton, of the botany department of the Pennsylvania State College, now is the time for every orchardist and farmer to plan his next season's campaign against plant diseases, which annually destroy from 10 to 25 percent of his crops.

It is too late to do anything for the wheat crop now, but those who grow oats and barley should get their formaldehyde and treat their seed for smut at any time when the weather is not too cold. Care should be taken to disinfect sacks in which the treated grain is stored.

Potato growers should buy a supply of the same chemical for the disinfection of their tubers next spring to prevent scab diseases and blackleg. It would also be well to lay in a supply of copper sulphate to spray the potato crop later on.

Orchardists should be getting their lime sulphur and other spray materials before the spring drive when the market is rushed and the supply may be low. This is the slack time of the year and many of these preparations may be made now with great profit.

NEW JERSEY NOTES

Perhaps the most unusual experience the farmers have met in New Jersey was the extremely high cost of labor and its scarcity. In the tomato and sweet potato growing districts of Gloucester County, experienced help received as high as $45 per month, board included. In a few instances $50 per month was paid. This, together with the very high cost of dairy, swine and poultry feeds, resulted in experiences not met before in the past fifty years.

The most profitable crop in South Jersey this year was the tomato crop. While unfavorable weather conditions caused a temporary loss to the early crop, the second early and late varieties proved money makers to the growers. A few days' burning sun the second week in July blistered the early crop quite seriously, consequently thousands of baskets were left in the fields. Naturally, a few of the blistered tomatoes reached the markets, causing a slump in the prices, some shippings scarcely paying transportation expenses.

Still another set-back to the early crop returns was the unpleasant experience of occasional late freights, the tomatoes not arriving until the markets were practically over.

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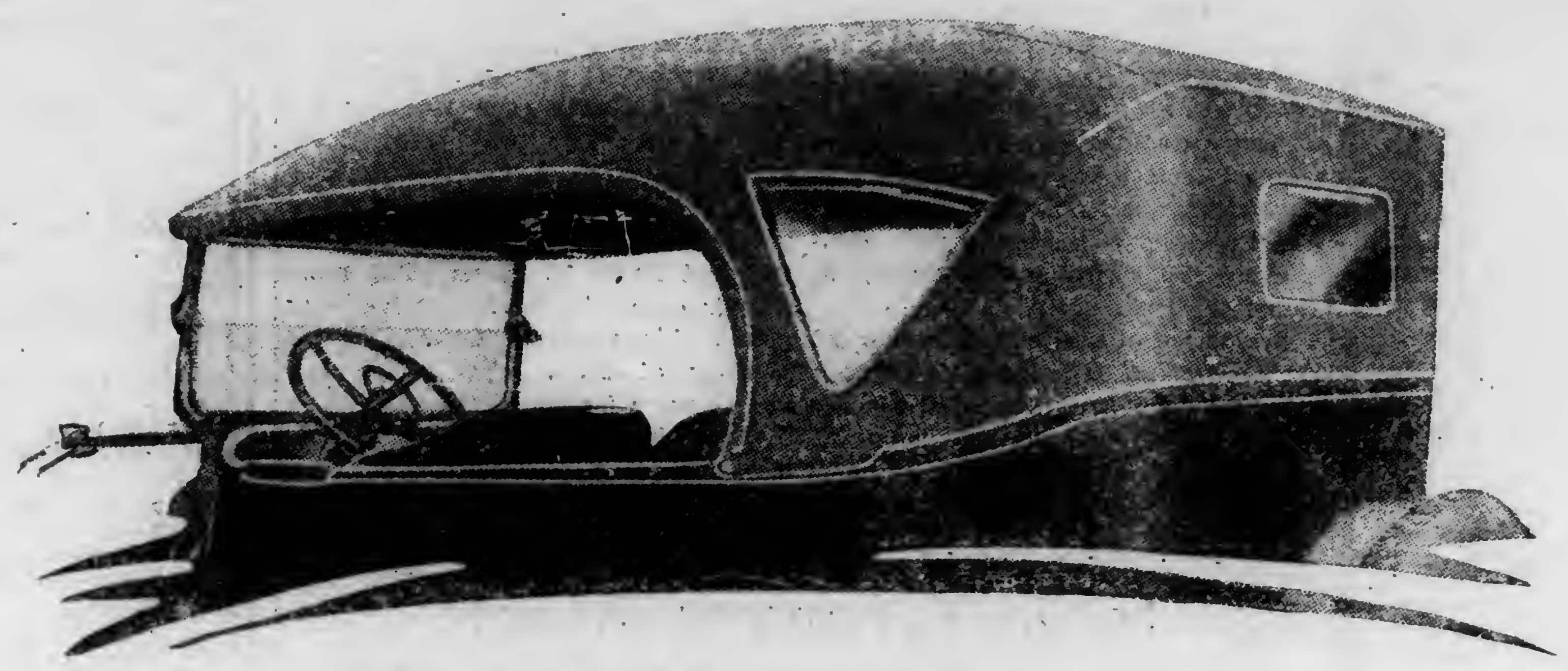

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These shippings were necessarily carried over to the following day. Late freights are a frequent occurrence every year, but more frequent this year than ever before.

At Swedesboro, Gloucester County, which is the most extensive tomato growing section in the state, they experienced a shortage of cars. Had it not been for the canners another serious loss would have resulted. When the crop is up to the average, as many as 30 cars of tomatoes are shipped from this station in a single day. This year, only half this number was reached, owing to the shortage of the crop, and demands of canners.

Swedesboro is also the center of the most extensive sweet potato growing district in the state; some of the farmers growing as many as 400,000 hills, planting about 6,000 hills to the acre. This year the crop was shorter than for many years, owing principally to the absence of potash. While some manufacturers were able to supply 1.2 percent to 3 percent, other brands contained none at all. The usual analysis for a sweet potato fertilizer is: Ammonia, 2 percent to 3 percent; phosphoric acid, 7 percent; potash, 10 to 12 percent. While the crop was far below the average, the prices have ruled higher than for the past 12 years. For this reason fewer sweet potatoes have been stored than for the past 10 or 15 years. The prospect is unusually favorable for high prices this winter. Owing to the scarcity of farm labor, some few sweets were frozen in the ground.—H. T. Richards, Gloucester Co., N. J.

New Jersey Fruit and Vegetable Growers Meet

The forty-third annual winter meeting of the New Jersey State Horticultural Society was held in Newark, N. J., in December. Many things of especial value to fruit and vegetable growers were brought out in the lectures and discussions. The afternoon of the first day was taken up with reports of officers and reports of standing committees, but in the evening a very fine address was given by Mr. H. W. Collingwood, of New York. He explained in a very forceful manner that the high prices which the consumers had to pay for our products was prohibitive, and made it possible for an extra multitude of middlemen to live without themselves producing.

On Tuesday morning. Mr. J. B. Taylor, of Rhode Island, told how the Providence Market Gardeners' Association had organized, bought a piece of ground in Providence, and had established a farmers' market which they now own and manage themselves. A market news service is in operation whereby the amount of every kind of produce in the market each morning is added up and the selling prices are published immediately in every daily paper of Providence. This has a wonderful effect in creating a demand for the locally grown produce which is in abundance. Thus, the returns to the farmer are increased, and the cost of living in the city is decreased.

According to Mr. D. Henniger, Richfield, N. J., any celery grower can produce very desirable seed by selecting his best plants. During the winter while removing celery from the trenches, the most desirable stalks may be selected, trimmed up, and set in glass-covered cold frames for the production of seed.

Mr. Clark Allis, of Medina, N. Y., is a very extensive apple grower, and gave a very spirited address in which he stated that the New York apple law had many features which annoyed the producers, dealers and consumers. He claims that the farmers themselves should direct the legislation, which is designed to be helpful to them.

Brief talks by prominent New Jersey apple growers brought out the pleasing fact that the prospects for the New Jersey apple growers are brighter than ever. The apple sorter or grader is doing much to increase the selling value of our crops.

During the afternoon session, Dr. T. J. Headlee, State Entomologist, gave a very practical talk on the control of aphis on apple trees. He has developed new and improved methods for the control of these pests, and every fruit grower should write to Dr. Headlee for the specific treatment, because one kind of aphis requires stronger spray mixtures than the others.

Prof. M. A. Blake, State Horticulturist, gave a very instructive lecture and illustrated the fact that most every grower in the state has an individual mark for his peaches, and that there is great variation between them as to the size, color, and condition of the fruit. Prof. Blake maintains that there should be standard names for each grade of peaches so that the buyers would know what the carrier contained without an examination.

Dr. Mel. T. Cook, of our Agricultural Experiment Station, reported that he had carried on experiments in co-operation with the U. S. Department of Agriculture to find a cheaper and better spray than bordeaux for the checking of tomato blight. He has had excellent results so far with a solution made up of one-half pound copper sulphate, 50 gallons of water and three pounds of resin fish oil soap.

Prof. A. J. Farley reported his experiments at Moorestown, on the dusting of peaches as compared with spraying. The results showed that spraying was a trifle more effective, costs less for material, but more labor for application. The time may soon come when the large commercial orchardists will resort to dusting as a labor-saving measure.

On Wednesday morning, Mr. Walter L. Minch, Bridgeton, gave an excellent address on "Second Crop Seed Potatoes". He said that they (Minch Bros.) had planted their own strain of Irish Cobblers for seven years straight for seed purposes, and that the strain was just as fine as ever, and when planted early in the spring along side of the best Maine stock, it produced equally as good results and was more dependable. Seed for the second crop is held in cold storage from April 1st until midsummer. Then it is taken out ten days before planting. It is planted closer than the regular crop is in the spring, because frost will kill the vines before growth is completed.

The tractor question was a live topic, and was very ably handled by H. W. Riley, Ithaca, N. Y., and by Roland Curtis, New Brunswick, N. J.

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We will assist you, if you wish, not only by undertaking an advertising campaign, but also by sending one of our representatives to help you.
Write us promptly before your territory is taken.
The Hubbard Fertilizer Company
802-3-4-5-6 Keyser Building
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Branch: Searsport, Me.

You Must Spray
To Make Crops Pay
There's a Brown's Auto-Spray that will suit you. 40 styles—hand, traction and power. All have non-clog nozzles—save endless trouble. Used by Experiment Stations, and over 450,000 farmers, gardeners, etc. Send today for catalog and Spraying Guide—both *free.*
E. C. BROWN CO.
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Hoffman's Clover Seed
Medium Red, Mammoth, Alsike, Alfalfa, and Sweet. Plump—high purity—hardy—strong germination. Buy your Clovers early enough to permit testing, before seed time. We allow return of unsatisfactory seed—refund money—pay freight. May we send you our 1918 Farm Seed Catalog, with samples? Both free if you mention this paper. Write us today.
A. H. Hoffman, Inc., Landisville, Lancaster Co., Pa.

Quaker City Feed Mills
Grind corn and cobs, feed, table meal and alfalfa. On the market 50 years. Hand and power. 23 styles. $4.80 to $40. FREE TRIAL. Write for catalog.
THE A. W. STRAUB CO.
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Dealers — Write for contract.

PURE FARM SEEDS
CLOVER, Timothy, Alsike, Alfalfa, Oats and all kinds of PURE FARM SEEDS direct from producer to consumer; free from noxious weed seeds. Ask for samples.
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SAMPLE OUR SEED
Three earliest vegetables in cultivation for 10c. One packet each, Robinson's Earliest Tomato, Earliest Round Red Radish, Earliest Lettuce, 10c to new customers. Regular price 15c. CATALOG FREE.
C. N. Robinson & Bro., Dept. 37, Baltimore, Md.

Strawberry Plants. Lowest prices. Catalog of 85 varieties including the Fall-Bearers Free. L. G. TINGLE, Box 77, Pittsville, Md.

It developed that the value of most any tractor depended upon the man who runs it, and that kerosene was much cheaper and equally as efficient as gasoline.

In the discussion on motor trucks, the size to buy was referred to Horace Roberts, of Moorestown, because he used several sizes. He urges that most farmers buy the medium size from 1½ to 2½ tons capacity. The heavier types cost much more, are unhandy, ride hard, and the cost of running and upkeep is necessarily much higher than for a small truck.

In the opening address Vice President Minch said in part: "During this very serious time, it becomes our patriotic duty to speed up production at a time when we must use an incomplete fertilizer, when vegetable seed is extremely scarce, when labor is almost unobtainable, and when we are facing an uncertain market with a cost of production which will certainly be excessively high.

"At this very time, we must consider the plant food problem, as it is necessary for us to order our fertilizers at once. The need for at least a small percentage of potash is essential for the production of more staple vegetables. The value of lime requires more careful consideration by every farmer. Stable manure can be purchased only in very limited quantities. It seems necessary that we begin anew the study of the value of green manures and adopt a wide rotation which provides for cash crops and soil improvement crops as well.

"Secondly, we must consider the question of the source of our seed stock and our nursery supplies. The gardener or fruit grower cannot be secure as long as the source of his supplies lies beyond the seas. Our growers of nursery stock are solving their problems very satisfactorily, and are to be congratulated on their attainments. However, to supply seeds for the gardener and trucker it is necessary to make rapid progress in the development of the production of home-grown stock. The demand is imperative that we produce native seeds that are sufficient to grow our crops. Success in growing native spinach seed, native onion seed and native celery seed should stimulate us to greater endeavor. This project is worthy of the attention of our progressive young men.

"The third thing to be considered is how we are to obtain sufficient labor for carrying on our usual vocations as fruit growers and farmers. We are passing thru the experimental stage. Most of us have had experience with the bureau of labor, with what is called High School labor, the Y. M. C. A. camps, with woman labor and with the various phases of volunteer labor. The thought of the Federal Government seems to be toward drafting men who for various reasons cannot fight who shall work on the farms and be credited with doing their patriotic duty. Our business is so highly specialized that vacancies cannot be filled without years of training and discipline. The finished soldiery is not more essential to the existence of the nation than is the well-equipped force of a husbandman. Every fruit grower and vegetable grower must consider himself a soldier in the orchard and in the field, and become conscious that he is performing a patriotic work.

"A fourth consideration is what constitutes a fair selling price of our fruits and produce. It is evident that while outsiders insist we are exacting too much profit, we are considering how to secure the necessary means that will enable us to work our farms and orchards to their limit. We are willing to sell for a reasonable price, providing the proper jury considers impartially the subject of production expenses. Serious thought must be given the uncertain factors entering into the business of fruit growing and crop production, such as climatic conditions, undue heat, sudden frosts, devastating storms, an excess of moisture, sudden appearance of a new disease or an invasion of an insect pest, unexpected labor disturbances or sudden slump in market prices which make up a partial list of growers' woes. It requires more than one good year to recover losses incurred by several crop failures."

The exhibit of fruit and vegetables filled two large automobile salesrooms on Halsey street. The fruit exhibit was positively wonderful.

Reward of Intelligent Labor

The feature prize of $50 in gold was won by John H. Barclay, Cranbury, N. J., against apples from New York, Connecticut, and Rhode Island. The vegetable exhibits of J. W. De Baun & Son, Pine Brook; Henniger and Bender, Richfield; H. Henniger, Paterson, and of Henry Dreyer and Sons, Cranford, were especially fine. —R. W. DeBaun.

CANTALOUP VARIETIES

Some one will wonder after reading my article on cantaloupes in last week's issue what kind or variety is the best to plant. I don't know; it all depends on the man, his taste, and his market. If it is a home market, then some of the high-quality strains might be introduced. Then, too, some lovers of the fruit think the salmon fleshed sorts are superior. And again, others demand the green-fleshed varieties. To my way of thinking the last named are better. I know I will not get a unanimous vote of approval on this statement. I can get more clear money from an acre of green-fleshed melons than I can from the salmon-fleshed. They are more hardy, the flavor stands up better to the end of the crop, and last but not least are a better cropper.

Many think the Rocky Ford is the only variety because of its exquisite flavor. But what the Rocky Ford variety will do in Colorado it will not do in the humid climate of the Atlantic seaboard. The Jennie Lind type is better suited to this climate.

Cantaloup growing is coming back to its own on the sandy soils of New Jersey. I never saw cantaloupes sell any better thru a whole season than they did the past season, and they will continue to do it as long as conditions are as they are now.—C. C. Hulsart.

The How and Why of Caloric Pipeless Heating
The CALORIC is not a pipe furnace with the pipes left off. Neither is it an experiment, hastily put together to meet a demand. It is specially designed to heat homes, halls, churches, stores, factories, etc., more uniformly, economically and satisfactorily than they have ever been heated by other systems.
HERE'S THE SECRET
The CALORIC works thru Nature's own laws of circulation by air currents. Warm air rises. Cold air falls. Warm air and cold air cannot occupy the same space at the same time.
In the same volume that the warm air is pumped up into the house, an equal amount of cold air is drawn into the furnace, where it is heated, moistened by the vapor from the two-gallon water pan, and then recirculated through the register. This continues as long as the fire burns.
Thus there is a constant circulation of properly moistened warm air. Just as running water purifies itself, so this circulating warm air, passing thru heat of from three hundred to eight hundred degrees, in which no germ can live, is kept pure and healthful.
PIPELESS CALORIC FURNACE
The Original Patented Pipeless Furnace
Is guaranteed by the oldest and largest manufacturers of warm air heating systems in the United States. You take no chances when you buy a CALORIC.
Whether your house is old or new, the Caloric is easily installed in one day, without interruption of your present heating arrangement. No holes knocked in your walls, no cellar full of heat-wasting pipes. The Caloric requires but *one register* and occupies little space. It burns any fuel, and needs hardly any attention. Makes housework one-third easier, as there is no muss from carrying in coal and carrying out ashes—no smoke, gas or soot. Eliminates fire danger and increases the value of your property.
TWO BOOKS FREE
A full, illustrated explanation of this remarkable furnace will be sent to any address on request.
If you do not know the dealer who sells Caloric Furnaces in your town, we will send you his name so that you can see the furnace demonstrated. Also the names of Caloric owners in your locality.
Just send in the coupon or a post card and we will gladly supply full information without in the least obligating you to buy.
THE MONITOR STOVE & RANGE CO.
"99 Years of Service"
314 Gest Street Cincinnati, Ohio
These BOOKS FREE! Send for Them Today!
The Monitor Stove & Range Co., Cincinnati, Ohio
Please send me your books about the Caloric Pipeless furnace, without obligation on my part.
Name ....
P. O. ....
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Don't Pay Freight on Water
Spray with
Niagara Soluble Sulphur Compound
In Powder Form
Assures Clean, Top-of-the-Market Fruit
Dissolves Instantly in cold or hot water. Consider This Comparison
This 100 pound drum of Niagara Soluble Sulphur Compound is equivalent to a 600 pound barrel (50 gal.) of lime and sulphur solution. No leakage—No crystallization—Keeps indefinitely anywhere. Costs less to buy and saves labor cost too, you have less to haul and handle, no bbls. to return.
Niagara Soluble Compound, after 8 years of test, is declared by thousands of fruit growers to be superior to the old-fashioned lime and sulphur solution.
More Economical—Efficient—Convenient—Practical
Write today for Spray Calender telling how to grow clean, high quality fruit and at the same time reduce your spray bills at least 25 per cent.
Standard 100 lb. Drum
NIAGARA SPRAYER COMPANY, 137 Main St., MIDDLEPORT, N. Y.

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FOR TYING
CELERY
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IN FAST COLORS
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TAKE NOTICE
OLD BAGS BOUGHT
One of our customers received $50 for what he thought worth $25. Get our price list. References
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FULL VALUE PAID

WHAT YOUR OLD BAGS WILL BRING YOU
We pay for sound or mendable 100 lbs. Feed Bags, 10c each; 150 and 200 lbs. Bran, 15c each; Phosphate bags (not rotten), 8c each. We can use any size, any quantity. We pay freight and send returns promptly. Try us. Write to-day for tags and shipping instructions
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FIELD SEEDS AT WHOLESALE PRICES
We save you money on your Seed Bill. Write for our Special Money-Saving Price List and get our reduced prices on Best Quality Guaranteed Seed. You should know about our low prices. Write at once and be convinced. Everything Guaranteed equal to Samples or Money Refunded. Don't pay double profits on Grass Seed. Our seeds are sold subject to Government test. Have low prices on Seed Corn, Oats, Wheat, Speltz, Barley, Cane, Millet, Cowpeas, Rape, Vetch, Sudan Grass, Potatoes, Artichokes and all Farm and Garden Seeds. Don't order until you write for big 116-p. catalog. Free samples and special low prices on seeds you require. Free 60-p. book on Growing Alfalfa to those who ask for it. Write now. A. A. Berry Seed Co., Box 230, Clarinda, Iowa.
TIMOTHY $3.00
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AT LOW PRICES
SAMPLES And 116 P. Catalog FREE

Your Cows Need This Great Milk-Making Winter Feed

Yes, sir! They need International Special Dairy Feed—right now when Jack Frost has taken away all chance of pasture.

INTERNATIONAL Special Dairy Feed

stimulates the appetite, keeps bowels open, and above all, *increases* the milk flow and *lowers* your feed bill. Hundreds of dairymen report a gain of two quarts of milk per day from each cow. Figure out what this would mean from your herd.

A ton of International will feed a cow six months and in that time *increase* the milk yield by a value of at least ten dollars. Yet it costs less than home grown feed.

Try a Ton Today

If you would keep your cows in prime condition during the "barn period"—if you would reduce your feed bill—if you would bring the milk production to its highest natural capacity, and keep it there—try a ton of International. Go to your local dealer today. If he does not sell it don't take a substitute. Write to us. *Be sure you get International.*

INTERNATIONAL SPECIAL DAIRY FEED

International Sugar Feed Co.
Minneapolis, Minn.
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The Country's Most Popular Dairy Feed

ATLAS DISTILLERS GRAINS

Right now is the time when you want to produce every pound of beef and every ounce of butter fat that your cattle are capable of. Prices are at the top. By feeding **Atlas Distillers Grains** in your balanced rations, you are using the feed with the greatest fat and protein contents known—the greatest beef and milk producing feed on the market. **ATLAS** has 80 per cent. digestibility, a figure never before even approached.

THE ANALYSIS OF DISTILLERS GRAINS

State Agricultural Schools in every dairy state in the union have made careful and official experiments with **ATLAS** and have found that it runs from 2 to 3 times as much fat and from 3 to 4 times as much protein as straight grains. This means that you cannot afford to feed your grains. By selling them on the open market you can buy **ATLAS**, which, ton for ton, has three times the nutritive value of the grains and sells for less money than some of them. Let us send you our circulars on dairy feeds. You will find that your profits will be greater, your herds will be in better shape and your feed cost will be greatly decreased. A postcard will tell you how to do this—or see your dealer. **ATLAS DISTILLERS GRAINS** contain 27 per cent. to 30 per cent. protein and 8 to 10 per cent. fat.

ATLAS FEED & MILLING COMPANY
Peoria, Illinois

$17.95 Upward Sent on Trial *American* Cream SEPARATOR

Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only $17.95. Skims warm or cold *milk closely*. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—

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Whether dairy is large or small, or if you have *separator* of any make *to exchange*, do not fail to get our great offer. Our richly illustrated catalog, *sent free* on request, is a most complete, elaborate and interesting book on cream separators. **Western orders filled from Western points.** Write today for catalog and *see* our big money saving proposition.

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What 15c Will Bring You from the Nation's Capital

Washington, the home of the Pathfinder, is the nerve-center of civilization; history is being made at this world capital. The Pathfinder's illustrated weekly review gives you a clear, impartial and correct diagnosis of public affairs during these strenuous, epoch-making days.

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for their beautiful illustrated catalog which fully describes all the latest improvements on the GUARANTEE LIME & FERTILIZER SPREADER, also mixing, covering and harrowing attachment, the most satisfactory spreader made for spreading lime, ground limestone and commercial fertilizer.

You Will Save Money By Writing To The Above Referred to Company Today

The Dairy

GETTING AT THE FACTS IN DAIRYING

(Continued from Page 1.)

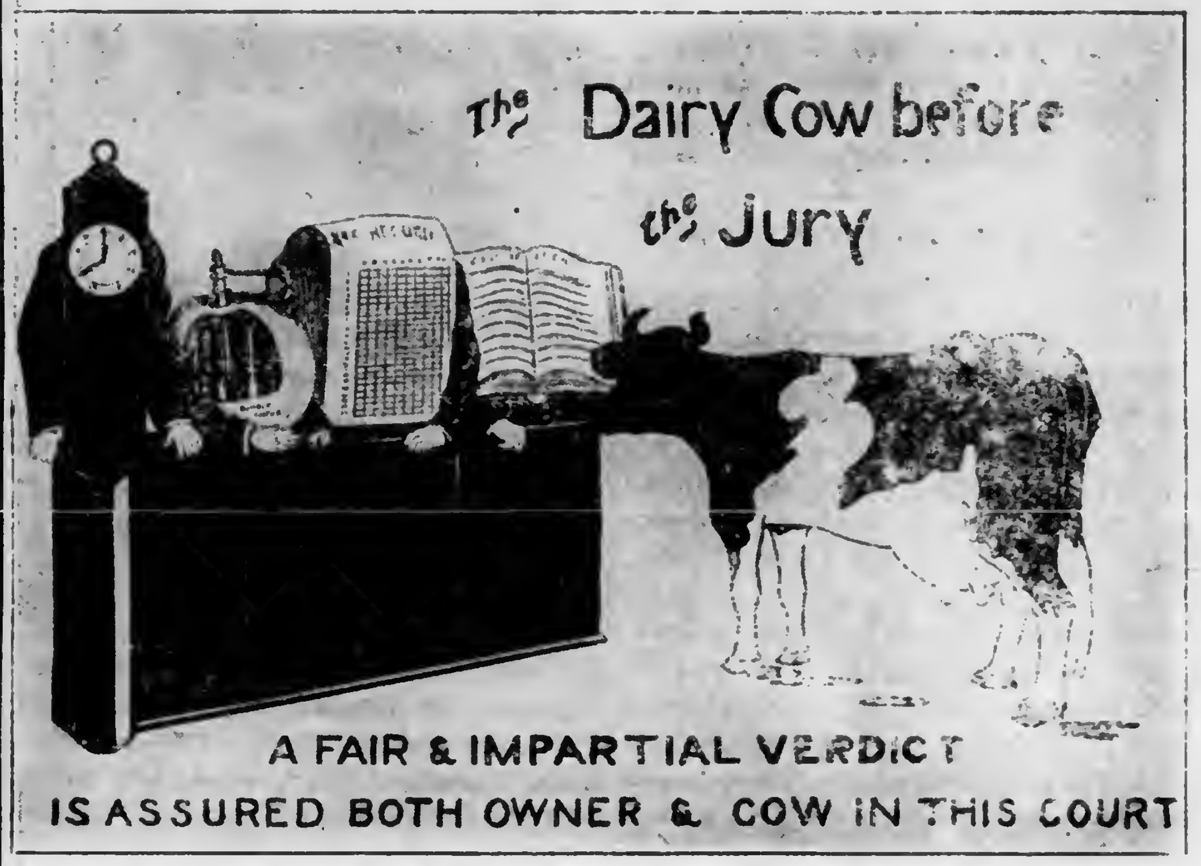
In short, no man can predict the productive ability of a cow by her appearance, especially if she has good dairy conformation and her lack of ability belies her looks, which is often the case. Nevertheless, there are those who claim they can approximately estimate the performance of an animal by her appearance. Not only is this impossible, but in the greater majority of cases a herd owner cannot fortell the comparative ability of individuals within his own herd. There are examples of members of cow testing associations attempting to place their cows in the order of their productive merit only to have that ranking entirely reversed at the end of the year by actual test. Thousands of cases are duplicates of that of a member of a Wisconsin association who judged a certain cow to be so poor that a test was not necessary to condemn her. Upon the request of the tester he finally gave her a trial for a year and was surprised to find that she proved to be better than 23 other cows in his herd.

A member of another association had two daughters of the same cow and judged them to be equally poor, for when they freshened, which was about the same time, they produced about the same amount of milk. At the end of the year the one produced less than 4,000 pounds and the other more than 6,000 pounds of milk. At the beginning of the test he would have sold them both for the same price, but finally decided to keep the latter. Records had proved to him that persistency could not be told by guesswork, and it is a factor which is given entirely too little consideration.

Fat Production

As uncertain as judging milk production by appearance may seem, estimation of butterfat performance is an entire impossibility. Not only can no man tell the butterfat test of milk by looks or any other external quality, but few cows will yield the same percentage from one milking to another. Butterfat percentage is undeniably subject to extreme variations, ranging from a fraction of one percent to several percent in the same individual often without any explainable cause. A study of the records of the best cows of the leading dairy breeds plainly shows that the amount of milk produced is no indication of the total butterfat, altho the general rule is that the more milk produced for the same individual the lower the butterfat test.

With milk and fat production entirely uncertain factors, careful records are absolutely necessary to detect and eliminate unprofitable individuals and to determine which ones should be selected for the future herd. Every farmer can weigh each milking from each individual, and from time to time test samples of milk for butterfat. It is but the work of a few moments to weigh and record the milk from each cow, and the Babcock test can be made on rainy days when the farmer is not busy. However, experience shows that the average farmer does not care to keep any more records and accounts than are absolutely necessary. Therefore, if he is to progress and improve his herd and does not care to personally go thru the necessary routine, he can have it done by another party. The most efficient and economical way to have such records kept is to join or organize a co-operative cow-testing association. The plan of operation of such associations is too well known to require explanation here. If you are not familiar with their work write your state experiment station.


The Dairy Cow before the Jury
A FAIR & IMPARTIAL VERDICT IS ASSURED BOTH OWNER & COW IN THIS COURT

Cow Testing Associations

The value of a movement is measured by its success under the severest test. Therefore a fair measure of the success of cow testing associations would be their growth and success in countries and states where dairying is highly specialized and where herd owners are expert enough to judge the practical merits of testing associations. Prof. Henry, in "Feeds and Feeding", says: "The remarkable development of dairying in Northern Europe during the past 20 years has been due in large measure to the work of cow testing associations. From 1895, when the first association was organized, the growth has increased to 3,000 such associations. The improvement brought by these associations is marvelous. In Denmark (the dairy criterion of the world) the average amount of butter yield has increased from 112 to 224 pounds from 1895 to 1908. In ten years, in Sweden, the annual production was increased 109 pounds per cow."

In the United States, where these associations were started in 1906, they have increased in numbers to 472 in 1917, with the strongest growth in the most specialized dairying states. Their growth among more general farming states indicates their value to the general farmer. Superintendent Gardner, of the advanced Registry Division of the Holstein-Friesian Association of America, who is perhaps better qualified than any other man to speak from long years of first hand acquaintance with records of improved cattle, said in the Black and White Record that "Cow Testing Associations pave the way and increase the demand for better breeding stock, and testing for advanced registration assured a supply of purebred cattle of merit to meet that demand. Had we 50 such associations where we have one, millions of dollars could have been saved to our farmers this year that will be wasted in feeding unprofitable cows."

Supt. Gardiner's last statement is true, and the effectiveness of cow-testing associations is only limited by the extent to which the farmer is able to dispose of his unprofitable cows without injuring the fertility of his soil, and the use he makes of the knowledge obtained by scales and Babcock tester. If he is the sort sometimes encountered, that says testing didn't improve his herd, and goes on in the same rut, he has thrown away his money and harmed the cause; but if he is like the dairyman whose herd average was 5,800 pounds of milk and 224 pounds of fat before he had it tested and weeded them out to an average of 8,628 pounds of milk and 324 pounds of fat in four years, then he has benefited both himself and the work that has helped him.

Other Association Helps

More record keeping is not the only function of our Associations. Co-operative buying of feeds, assistance in purchase of cattle, balancing of rations and advising as to proper methods of feeding and points of management are all part of the work of the tester. Perhaps the most permanent benefit brought by the Supervisor is the demand he creates for better cattle, especially recorded bulls of merit and helping in their selection. His knowledge of breeds and blood lines and familiarity with pedigrees and advance registry records enables him to be a big help to the farmer. In weighing the milk and the feed he can correct either underfeeding or overfeeding and by balancing a ration he can tell the farmer what to feed and how much for the most economical production. Thousands of examples could be secured of farmers who have been saved the cost of a year of testing the first month by correcting their method of feeding. The tester can give useful information about calf feeding, feeding of dry cows, points of herd management and what size to build the silo for a given herd. In short, there is no limit of good the farmer can get from the association if he is interested and progressive enough to act on what he may learn from applied study.

We are warned against holding a penny so close to the eye that we can't see a ten-dollar gold piece of future profit, but if we have a vision and faith in something that has been proved a success, there is no limit to the future of these associations. There is no sound argument that can be advanced against cow testing associations as an institution, and they are the most important and universally applicable agency for the improvement of the dairy industry of this country and consequently deserve the support of every modern and progressive farmer who has at heart the production and conservation of a sufficient supply for our nation in its present crisis.

Milk Prices Advanced

Federal Commissioner's Report

In Philadelphia Market

The Federal Food Commission investigating the milk market conditions, on January 3, announced that milk prices to farmers, beginning January 7, would be 9¼ cents per quart f.o.b. Philadelphia for four percent milk. The commission was made up of Howard J. Heinze, Federal Food Administration of Pennsylvania; Jay Cooke, Administrator for Philadelphia County, and Dr. Clyde L. King, milk expert of the Federal Food Administration. The Commission announcement said:

"The commission found that the price the farmer should receive starting Monday, January 7, is 9¼ cents per quart f.o.b. Philadelphia for four percent milk, and the charge to the consumer should be, starting on the same date, 13½ cents per quart and 7½ cents per pint. This price to the farmer is found to be imperative in order to maintain production equal to the demand of the Philadelphia district, and will net on the farm somewhat less than 9¾ cents for four percent milk in New York City, which price was set to the farmers supplying the New York district for the month of January by the Federal commission sitting in New York City.

"Philadelphia consumers have enjoyed a price on milk for several months that was only made possible by the hearty co-operation given by farmers and distributors to the Federal authorities. A price advance is now necessitated here because of the higher feed costs and particularly on account of unsettled labor conditions and the increased labor costs. The allowance made for distribution remains just where it has been previously. In other words, all the additional consumer price has been passed on to the farmer.

"The commission has kept paramount in its minds thruout the inquiry the burden that any price advance would be placed upon the consuming public. It was forced to the conclusion that it would be better to pay this advance now and thus meet the farmers' actual production costs than pay a famine price later when dairy herds would possibly have been slaughtered and the supply permanently diminished in face of a rapidly growing demand. The prices quoted above were set to be effective until February 1 only.

"The two representatives of the producers attending the inquiry were Frank P. Willits, of Ward, Pa., president of the Inter-State Milk Producers' Association, and Robert W. Balderson, of Kennett Square, Pa., the secretary. The two representatives of the dealers were Harry Scott, of Scott-Powell, and Frank Wills, of Suplee-Wills-Jones Company."

Inter-State Association Rates

In accordance with the above decision, the Inter-State Milk Producers' Association issues the following

(Continued on Page 19.)

This Calf Pays Five Times Its Feed Cost

Raising calves on whole milk is out of date. It is throwing away good money—costs you from $30 to $40 to bring the animal to five months old. Sucrene Calf Meal saves you from $25 to $30 in feed cost—enables you to sell or use nearly all the cow's milk. The calf thrives better, grows faster, with less chance of setback or sickness. *Let us tell you why.*

Sucrene Calf Meal

The Most Perfect Calf Food Science Can Produce

It is unlike any other calf meal on the market. Contains ingredients not found in any other, but which the calf must have for health and growth.

Sucrene Calf Meal is the most perfect substitute for whole milk on the market because it contains soluble blood flour, a strong protein food and one of the most effective bowel correctives—prevents scours; bone meal, which builds up big, strong frames; soluble starch and malt flour, which supply the necessary sugar in the most digestible form—now generally prescribed by physicians for human babies in preference to milk sugar; dried skim milk, which contributes the rare and mysterious life-giving material known as "vitamine," absolutely necessary to the young animal's full development.

The foregoing ingredients, with corn feed meal, linseed meal and flour middlings, constitute a complete food for the young calf. Its quality never varies, as does that of cow's milk, therefore insuring the steady healthy growth of the calf.

Sucrene Calf Meal can be prepared in a few minutes. Full feeding directions in every sack.

Order a trial sack from your dealer. You will find it the best feed investment you ever made. If he does not handle Sucrene Calf Meal write us his name and we will see that you are supplied.

Write for our Free Book on Calf Raising. Contains reliable information on every phase of the subject. Will save you money and trouble.

American Milling Company
Dept. 12 Peoria, Illinois
(16 Years America's Leading Mixed Feed Specialists)

Please send me Free Book on Calf Raising, also illustrated literature on feeds checked below. (12)
☐ Sucrene Dairy Feed
☐ Sucrene Calf Meal
☐ Sucrene Hog Meal
☐ Sucrene Poultry Mash
☐ Amco Fat Maker for steers
☐ Amco Dairy Feed

My dealer's name..................
P. O...................*State*..........
My name..................
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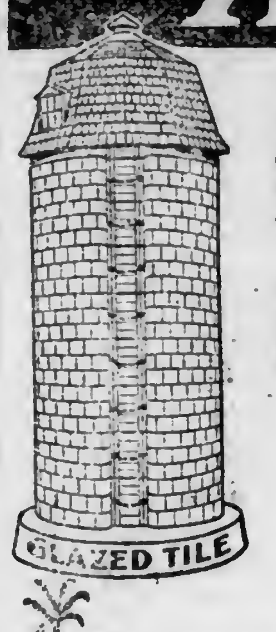
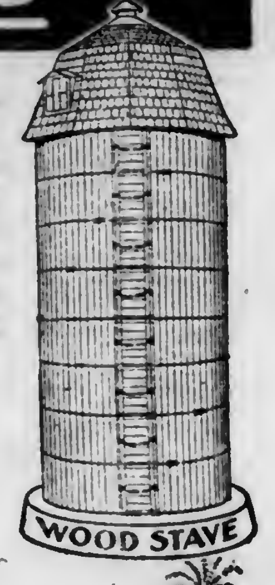
Put Your Faith In A *Kalamazoo*





A silo is a *permanent* investment, therefore purchasing a silo is not a question of paying a few dollars more or a few dollars less, but of getting a silo that is *right*—in design, in material, in construction.

"Kalamazoo" is the answer. For more than twenty-seven years thousands of successful farmers in all parts of America have put their faith in

Kalamazoo TILE AND WOOD SILOS
"The World's Standard"

Last year alone upwards of *six-thousand* new purchasers of silos unanimously decided in favor of the Kalamazoo. And those who bought twenty or more years ago still swear by the Kalamazoo because time and experience have proven conclusively that Kalamazoo silos are *right*, from every standpoint. There's a big dollar's worth of *value* in every dollar of the cost whether you buy a glazed tile or a wood stave Kalamazoo.

They're built to meet the needs of farmers who know and appreciate the feeding value of ensilage and know how a silo should be built to make and preserve ensilage *right*. Kalamazoo Silos excel in design, material and workmanship—combining every desirable feature a silo should have and embodying the knowledge acquired through long experience in silo building. You can't go wrong in buying a Kalamazoo.

GLAZED TILE SILOS—"Permanent as the Pyramids"—fire-proof, frost-proof, storm-proof, moisture-proof, acid-proof, decay-proof, vermin-proof. Galvanized reinforcing. Require no paint, no upkeep expense or repairs. First cost is the last cost. Easy to build—and once built your silo problem is solved *forever*.

WOOD STAVE SILOS—Your choice of four of the best time-defying woods. Kalamazoo Silos are manufactured complete ready to set up. Quickly and easily erected by inexperienced home labor. All Kalamazoo Silos, whether wood or tile, have the famous Kalamazoo Galvanized Steel Door Frames and continuous doors which are universally recognized as the best ever designed.

Write Today for our free descriptive booklet and details of our easy payment plan. If interested in an Ensilage Cutter, ask for Kalamazoo Cutter Catalog.

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PENNSYLVANIA FARMER, 261 S. 3rd St., Phila., Pa.

Feeding Queries Answered

Mangle Beets---Brewers' Grains

By Prof. FRED RASMUSSEN

Kindly give your opinion of mangle beets to feed with ensilage and grains. What would be the best mixture of oilmeal, bran and gluten? —J. B. H., Royersford, Pa.

Feeding trials show that one pound of dry matter in mangels is equal to one pound of mixed grain. It takes 11 pounds of mangels for each pound of dry matter. Eleven pounds of mangels would therefore be equal to one pound of mixed grain. In feeding dry cows it is possible on the above basis to substitute mangels successfully for one-half the grain ration when the cows are fed silage, mixed hay and grain. In addition to the value of mangels as compared with grain as demonstrated in feeding trials with ordinary practice of feeding, mangels have an additional value on the health and on the digestion of animals. Feeding mangels will also increase the consumption of other feeds. This is the reason that breeders of dairy cattle conducting official tests for high milk and butterfat records always aim to have mangels in the ration.

Kate Allenvail De Kol, Sold In Benchester Farm Sale

If a comparatively small amount of mangles are on hand they should be saved for special tests, or fed to the herd in small quantities because of their general effects upon the health of the animals, rather than be fed out in larger quantities in a short time. Mangels are low in protein and high in net energy, and if fed in quantities, should be fed with high protein feeds.

Among the feeds given in this inquiry are silage, mangels, bran, and oilmeal, all of which are laxative, and their combined effect will be too great. Since cottonseed meal is cheaper than oil meal, and contains more protein and is naturally constipating, it would be a good substitution to make in the ration. Save the oilmeal until mangels are used up. Make up a grain mixture as follows: 100 lbs. wheat bran, 100 lbs. gluten and 100 lbs. cottonseed meal. Feed at the rate of one pound of grain for every four pounds of milk.

The following would be the daily requirements for a 1,000-pound cow giving 20 pounds of 3.5 percent milk: 30 pounds of silage, six pounds of mixed hay, 10 pounds of mangels, and five pounds of the above grain mixture. If silage and hay are plentiful, feed all the cows will eat and cut down slightly on the grain.

Wet Brewers' Grains

A number of inquiries have come from the territory near Philadelphia relative to the feeding of wet brewers' grains. They ask for a suitable grain mixture to use with wet brewers' grains available in larger or smaller quantities with mixed hay and corn stover, also ration for period when wet grains are not available.

Four pounds of wet brewers' grains are equal to one pound of dry brewers' grains. This will vary slightly with a variation in the percent of water in the wet grains. It is generally considered that 20 lbs. per day is the maximum amount of wet brewers' grains which ought to be fed daily. Following are suggested rations:

Ration (1) with maximum of brewers' grains for a 1,000-lb. cow giving 20 lbs. of 3.5 percent milk; 6 lbs. corn stover, 14 lbs. mixed hay, 20 lbs. brewers' grains (wet), 1 lb. corn meal.

Ration (2) Roughages as in (1) and 10 lbs. brewers' grains (wet), 1½ lbs. corn meal and 1 lb. gluten.

Ration (3) Roughages as in (1), no brewers' grains, grain mixture: 50 lbs. corn meal, 100 lbs. gluten meal and 50 lbs. oilmeal. Feed 1 lb. grain for every 4.5 lbs. milk for Holstein and Ayrshire cows and 1 lb. of grain to every 4 lbs. of milk for Jersey and Guernsey cows.

It is understood that cottonseed meal is hard to get at present. When available, it can be substituted in equal amounts for oilmeal.

Selling Out.—Sometimes when grain is high and milk products do not seem to be climbing to the right level a farmer is likely to become discouraged and talk of selling the cows. However, based on a ten-year average, the dairy business is a very safe proposition as it is a sure means of obtaining a regular income without depleting the fertility of the land. A farmer may not be making much money on his dairy and yet when the milk checks are paying the taxes, insurance and general expenses of the farm it is difficult for the farmer to believe that the cattle are not as safe as any phase of his farming business.

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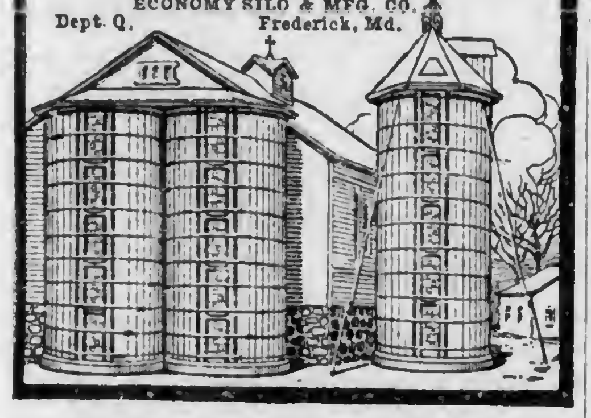

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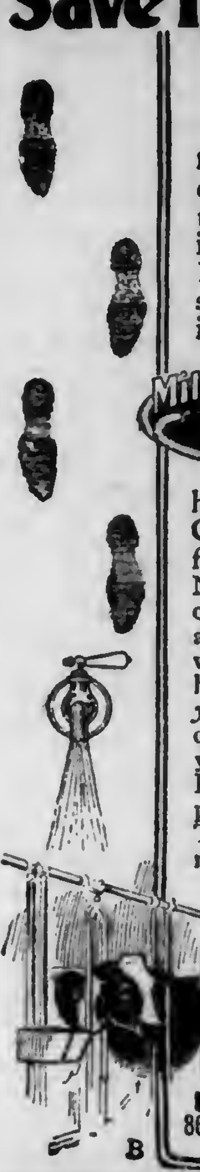
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SOLVING THE FARM LABOR PROBLEM

(Continued from Page 3.)

The farm labor representatives of the department will continue to dedevote all their time and energies to these tasks and they will keep in close touch with appropriate state and other agencies.

Fifth. The releasing of men for agricultural purposes, so far as possible, by replacing them with women and by diverting labor from relatively non-essential enterprises are matters which demand serious consideration. Conscription of labor for industrial purposes, of course, necessarily would present many difficulties. Powerful influences are operating, however, to bring about the release of labor and capital from less essential enterprises and their diversion into more urgent undertakings. These will become increasingly compelling as the situation develops. They will be aided by the growing realization on the part of the people generally of curtailing expenditures of non-essentials and of redirecting labor and capital into vital industries.

Sixth. Steps to see that any able-bodied men who are not doing a full and useful day's work shall be fully and regularly employed. This, of course, is a matter primarily for consideration by state and municipal authorities.

Seventh. The largest possible production and fullest use of farm labor-saving machinery. The Department has actively interested itself in securing priority for raw materials used in the manufacture of farm implements, and also in securing favorable consideration at the hands of transportation committees to provide facilities for moving the materials to the manufacturers and the completed products from the manufacturers to the distributors and also to the farmers. Both those dealing with priorities of materials and those dealing with priorities of transportation have evinced a complete willingness to assist. This is indicated by the fact that the priorities committee of the War Industries Board gave raw materials needed for farm implements a position of preference over all articles except those urgently required for military and naval purposes, and that the transportation committee took steps to secure the prompt movement of the raw materials and the manufactured articles.

RUNS GRAIN BINDER

Last spring I purchased a three-wheeled tractor with a rating of 8-16 horsepower. I regard this as the bets investment in farm machinery that I ever made. I can farm my place of 100 acres wit htwo horses less. I have done all my plowing with the tractor, cut all the grain, done my belt work, also some silo filling and threshing for neighbors.

I have had no trouble with the tractor, repairs for the year costing about $2. I plowed some fields in lands, others I started on the outside and plowed to the center. My fields are very irregular; do not have a field with four straight sides on the place. When I was cutting grain I kept the corners round and kept right on, not stopping to make the turn. I think the tractor can be made to pay on farms of 60 acres or over, because you can farm with less horses and get your work done when it should be done.—N. A Bean, Montgomery Co., Pa.

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261 S. 3rd St., Phila., Pa.

The Home Sewing—I

By M. JANE NEWCOMB,

Home Economy Department, Pennsylvania State College

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Reasons For Making Garments At Home

Because of the economic pressure brought to bear on us at the present time women must study to conserve the family income in every way possible. We all know that cheap, ready-made garments are inferior to homemade ones in quality of material and in workmanship, and that in getting them we are not getting value received for the money expended. By continually asking for something cheap we have created a demand for cheap products, and have not stopped to realize that a little more money expended for quality is true economy in the end.

If we will consider the value of time, labor, material and cost of production at the present time, we can readily see that a ready-made housedress bought for a dollar cannot have prime quality of material or workmanship. The making of any kind of a dress is worth more than that amount, to say nothing of the cost of the material put into it. For the same reason a corset cover at 25 cents or 39 cents cannot have quality in material or in workmanship.

Cheap garments are an extravagance. We must learn to know quality, judge of the true worth of good garments, and be willing to pay a fair price for them if we would create a demand for better ready-made clothing. In the meantime, many of us can make our contribution to the family income by ourselves making at least the underwear and the simple dresses for the members of our families.

The home sewer sometimes wonders, "Would I better learn a system of drafting?" It is not necessary, altho familiarity with methods of drafting patterns is a great help in learning to recognize the lines of a pattern. There are now so many good patterns on the market that, with the knowledge of how to take measures and make adjustments good results can be obtained with them. Patterns are made according to standard measurements and cannot, of course, provide for individual differences. Therefore we must know how to make adjustments in order to get the best results.

The only measurement necessary for buying a waist pattern is the bust measure. For buying the skirt pattern, the hip measure should be used, regardless of what the salespeople may say. Other measurements are necessary, however, in testing a pattern and making adjustments. Following are the measurements used in the waist and skirt:

Preliminary Taking of Measures

Waist Measures.—These should include: Waist, bust, neck, width of back, width of chest, underarm, length of back, length of front. They are taken as follows:

Bust.—Measure from the back, putting the tape line over the fullest part of the bust and bringing it up to a point half way between the neck and waist line in the back.

Neck.—Measure closely around the base of the neck.

Width of Back.—Measure across the back between the arms, four inches below the neck line. The neck line is marked by the prominent bone at the nape of the neck.

Width of Chest.—Measure across the front between the arms, four inches below the neck line; neck line is marked by the slightly hollow spot where the collar bones meet.

Length of Back.—Measure from the small bone at the nape of the neck to the waist line in the back.

Length of Front.—Measure from the neck line to the waist line in front, having the tape line loose.

Sleeve Measures

These should include: Armhole, upper arm, wrist, length from back to elbow, length from elbow to wrist. They are taken as follows:

Brown Broadcloth Suit; Latest Model

(Photo by Underwood and Underwood.)

Armhole.—Take easy measure around the arm at the shoulder over the shoulder-bone.

Upper Arm.—Measure around the arm, crowding the tape line up closely under the arm.

Sleeve Measure.—Measure the length of the sleeve on the inside from the armhole to the wrist-bone; also on the outside, with arm bent, from the shoulder to the elbow and from the elbow down to the wrist.

Wrist.—Measure over the knuckles of the hand, having the thumb laid over on the palm.

Measures for the Skirt

These include: Waist, hip, length of front, length of back, length of right side, length of left side. They are taken as follows:

Pin a tape around the waist and another around the fullest part of the hips parallel with the floor—not parallel with the tape at the waist. This last tape is usually six to eight inches below the waist line at the sides. Take the waist and hip measures over these tapes, making the waist measure snug and the hip measure easy. All measures of length should be taken from the lower edge of the tape at the waist to the floor—the front straight down, the sides over the fullest part of the hips, and the back swinging out slightly. The waist and hip measures guide in the selection of the commercial skirt pattern, and the other measures are necessary in adjusting a pattern to the figure.

Note.—This is the first of a series of articles by Miss Newcomb designed to help our readers in their spring sewing. The second article, discussing Adjustment of Patterns, will be published next week.—The Editor.

FLOWER POTS AND SAUCERS

When one has handsome decorated flower pots and saucers, it seems fitting that they should be used together, but as the material from which they are made is so porous, moisture often goes thru the saucer in sufficient quantities to ruin polished wood or painted surfaces. This trouble can be easily overcome by melting some paraffin and coating the inner surface of the saucer with it; or heat the saucer and rub a cake of paraffin over the inside of it until all the pores are filled. Water can never go thru the wax, and it will be safe to place it on the finest table or window sill.

As the bottoms of the saucers are often rough enough to scratch a polished surface, glue pieces of soft cloth or kid over them. This is also a good plan to follow with the bottom surface of jardinieres, many of which are left rough, and the remainder of the surface is finished perfectly.

When a jardiniere is cracked, it can be fixed so it will not leak by covering the cracks on the inside with strips of soft cloth dipped in melted paraffin. They should be pressed smoothly, and when dry they will remain in place and keep the water from going thru.

Jardinieres of pottery with any sort of decoration are not very durable, because the outer surface soon becomes loosened by the action of water and weather. However, they can be made as attractive as when new, and much more durable, by giving the outside one or more coats of varnish stain. The various kinds of oak, walnut and mahogany stains are all suitable. When this varnish stain is used on flower pots and saucers, it is well to leave the bottom of the pot in its natural state, to provide sufficient drainage surface.

To prevent the earth from sifting thru the opening into the saucer, before putting in any soil lay a piece of thin cloth in the bottom of the pot to cover the hole. This will hold the loose earth until it becomes packed so that it will hold itself in place.—Mrs. H. M. Woodward.

"MEATLESS TUESDAY" AND "WHEATLESS WEDNESDAY"

These are now familiar days to the American public. The movement has become nation wide in hotels, restaurants and dining cars. Ninety percent of the first-class hotels in the country have enlisted with the conservation army, and smaller establishments and restaurants are being rapidly swung into line.

The manager of one large enterprise reports a saving of 14,000 lbs. of meat every meatless Tuesday. He operates 86 restaurants in which thousands eat. One metropolitan hotel saves 2,000 lbs. of meat on meatless Tuesdays, and five barrels of flour on wheatless Wednesdays. Seafoods and poultry are served in place of beef, pork and mutton; and rye bread and corn bread instead of wheat breads. Some celebrated cooks have successfully substituted rice, corn, chestnut and potato flour for wheat in the making of pastries.

The thousands who have been served since these wholesale housekeepers signed the food pledge take the innovation good-naturedly. They search the war menus for new dishes. All the orders given on these days in all the restaurants and hotels added together are producing an impressive total to meat and wheat saved for shipping to our allies, and the amount is growing steadily as the movement spreads. Thus everybody is swinging into line, and the government will not have to make us conform by "bread cards", etc.

METHODICAL GIVING IN THESE CRUCIAL TIMES

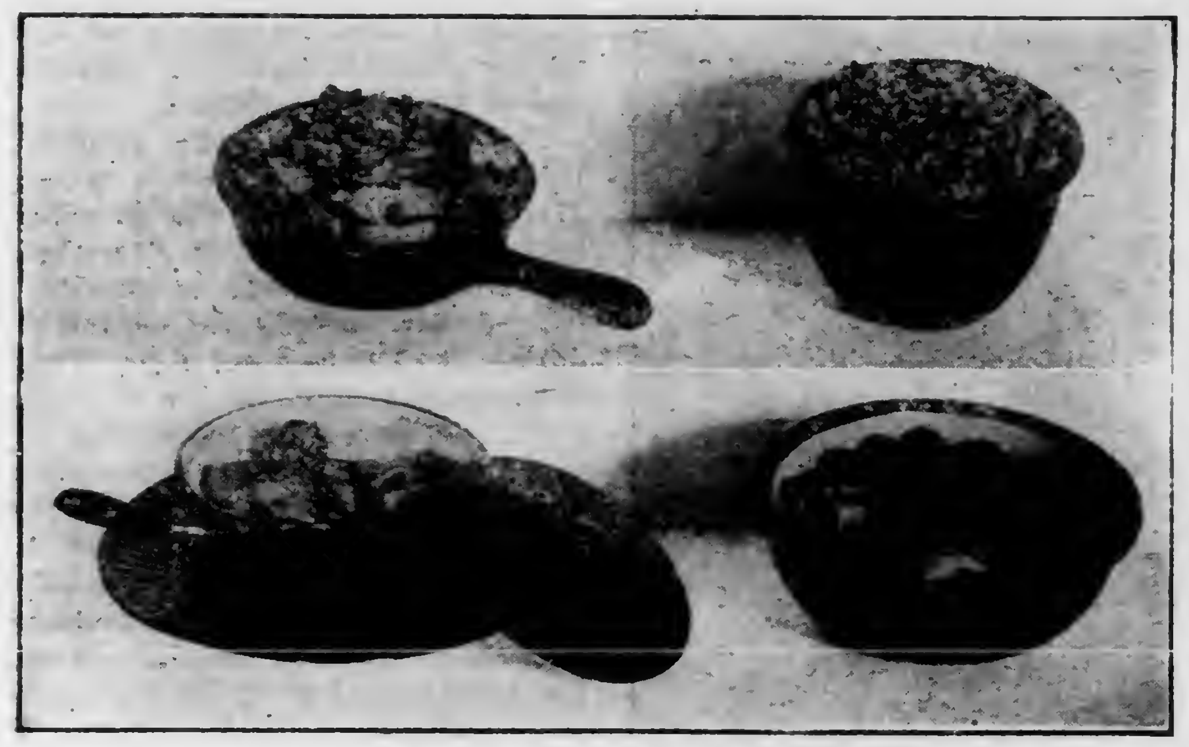
I heard a lady say the other day, "There is another call. Dear, oh, it is always something". How can we avert such a feeling of protest when these calls come? Don't you think it high time that we make this giving a part of our individual business?

The poor and needy we always have with us, always have had and always will have. The call to the colors (our colors) is yet so new that we have not got used to responding to all its necessary calls for aid. The Y. M. C. A. is a most wonderful organization. It is keeping our boys and men clean cut and buoyed during this struggle. The Red Cross Society and the Daughters of American Revolution, and other organizations, all are doing a noble work. So it is time we face the situation and get ready without delay to lay aside a certain portion of "conscience money". And "for conscience sake" let us not make it less than the ten percent the good Old Book mentions.

From our ten percent box, or from our "conscience money" or whatever we may desire to call such a savings, we can divide up so as to reach all calls at home and abroad, giving the most where our conscience draws our attention to the most needy call. See how much easier this will be than giving spasmodically. From our sinking fund we can give with a smile on our lips and happiness in our souls, and prove the good Scriptural saying, "It is is more blessed to give than to receive".

Those having sons or kin gone to war their hearts are already opened to the aid of the soldier. We who may not have a husband, son or brother liable to come back from the war with a leg off, an arm off, lamed, blind or helpless, a lifelong invalid perhaps, or perhaps not come home at all, must it be that we must feel the actual hurt before we can properly conduct our business affairs toward arranging for a sinking fund?

With a sinking fund once started, we will be surprised how the box will be kept always ready for a call. Many a conscience penny, nickel or dime will go into it; and more when we drop in our ten percent of our savings or income.—Mrs. Mary Shuman, Juniata Co., Pa.



Various Styles of Ramekins

These individual baking dishes in brown ware are very convenient, and not expensive.

CORNMEAL SUGGESTIONS

The following corn meal recipes, suggested by Miss Pearl MacDonald, in charge of home economics extension at the Pennsylvania State College, are in line with the present emphasis placed by the food administration on the use of corn products to replace wheat.

Cornmeal Mush.—1 cup cornmeal, 1 teaspoon salt, 3½ cups water, or 4 cups milk, or half milk and half water. Put all ingredients into the upper part of a double boiler. Bring to boiling point, boil 5 to 10 minutes, then put over hot water and cook for four hours or longer; or better set in can of boiling water, cover tightly, let boil 5 minutes, then put in fireless cooker for over night or if cooked during daytime, leave in fireless cooker at least five hours. Cornmeal should be well cooked, and this can not be done in a few minutes, or even half an hour. Baking it in Johnnycake requires less time because the oven heat is more effective.

Cornmeal Mush With Cheese.—Just before taking from fire add ½ cup or more of grated cheese to above recipe. Stir until the cheese melts and is thoroly incorporated with the mush.

Southern Corn Bread.—One quart buttermilk, not too sour; 1 teaspoon soda (1½ teaspoons of buttermilk contains much acid); 1 teaspoon salt; 1 egg well beaten; cornmeal to make a drop batter. Add soda, salt, and egg to buttermilk; then the cornmeal, beating well. Pour into a hot, greased pan. Bake in a moderate oven about 30 to 40 minutes. Cut into squares for serving.

Corn Meal Muffins.—One-half cup cornmeal; 1 cup flour; 3 teaspoons baking powder; 1 tablespoon sugar; 1 tablespoon melted butter; 1 teaspoon salt; ¾ cup milk; 1 egg. Mix and sift dry ingredients; add milk gradually, then the egg well beaten and the melted butter. Bake in hot greased muffin pans about 30 minutes in hot oven.

SCRAPPLE

Scrapple, a meat and cornmeal mush, and a good winter food, puts to good use hog heads, hearts and livers, and is a good use for corn meal also. The U. S. Department of Agriculture gives the following directions for preparing this food:

Ingredients

Whole hog heads, 10 lbs.; hog livers and hearts, 2½ lbs. (a small quantity of beef can be used also if desired); corn meal (yellow or mixed) 6 lbs; buckwheat or rye flour ½ lb; spices, as marjoram, sage, thyme and pepper in proportion as desired, 3 oz; salt ½ lb.; liquid in which meat is boiled; use a quantity equal to the weight of the combined solids. The proportion of the various ingredients may be varied to suit individual taste.

Directions for Preparing.—Clean the hog head thoroly, removing the eyes and ear tubes. Split the head lengthwise and remove the teeth and the soft bones in and near the nasal cavities. Place the hog heads and other meat in a large kettle with a liberal quantity of water and cook until the meat falls off the bones. Remove all the meat and soft tissue from the bones and chop the meat by passing it thru a meat grinder. Strain the cooking liquid to remove any small pieces of bone. Place the liquid back in the kettle. Heat to boiling point, at which time slowly add the meal and flour, and stir constantly to prevent the meal from forming into lumps and also to avoid scorching. Boil and stir until the mass becomes thick, and then add the salt, spices and chopped meat. Boil ten minutes, and while still hot pour the product into deep wet molds—bread pans will do. Pour two to four large spoonfuls of melted lard over the product in the pans. As soon as the product has cooled it is ready for use.

How to Serve Scrapple.—The usual way of serving scrapple is to cut it into slices about one-half inch thick, dust the slices with flour or cracker dust or dry cornmeal and fry until the outside is somewhat crisp. Serve hot. Fried apples are good with fried scrapple.

COOKING PRESERVED EGGS

Some people have the impression that preserved eggs are not good for boiling or similar serving by themselves. This impression is incorrect. We have served in every way eggs that had been in the water glass solution fully six months, and have found them perfectly satisfactory. Waterglass is a silicate of soda, which is sold on the market as a thick syrup. Fresh eggs preserved in this way will keep fresh and good for six or eight months. Neither their flavor nor cooking qualities are affected. They are good soft or hard cooked, or used in any baking or cooking.

When eggs preserved in waterglass are to be cooked in the shell, the shell should be punctured with a needle to prevent cracking in the boiling, because the waterglass closes up the pores of the egg, therefore the expanding moisture inside causes them to crack when they go in hot water unless punctured with the needle. (You know that when you drop a fresh egg into boiling water you can hear a slight hissing sound if you listen carefully close up to the eggs; this is the air on the inside of the egg being forced out thru the shell pores. Thus, one can understand why the tiny puncture with the needle makes the safety valve for eggs whose shell pores have been sealed with the waterglass.—The Editor.) Several dozen eggs packed in June when our hens are laying plenty come in handy in winter when eggs are 60 cents or more per dozen.—Mary A. Kintigh, Westmoreland Co., Pa.

NO SALT SHORTAGE

A county agent reports the following ingenious salt story which has gained circulation and some credence in his locality but which is absolutely without foundation. The U. S. Food Administration is said to have limited the sale of salt on the alleged grounds that if salt cannot be obtained, farmers will be unable to cure and pack pork for home consumption during the winter.

The Administration declares that there is no general shortage of salt, nor has it taken any steps toward limiting the use of salt. The people of the United States have been asked to voluntarily reduce their consumption of pork, beef and mutton to help feed the Allies. Reports of restrictions on salt as compulsory means to save meat are entirely without foundation.

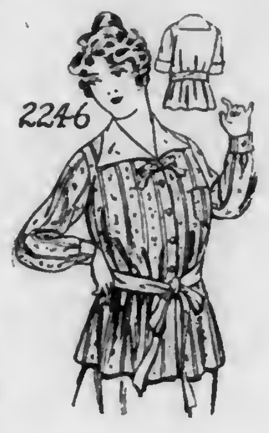
PENNSYLVANIA FARMER PATTERNS

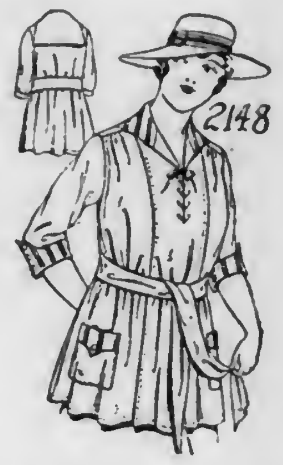
Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns.

Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

2246—Ladies' Dressing Sack.—Sleeve in either of two lengths. The pattern is in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 36 requires 3¾ yards of 36-inch material. Price, 10 cents.

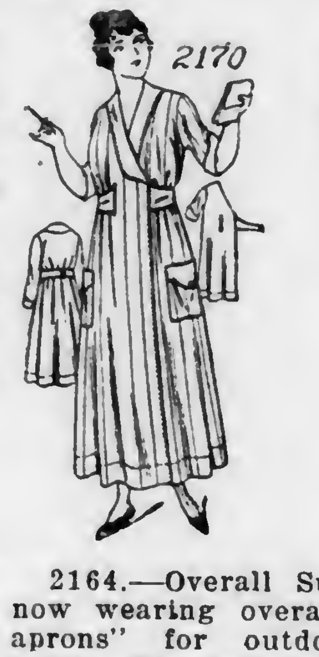
2148.—Ladies' House Blouse.—Sleeve in either of two lengths. The front is finished in panel effect. The back joins the front in yoke effect. The sleeve may be finished with a shaped cuff, or made a little longer, gathered to a band. The fullness at the waistline is held in place with a belt or girdle. The pattern is in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 3¼ yards of 44-inch material. Price, 10 cents.

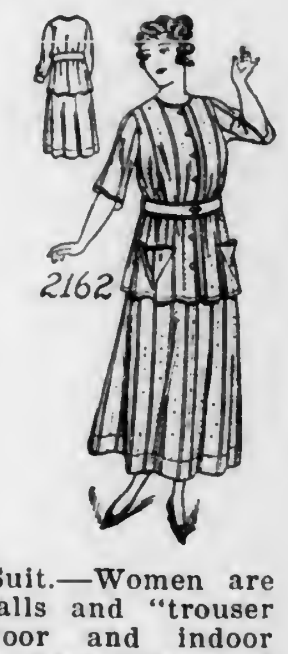




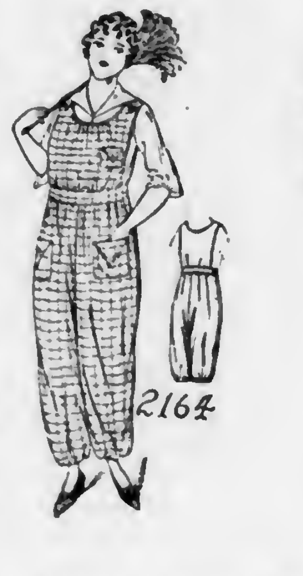
2170.—Reversible Front House Dress.—This model is made with reversible clothing, and its fullness is held by a belt that fastens in the center back. The sleeve may be in wrist or elbow length. Deep, ample pockets trim the fronts. The pattern is cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. It requires for a 38-inch size, 6⅞ yards of 36-inch material. The dress measures about three yards at the foot. Price, 10 cents.

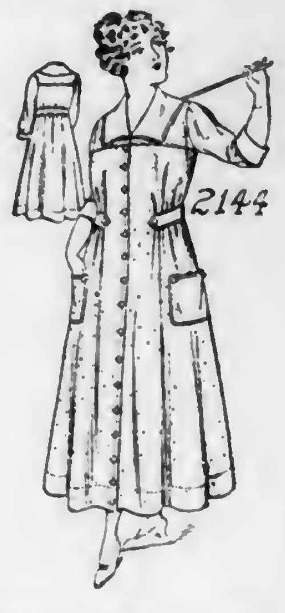
2162.—Ladies' Two-Piece House Dress. The skirt measures about 2⅝ yards at the foot. The pattern is cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inch bust measure. It requires for a 38-inch size, 5⅜ yards of 36-inch material. Price, 10 cents.





2164.—Overall Suit.—Women are now wearing overalls and "trouser aprons" for outdoor and indoor work. The pattern here illustrated is cut in four sizes: Small, 32-34; Medium, 36-38; Large, 40-42; Extra Large, 44-46 inches bust measure. Size Medium requires 4 yards of 36-inch material. Price, 10 cents.





2144.—Simple House Dress.—The closing is at the center front, and the fullness is held at the waistline, over sides and back, by a belt. The pattern is cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 36 requires 6¼ yards of 36-inch material. The skirt measures about 2¼ yards at the foot Price, 10 cents.

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Need for Nurses

The Government, through the Council of National Defense, is calling attention to the extreme need for a largely increased number of well trained graduate professional nurses for service not only in the military hospitals but also to replace nurses from civilian hospitals who have volunteered for military service. Emphasis is given to the standards required and to the fact that only professionally trained nurses can adequately serve both military and civilian requirements.

The Government has requested that all training schools immediately take steps necessary to increase the supply. It is important that every woman who can possibly serve and is ready to do so should become a student of a School of Nursing of recognized standards. The training cannot help but be of great advantage to any young woman whether she intends to adopt nursing as a profession or not, and there can be no greater service given to the Cause at this time by women, than by equipping themselves for this profession.

Mount Sinai Hospital Training School is planning to enlarge its classes during the period of the War. It is prepared now to enroll applicants for the Spring Class, which will open February 1, 1918. Application should be made to the Principal of the School, 1800 East 105th St., Cleveland, Ohio.

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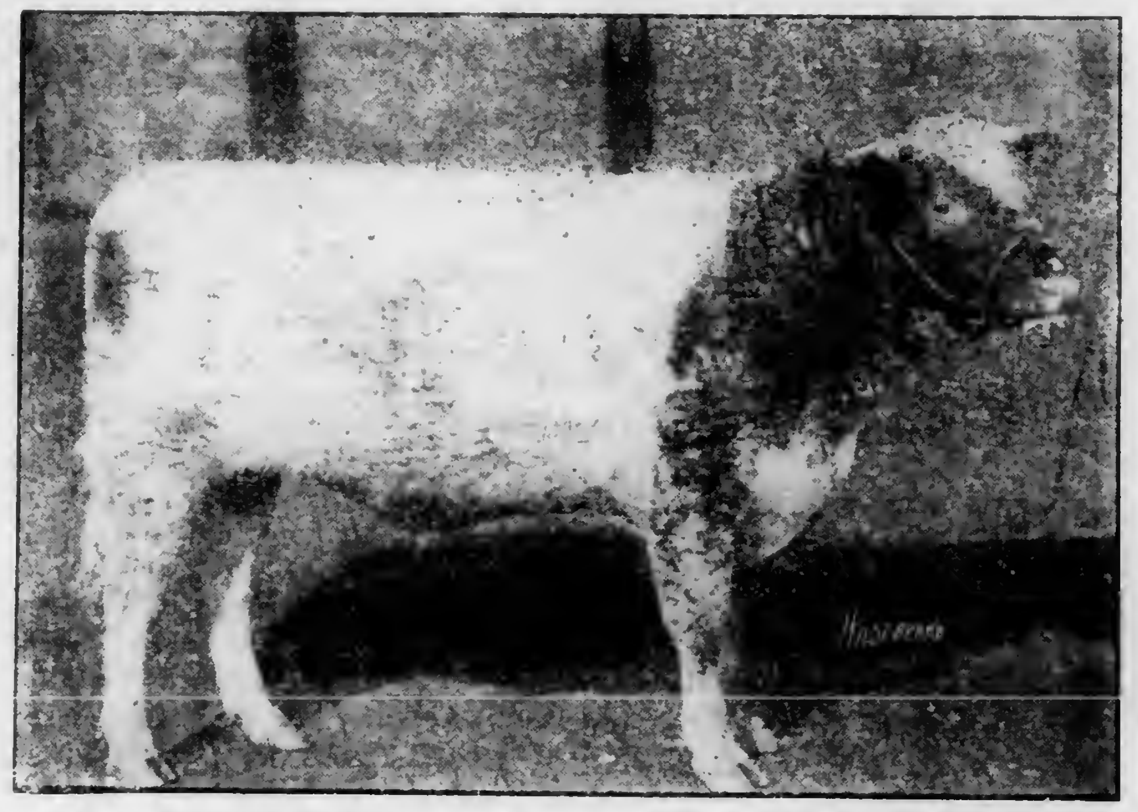
Live Stock

DOES IT PAY TO GRIND CORN FOR CATTLE?

Bulletin 149, Preparation of Corn for Fattening Steers, of the Missouri College of Agriculture, reports on three trials conducted during three different years. Ninety head of two-year-old steers were used in the experiments. During each trial different lots of steers received ear corn, shelled corn, crushed corn, crushed corn and cob, corn and cob meal, and ground corn. n other respects the ration was the same. Conclusions drawn from the experiments are:

The largest average daily gains were made by the cattle in lot 5 which was fed ground corn; lot 2 which was fed shelled corn stood second; lot 4 fed corn and cob meal third; lot 3 fed crushed corn and cob fourth; and lot 1 fed ear corn fifth.

Of every 100 pounds gain made by the cattle and pigs, the following gains or percentages were made by the pigs in the various lots: Lot 1, 21.63; lot 2, 16.02; lot 3, 10.63; lot 4, 4.98; and lot 5, 4.56.



British Emblem, Imported Shorthorn Bull That Sold For $3,250

It may be profitable to shell and grind corn for two-year-old steers when cattle and corn are high in price if it is not possible to have hogs utilize the undigested or waste feed.

The efficiency of corn measured by increase in live weight on both cattle and the hogs which follow is less with crushed and ground corn than wit hear and shelled corn.

The result shows a slight disadvantage in feeding crushed and with ear and shelled corn.

The cost of gain in live weight on the cattle, after deducting the value of the gain on the hogs, is noticeably greater where the corn is shelled, crushed and ground.

The cattle in lot 5 which were fed finely ground corn brought the highest price. Lot 4 which was fed corn and cob meal stood second; lot 2 fed shelled corn third; lot 3 fed crushed corn and cob fourth, and lot 1 which was fed ear corn brought the lowest price.

The net profit per steer shows that it is possible for a cattle feeder to be misled by considering the rapidity of gain in live weight and market price if he does not consider the cost of gains and net profit.

The average net profit per steer for the three trials was greatest in lot 1 which received ear corn; lot 2 fed shelled corn was second; lot 5, fed finely ground corn third; lot 3 fed crushed corn and cob fourth, and lot 4 fed corn and cob meal showed a slight loss.

The extra finish and higher market price for the cattle fed shelled, crushed and ground corn was not sufficient to offset the reduced gain in live weight on the cattle and hogs per unit of feed fed and the extra expense of preparing the corn.

A PROMISING SHORTHORN SIRE

Accompanying illustration shows British Emblem, a purebred Shorthorn bull recently imported from the British Isles. This bull was sold to a Kansas breeder and will be used in improvement of his herds. A few sires of the quality of British Emblem could be used to advantage in building up the beef herds of the East.

AGE IN ECONOMY OF GAINS IN HOGS

That pigs on a ration which approximately supplies their needs can profitably be carried to a heavier weight than that at which many hogs are marketed is shown by two experiments recently completed at the Ohio Experiment Station to determine the effect of age on the rate and economy of gains. Shortly after weaning time in the first test the pigs were placed on a ration of ten parts corn, four parts middlings, and one part of tankage. In the second test a ration of corn and tankage was fed. Beginning with the ration of eight parts of corn to one part of tankage the proportion of corn was increased one-fourth part weekly for the first 24 weeks and remained constant thereafter.

The table shows by 100-pound intervals the average results of the two experiments.

Effect Of Age On the Rate and Economy Of Gains

	Birth to 100 lb.	100 to 200 lb.	200 to 300 lb.	300 to 400 lb.	400 to 500 lb.
Number of pigs	26	20	15	10	5
Average daily gain, lbs. .	0.705	1.745	1.720	1.816	1.694
Average time reqd. days	137.72	361.831	434.734	361.831	434,734
Feed per 100-lbs. gain, lbs.	318.231	57.05	58.33	53.2	60.8

In the first experiment the rate of gain was greater for each successive interval until a weight of 300 pounds was reached. For the last two intervals it decreased each time. In the second test from 100 to 200 pounds in weight the pigs gained more rapidly than from 200 to 300 pounds but not as rapidly as from 300 to 400 pounds.

With one exception the feed required per unit of gain increased as the pigs increased in weight. This is to be expected when the character of increase in live weight is taken into account. Fat is costly to produce and is now high in value. Even the comparatively high feed requirement for gains produced by hogs between 400 and 500 pounds would, in many localities, permit a fair profit. Far more hogs should be carried to at least 300 pounds.

If heavy hogs sell at the premium the higher value of their carcass justifies, they can profitably be carried to a heavier weight than that of the average hog marketed today. Particularly is this true when the feed supply is above normal and the number of hogs below normal.

RATIONS FOR WINTERING BRED SOWS

Owing to the shortage of older breeding stock, a large number of gilts were bred this fall. In anticipating the probable demand for information on wintering such animals, the Missouri College of Agriculture conducted a feeding experiment last winter which indicates the probable cost of holding the animals.

Forty-two head of purebred Poland-China gilts, farrowed in late March and April of the previous spring, were selected in December, 1916, for the test. These gilts had been rather liberally fed on forage during the summer and fall. They were divided into six lots of seven each, and each lot was handled in exactly the same manner except that a different ration was fed. The rations they received were: Lot 1, corn 10 parts, tankage 1 part, alfalfa hay; lot 2, corn 10 parts, tankage 1 part, clover hay; lot 3, corn 10 parts, tankage 1 part; lot 4, corn 5 parts, old process linseed oil meal 1 part; lot 5, corn 8 parts, shorts 2 parts, tankage 1 part; lot 6, corn 8 parts, shorts 4 parts, bran 1 part, tankage 1 part.

The clover and alfalfa hay were number one to choice, and were fed once daily in a rack. The corn was ground, and all feed except hay was mixed with water at feeding time and was fed morning and evening. All lots were fed so that they were kept in good growing and breeding condition.

The animals were continued on the experiment until after April 1, 1917. The average cost of maintaining the different lots for 105 days was: Lot 1, $13.47; lot 2, $12.93; lot 3, $12.58; lot 4, $11.84; lot 5, $12.38; lot 6, $11.85. The average weight o fthe gilts at the beginning of the trial was 186 to 188 pounds, and at the close of the winter period the average weight was 265 to 270 pounds. The cost of keeping the animals is based on market feed prices, November 1, 1917.

FEED HOGS ALL THEY WILL EAT

Sufficient feed, as well as the right kind is essential in securing rapid gains in hogs and a desirable degree of fatness, or finish, when the hogs are marketed. Pigs that gain most rapidly generally bring the greatest profits because they do more business in a given time and thus reduce risk and overhead expenses. Often they are marketed earlier and bring a higher price. Quick gains generally mean a low feed requirement for a pound of gain.

Hogs gained slightly more than 1½ pounds daily for 62 days in one test at the Ohio Experiment Station when fed all they would consume without waste of ground corn mixed with one-eighth as much tankage. Other hogs given three-fourths of a feed gained only 1 1-6 pounds a day and required four pounds more grain for 100 pounds gain in live weight.

Pigs fed heavily in dry lot feeding have a higher market value per pound than others given a lighter ration. An abundance of feed for the hog serves the interests of both producers and consumers better than scanty rations do.

GET THE OX-WARBLE

This Insect Reduces Meat and Milk Production

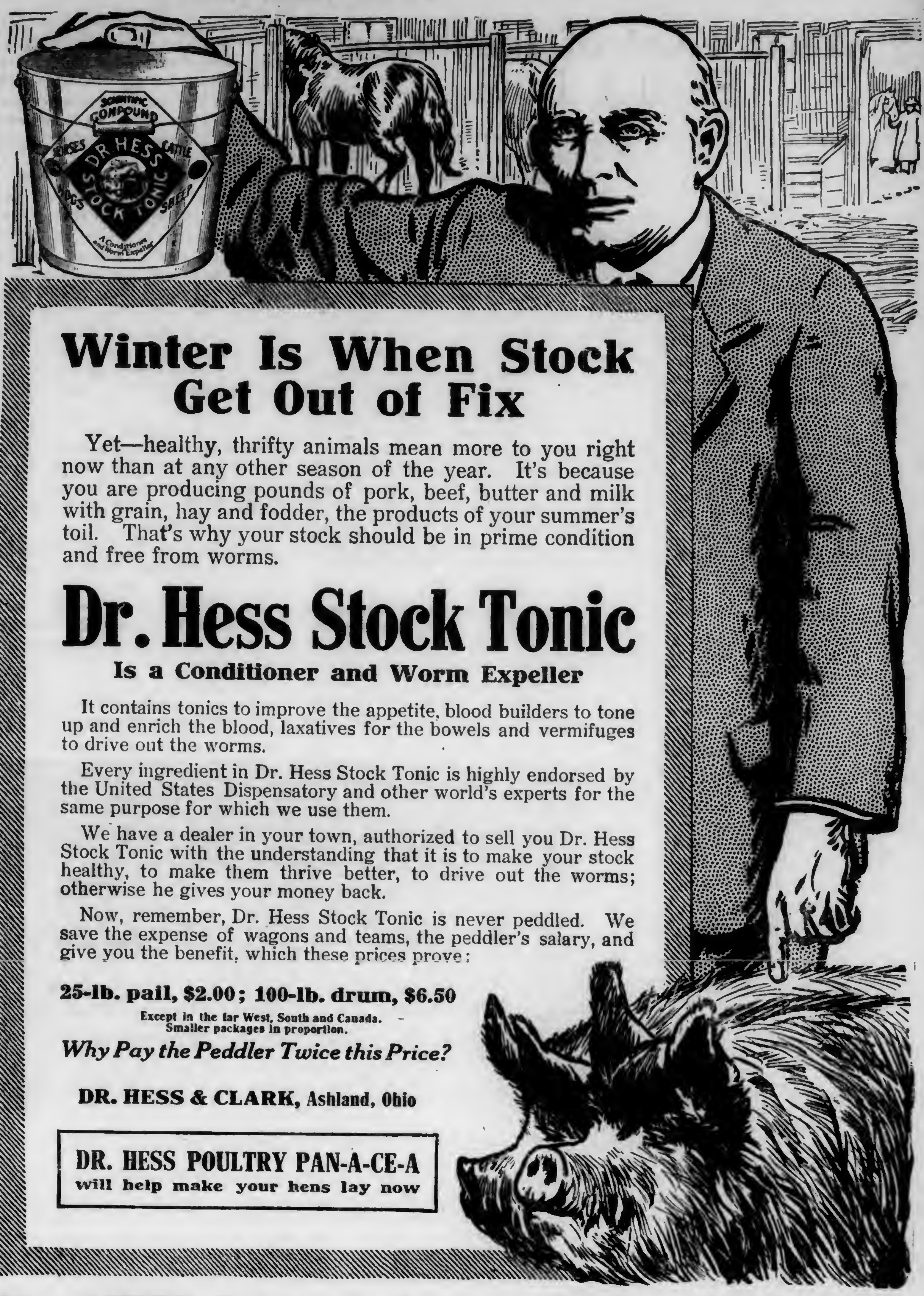
To save hides, much needed now for leather, cattle growers should get rid of the ox-warble. This insect pest also interferes with meat production and with the flow of milk. Large, fat maggots live during the winter, spring and early summer under the skin, along the back of cattle. The presence of each larva causes a lump to form, and a hole is made in the skin thru which the maggot breathes. The surrounding tissue becomes inflamed, and serum, on which the maggot feeds, collects in the cavity. In the large lumps pus may be present.

The parent insect is a stout, hairy, black and yellow fly about a half inch in length. It deposits the eggs in the summer, attaching them to the hairs, usually on the legs and especially around the heels. The young maggots may gain entrance to the body in two ways; some of the eggs are licked off and swallowed and the young maggot burrows thru the tissues. Other larvae may bore directly thru the skin and then work thru the body of the animal until they reach the layer under the skin along the back. The maggots mature in spring and early summer, leave the animal and fall to the ground. They remain in the soil from three to six weeks in the pupal stage and then transform into flies. There is only one generation each year.

How to Destroy Warbles

The best means of destroying this insect is to squeeze out the grubs and crush them underfoot early in the spring as soon as the hole in the skin is large enough. Killing the grub under the skin by pressure or by the application of grease or kerosene is not recommended, since it is likely to cause infection and produce a bad sore. Fortunately cattle are the only animals infested by this warble-fly, and if all the maggots in all the cattle in a given area were squeezed out and destroyed for one season the pest would be entirely exterminated in that territory. It would then be an easy matter to keep the territory free by giving attention to cattle brought from other regions.—Cornell Circular.

Top-dressing for wheat will help bring it thru the winter. Wheat will be needed next year more than ever.



Winter Is When Stock Get Out of Fix

Yet—healthy, thrifty animals mean more to you right now than at any other season of the year. It's because you are producing pounds of pork, beef, butter and milk with grain, hay and fodder, the products of your summer's toil. That's why your stock should be in prime condition and free from worms.

Dr. Hess Stock Tonic

Is a Conditioner and Worm Expeller

It contains tonics to improve the appetite, blood builders to tone up and enrich the blood, laxatives for the bowels and vermifuges to drive out the worms.

Every ingredient in Dr. Hess Stock Tonic is highly endorsed by the United States Dispensatory and other world's experts for the same purpose for which we use them.

We have a dealer in your town, authorized to sell you Dr. Hess Stock Tonic with the understanding that it is to make your stock healthy, to make them thrive better, to drive out the worms; otherwise he gives your money back.

Now, remember, Dr. Hess Stock Tonic is never peddled. We save the expense of wagons and teams, the peddler's salary, and give you the benefit, which these prices prove:

25-lb. pail, $2.00; 100-lb. drum, $6.50

Except in the far West, South and Canada.
Smaller packages in proportion.

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Made from the best of meat scrap, carefully sterilized. If you are not satisfied with results, we will return your money. Order now while we can supply you.

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We also make "Ideal Meat Scraps" best for increased egg production in winter. Write for prices, etc.

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Reliable Agents Wanted Everywhere.

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Tankage builds big frames to carry fattening. Experiment station reports show that tankage is the cheapest and the best feed for hogs and growing pigs.

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is carefully sterilized, especially prepared and ready to feed. It produces money makers for you. Buy direct from manufacturer and save money. Prices on request.

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HERTZLER & ZOOK Portable Wood **Saw**

is easy to operate. Only $13.15 saw made to which ripping table can be added. Guaranteed 1 year. Money refunded if not satisfactory. Send for catalog.

Hertzler & Zook Co.
Box 28 Belleville, Pa.

What Kind of Incubator Shall I Buy?

The question of what kind of an incubator to use is one which puzzles many, and a helpful explanation of the various types and kinds of incubators will probably be welcome.

For convenience incubators are generally classed as "mammoth" machines and small machines. The mammoth incubators run in sizes from 1,200 eggs upward as high as 10- or 20-thousand-egg capacity and sometimes higher. They are usually sectional in construction, heated by hot water and using one coal burning heater for the source of fuel. Gas or oil is used as fuel in some types and there are various distinctive features peculiar to the kind or make of incubator in question. The use of mammoth incubators is practically confined to the larger poultry breeding plants and those making a specialty of hatching in very large quantities.

The so-called small incubators range in size from 30 to 40 egg capacity up to 300,- 400- and even 600- or 800- egg capacity. The machines holding over 400 eggs or thereabouts are frequently called semi- or baby-mammoth sizes because of their relative size. The small machines are commonly classed as "hot water" or "hot air" types, which refers to the manner in which the egg chamber is heated. The "hot water" incubators depend upon the principle of radiation to distribute the heat, somewhat on the order of the hot water heating systems in homes. A metal tank or pipe system, usually made of copper, is built in fixed position into the incubator and is filled with water heated by a lamp attached to the machine. The heat radiates to the eggs on the tray in the egg chamber, keeping them at the required temperature during the hatch.

In the "hot air" type of incubator there are some variations in the exact principles of heating. In some makes warm air is introduced into the egg chamber and diffuses over the eggs; in others the heated air does not enter directly into the egg chamber but is confined first to a metal tank from which heat radiates to the eggs, and in still others a combination is employed.

There are several modifications of these heating principles in the different kinds of dependable incubators sold on the market. The advantages claimed by each manufacturer are carefully described in their catalogs and it is best to always thoroly study this literature to be familiar with them and make an intelligent choice.

The source of heat is commonly an oil-burning lamp. Some electric incubators are on the market and giving good satisfaction, but they are less common and can be used only where electricity is available.

Various manufacturers locate the lamp differently in their incubators. Some attach the lamp and heater on the side of the machine, some locate it under the machine near one end, and others place it in the center beneath the egg chamber. There are reasons for doing so in each case according to the distinctive type of incubator.

You will find both round and rectangular shapes in different incubators sold today, each distinctive in design and obtainable in various sizes. Some machines are all-metal, some are metal covered over wood, and others are all wood in construction. Some also are made of material similar to the pulp wall board used as a substitute for lath and plaster in building construction.

The big majority of incubators are completely assembled before leaving the factory with the exception of the legs, the lamp bracket and lamp, and the regulator. These are carefully placed inside the machine and the whole carefully crated for shipment. It is possible, on the other hand, for one to buy the plans and separate parts and build his own incubator if he chooses. Such opportunities are offered, and appeal to many who like to do such work. On a third hand, some incubators are assembled only in part, shipped crated to the customer knocked-down flat, and have to be put together before they can be used.

Incubators are sold everywhere in the country thru local dealers, or direct by mail according to the selling plan of the manufacturer. Inquiry with any of the responsible advertisers will give you explicit information on their product and methods.

Early Hatching and Good Brooding Make for Success

Next to your choice of a good hatcher, the decision as to the best size suitable for your needs is of greatest importance. Do not make the mistake of buying too large an incubator for your needs. It is generally conceded that two smaller machines, for instance of 150-egg capacity each, are preferable to one 300-egg size, unless the larger one can be filled with eggs not more than a week or ten days old when put into the machines. The fresher the eggs the more even and satisfactory will be the hatch.

TREATING THE CROP BOUND HEN

The crop bound condition in hens is usually caused by the gradual accumulation of indigestible matter which forms itself into a balled mass. In some cases the trouble is due to some foreign substance causing a stoppage in the outlet of the crop, but most cases are due to the former cause.

In our flocks the majority of cases of crop bound have been caused by balled masses of binder twine which the fowls have picked out of the litter and eaten. This twine—eaten a piece now and then—in time forms a matted mass which soon entirely fills the crop.

Binder twine in the floor litter is due to the fact that practically all grain is cut by binder and tied in sheaves with twine. In thrashing the grain the twine, of course, goes thru with the straw. Thus an ordinary bale of straw may contain several dozen pieces.

The only remedy in cases such as this where manipulation with the hands will not break up the mass is to open the crop and remove the offending matter. Pluck enough feathers from the breast to leave a strip of bare skin two inches long and half an inch wide. Then with a sharp knife cut lengthwise of the bird an opening an inch and a half long over crop. The first cut should only be made thru the skin. After the blood stops the cutting of the crop may be undertaken. The slit in the crop should not be over an inch long as it will become much larger while the work is being done and should be as near the top of the crop as possible.

The matter in the crop should be cut into small pieces by inserting a pair of scissors. The pieces should then be removed with tweezers. Care should be taken to see that the outlet of the crop is not obstructed before closing.

The operation of closing consists of simply sewing up the crop with a needle and white thread, taking two or three stitches in the cut in the crop and the same in the skin. In stitching the crop leave ends long enough to hang out of the wound about an inch. Care must be taken not to sew the crop and skin together. Knots should be tied in the stitches taken in the outside skin. It is advisable to wash the wound with warm water before closing.

The bird should be fed lightly on very moist mash, preferably cooked, no grain being allowed for two weeks. The operation is not difficult to perform and rarely results fatally if the work is undertaken before the bird has become weakened from the crop-bound condition.

The fowls being operated upon show very little signs of feeling pain. —K.

TREATMENT FOR LICE

The best treatment for body lice on hens is an application of blue ointment. Blue ointment is a standard preparation and can be made up by any druggist. It is composed of mercury, a poison, and should be diluted with an equal part of lard or vaseline. A pellet, the size of a grain of wheat, rubbed around the vent, will not only get the lice on the hen at the time the application is made, but will also destroy those that hatch later from eggs. It isn't necessary to apply the ointment under the wings. Merely apply it about the vent, as all the lice on the hen make visits to this portion in order to obtain moisture. In applying the ointment, be careful to rub it well down into the skin, and not smear the feathers with it.

In treating chicks it is advisable to dilute the ointment with two parts of lard or vaseline, and use a smaller quantity.

Lice powders are also good, but not as good as blue ointment, because more than one application must be made. The powder will destroy the lice on the hen when the dusting is made, and another dusting must be made in a week in order to get the lice that hatch after the first dusting. A good lice powder is made as follows: Thoroly mix two parts gasoline with one part carbolic acid. Keep from fire when mixing. Add air-slaked lime to the mixture until the liquid is entirely taken up. Work well with a paddle to pulverize all lumps. Let stand for a day or two and a pinkish powder, having a strong carbolic acid odor, results. Use in a sifter-top can. A baking powder can, with a number of small holes punched thru the lid, makes a good container.

Another good lice powder is made of equal parts of road dust and tobacco dust.

Still another good powder is flour of sulphur.

As a matter of fact, any sort of powder is effective in destroying lice. Lice have no lungs. They breathe thru the pores of the skin, and any powder that is sufficiently fine to clog these pores will make short work of the pests.—T. Z. Richey.

SELECTING HATCHING EGGS

The most important thing in selecting eggs for hatching is to know that they are from strong sturdy stock—stock that is capable of producing eggs of strong fertility. With the assurance that the stock meets these requirements there need be little fear of poor hatches, provided the necessary details of incubation are properly attended to.

Eggs selected for incubation should be of average size and good shape. Eggs weighing 25 ounces to the dozen are considered average. Ridged or odd shaped eggs should never be used for incubation. Such eggs may develop life, but they rarely produce a chick because the deformity of the shell prevents the growth of the chick. Deformed chicks are usually the result when such eggs do hatch. Thin shelled eggs are wasted when placed in the incubator as they will break in turning, not only causing the loss of the eggs, but also smearing the other eggs which is exceedingly detrimental to hatching eggs.

Better results will be obtained if the eggs intended for hatching are kept for two or three days before being placed in the incubator. However, the period of storage should not be too long, as the longer the eggs are stored the less chance there is of a good hatch. Best results will be obtained from eggs not more than one week old. Eggs more than two weeks old I do not consider worth placing in the machine. Delayed hatches and chicks of poor vitality are frequently the result of the eggs being too old.

It is a very good plan to place eggs intended for incubation in regular egg trays when brought in from the breeding pens. These trays should be kept in some kind of a dust proof closet where they will not lack pure air. Eggs kept in this manner can be placed in the incubator without again handling them, thus saving labor.

Eggs in storage for hatching should be laid on their sides. They should be turned at least once every two days by rolling with the hands. The temperature of the storage place should be about 50 degrees. High temperature while in storage is very detrimental to a good hatch. A temperature of 80 for a few days will do untold harm. It is far less harmful to have as low a temperature as 35.—J. Raymond Kessler, Chester Co., Pa.

INTER-STATE NOTES

(Continued from Page 11.)

schedule of prices for milk shipped direct f.o.b. Philadelphia to go into effect on and after January 7, 1918. When milk is not tested the price is to be 9¼ cents per quart:.

Test per cent	Price per 100 lbs	Price per quart
3.	$3.86	8.4
3.1	3.90	8.5
3.2	3.94	8.6
3.3	3.98	8.65
3.4	4.02	8.7
3.5	4.06	8.8
3.6	4.10	8.9
3.7	4.14	9.0
3.8	4.18	9.1
3.9	4.22	9.2
4.0	4.26	9.25
4.1	4.30	9.3
4.2	4.34	9.4
4.3	4.38	9.5
4.4	4.42	9.6
4.5	4.46	9.7
4.6	4.50	9.8
4.7	4.54	9.9
4.8	4.58	10.
4.9	4.62	10.05
5.0	4.66	10.1

Receiving Station Prices

The Inter-State Milk Producers' Association also issues the following schedule of prices for three percent milk at receiving stations; the price for all other tests to vary at the rate of four cents for every 1-10 point above this test. Freight rates quoted are for 40-quart cans; rates on 46-quart cans are 115 percent of 40-quart rate, plus three percent tax.

Miles	Freight Price	Rates Per Cwt.
11 to 20 "	.196	3.43
21 to 30 "	.207	3.42
31 to 40 "	.219	3.41
41 to 50 "	.230	3.40
51 to 60 "	.240	3.39
61 to 70 "	.250	3.38
71 to 80 "	.260	3.37
81 to 90 "	.269	3.36
91 to 100 "	.277	3.35
101 to 110 "	.285	3.34
111 to 120 "	2.94	3.34
121 to 130 "	.302	3.33
131 to 140 "	.310	3.32
141 to 150 "	.317	3.31
151 to 160 "	.324	3.31
161 to 170 "	.332	3.30
171 to 180 "	.339	3.29
181 to 190 "	.346	3.28
191 to 200 "	.353	3.28

Other Markets

The Federal Commission investigating the New York market reported on December 31st and set a price of 9¾ cents per quart to the farmers. This basic price is for four percent milk and subject to the usual barn score variations. No price has yet been set for the Baltimore market but the executive committee of the State Council of Defense made public its report on the cost of production and distribution on January 3. This report put the average cost of production at 41.26 cents per gallon. The average cost of transportation was put at 2.12 cents per gallon and the average cost of distribution at 20.65 cents per gallon. While making no price for farmers the report concluded with the suggestion that "an adequate supply of milk must be maintained at any cost". A decision on the price to farmers may be expected soon.

PRESERVING BUTTER FOR HOME USE

When proper attention is given to a few important details, butter can be stored at home for future consumption. The butter should be made from cream which has not become over-ripe, having a clean acid flavor. Any off-flavors present in the cream are very likely to become intensified in the butter. Extreme care also should be exercised in working the butter. The salt should be evenly distributed and the butter worked free of all water or buttermilk.

The dairy department of the New Jersey Experiment Station recommends that the butter be placed in pound or two-pound crocks which have been previously scalded in boiling water. Pack the butter firmly and leave no air spaces. Wrap each crock of butter with a piece of muslin which has been previously boiled. Place the crocks containing the butter in a larger crock which has been sterilized with boiling water and allow to cool in a clean place. Over the crocks containing the butter, pour brine of such a strength that it will float an egg. To every 3 pounds of salt used, add 1 pound of sugar and ¼ pound of powdered saltpeter. The brine mixture should be boiled, skimmed, and allowed to cool before using.

When crocks are not available, the butter may be made in prints or rolls, which should be wrapped in buttercloth or parchment paper and immersed in the brine.

Butter is also sometimes "salted down." Select a crock or stone jar of suitable size, scald thoroly and allow to cool. Pack the butter in layers of about 4 inches each. Between the layers place a light covering of the following mixture: 1 pound loaf sugar, 3 pounds salt and ¼ pound pulverized saltpeter. Leave space of about 3 inches on top and keep covered with a strong solution of brine.

Bedding.—Some dairymen who bed their cows with little straw and then find the animals unclean in the morning are likely to complain that the cow is a "dirty beast". The same cattle if allowed to spend the night in the pasture would doubtless come to the barn in the morning with their udders soft and clean. It simply proves that the cow is a fairly clean animal if given an opportunity to keep herself clean

Eczema.—Several of our cows appear to have an itchy condition of the skin on upper part of neck and back, but so far as I can see they are not troubled with lice. What do you recommend for them? J. I. E., Portage, Pa.—Apply one part coal-tar disinfectant and 40 parts water, once a day. Wet only the itchy parts of skin, but if the hide appears to be dry and scaly, apply one part oxide of zinc and five parts petroleum, three times a week.

Play Safe!

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Farm Products Prices and Prospects

THE POTATO GROWER AND INCREASED PRODUCTION

The appeal made by D. F. Houston, Secretary of Agriculture, to the farmers to "keep up the pace," leads me to present the viewpoint of many farmers as this viewpoint has been expressed to me.

In order to approach this subject rightly it is necessary to go back to the spring of 1917. The general impression among farmers is that the U. S. Department of Agriculture, the Food Administration, the state agricultural colleges and the press did everything possible to stimulate increased production of all kinds of crops. While it is true that some of us did not encourage increased acreage of such a crop as potatoes, nevertheless there were so many who did that the farmers think the recommendation was general. As 1917 was the first year such an effort had been made and in view of the fact that the prices of 1916, for the most part, were usually high it was not difficult to secure the co-operation of the farmers along these lines. Another thing which stimulated the farmers to exert themselves to the limit was the fact that they were given assurance that the price during 1917 would be good. Many of them took this assurance to mean a guarantee.

It is not my intention to cover the entire list of crops, but I wish to write especially in reference to potatoes. Whether it was due to the appeal that was made or to the high prices for potatoes in 1916 there were according to the Government report 700,000 more acres of potatoes planted in 1917 than during normal seasons. In some sections of the country the weather conditions were such that the potato crop was not as good as the growers expected it to be. In spite of this fact, however, according to the Government crop estimate 442,500,000 bushels were produced, an increase of 92,500,000 bushels over the average of the years of 1911 to 1916 inclusive. This estimate does not take into full account the increase in production as a result of the "War Gardens."

During the early part of the shipping season in 1917 prices paid for potatoes were quite satisfactory. The movement was restricted, however, because of car shortage. This fact, no doubt, had much to do with the high level of prices during the early fall.

The severe, early freeze which caught many of the potatoes in the ground not only resulted in a heavy loss to many of the growers in the northern sections, but when the potatoes which were dug after the freeze were placed on the market there was an immediate fall in price and a restriction in movement.

At about this time the Food Administration, thru several shippers' organizations which were formed in such states as Michigan, Wisconsin, Minnesota and New York, began to put into operation the recommendation of the Bureau of Markets in reference to potato grades. This recommendation provided for two grades of potatoes, a thing to which most of the sections just mentioned were not accustomed.

In many sections of Michigan early killing frosts and dry weather caused the development of a large percentage of small tubers. When the grading was first started the screens used were of square mesh, one and fifteen-sixteenth inches in size. This allowed a large percentage of the small potatoes to pass thru into the second grade. In most cases the square mesh screens have been replaced by the round mesh and these are proving more satisfactory.

The price at which the second grade has been bought in comparison with the first grade has been 60 percent of the price paid for U. S. Grade No. 1. Because of the price paid for No. 2 grade many of the growers thruout this state have become very much dissatisfied as soon as they had to sell their potatoes according to the two grades. At about this time the Michigan Business Farmer, the organ of the Gleaner organization, published letters from men expressing their disapproval of the grades. The agitation thru the Michigan Business Farmer and later thru the grange has resulted in a wave of dissatisfaction and discontent among a large class of potato growers which must be given serious consideration. Numerous resolutions have been passed by different gatherings to the effect that, if these grades are used next season, they will grow only a sufficient number of potatoes for their own use. The attitude of these men in many cases is such that, if they continue in the same frame of mind until planting time, it is not only going to have an influence on the acreage of potatoes planted but on the acreage of other staple crops as well. To get the co-operation of the farmers the Food Administration must have their good will. Much of the present dissatisfaction is due to misunderstanding and misjudgment.

Space will not permit entering into a lengthy presentation of the arguments to show why the use of two grades will eventually be of great benefit to the growers, dealers and consumers. The chief argument advanced by the Food Administration is one which relates to war conditions. It is to the effect that in view of the fact that we have nearly 100,000,000 bushels more potatoes than we would sell to good advantage under ordinary conditions, if the growers are to receive an acceptable price for these potatoes, only the best of them should reach the market. They claim that, if potatoes were shipped this season as they have been heretofore, the price would be very likely to drop to a very low level before the season is over, if there would not actually be potatoes in large quantities left unused at the end of the season. By eliminating imperfect potatoes, as must be done in putting up either U. S. Grade No. 1 or No. 2, a considerable percentage of the undesirable potatoes from the standpoint of consumption will be left on the farms. In this connection reference is made to seriously scabby, frosted and badly mutilated potatoes.

The statement has been made by various men who are in close touch with potato market conditions that in years past, when a large crop was produced, if 15 percent or 20 percent of the potatoes had been left at the farm the remaining 80 percent or 85 percent would have brought more money than when all were put on the market. Another reason for keeping as many potatoes of little or no food value as possible at home is that the best use may be made of the available car supply.

So far as the price which has been paid for Grade No. 2 potatoes is concerned, it is a matter which will in time adjust itself to actual conditions of supply and demand. Many buyers when urged to grade according to these two grades were disposed to feel that the second grade would not sell to good advantage. It is not strange that the dealers under these circumstances should set a price which they felt would be safe. It has without any doubt worked a hardship to many growers this season. It is the opinion of those who have given this matter a close and long study that when the grades eventually become well known and a market for them established the U. S. Grade No. 1 will sell at a considerable premium over any inferior grade and that the U. S. Grade No. 2 will sell much closer to U. S. Grade No. 1 than is the case at present. All movements of so wide adaptation and which so interfere with usual practices are bound to meet with opposition.

The fact that there always has been more or less feeling between the producers and the dealers naturally makes the growers suspicious. They are usually willing to believe that the dealers are getting much the best end of the deal. There are, of course, dealers who will take advantage of any opportunity which may present itself to get ahead of the growers. On the other hand there are many dealers, and I believe they are in the majority, who are trying to do an honest, straightforward business. These dealers realize that they must have the co-operation of the growers if their business is to be profitable. It is the opinion of the writer that, as the potato growers learn more about the potato grades and the reasons for using them, and as the grades become better known in the markets, the feeling of dissatisfaction will gradually lessen.—C. W. Waid, in Market Growers' Journal.

HORSE MEAT FOR PORTLAND

For several years there have been suggestions and rumors in this country that horseflesh would again become part of the diet. It is a well known fact that in the time of the Civil War in certain parts of the country horseflesh was eaten by the people. There has always existed a sentimental aversion for this meat, but it is not at all uncommon for this dish to be served in some of the European countries. There is a shop in Portland, Ore., devoted exclusively to the sale of this meat, and the proprietor reports that his business has steadily increased since its establishment about a year ago. His trade is made up very largely of people of foreign birth who have seen and eaten this meat before, but the number of Americans patronizing the shop is increasing. The supply is composed almost altogether of two and three year old horses or ponies, which are supplied very largely by the Indians of the Warm Springs and Umatilla Reservations. About ten are required each week and the general procedure is to buy them up in car load lots, ship to Portland and kill them as needed. Most of these ponies average around 700 to 750 pounds and will dress out about 55 percent. The ponies are purchased by the head as the market has not been developed on a weight basis. Prevailing prices will help show why the popularity of the meat is increasing.

Steak, round, porterhouse or sirloin, 12½ cents per pound; potroast, 10; flank, 7; ribstew, 6; soupbone, 4; bologna, 12½.

RAILROADS RECOMMEND STANDARD CONTAINERS

Standard containers for fruit and vegetables were adopted at a meeting recently held at the Pennsylvania Station, under the auspices of the Fruit and Vegetable Transportation Association of the South and East. Among the 150 persons who attended the conference were representatives of the Bureau of Markets of the United States Department of Agriculture, New York City Department of Health, railroad freight traffic officials and claim agents, steamship men, shippers and manufacturers of boxes, crates, barrels and other containers.

The Fruit and Vegetable Transportation Association of the South and East has for some time past been working toward the ultimate adoption of a standard container for each kind of fruit and vegetable, with a view to helping the shipper to get his products to the markets in first-class condition. Scores of containers were exhibited at the meeting, and after careful inspection and lengthy discussion, 14 different types of containers were approved and recommended for adoption by all shippers of perishable freight on Eastern and Southern railroads.

Some of the standard containers include the following: Lettuce crate; six-basket crate, in which tomatoes, peaches, plums, peppers, okra, persimmons, gauvas, beans, avocator pears, peas, limes and kumquats may be shipped; pineapple crate; orange box; celery crate; squash and eggplant 50-pound crate, in which beets, peppers, cauliflower and green corn may be shipped; cabbage crate; asparagus crate; two kinds of crate for cantaloupe and muskmelon; crate for cucumbers, potatoes and other fruits and vegetables not otherwise specified; onion crate; two types of barrels of fruits and vegetables and other dry commodities except cranberries, the open stave barrel and tight stave barrel.

Grange

SCARCITY OF LABOR, AND OTHER PROBLEMS DISCUSSED AT FARMERS' INSTITUTE

A two days' farmers' institute was held at Zionsville, Pa., with P. S. Fenstermacher as chairman. He stated that the scarcity of labor added to the farmers' difficulties, and criticised the draft laws. "How are you going to produce more crops with less help?" he asked. "Import Chinese?"

He explained that the country has been handicapped by too many theories, which are easily advanced. He pointed out the large task of the farmer in connection with the world war. "We are going to win this war, and we have to feed the allies and ourselves beside. The community proposition in the west might work here. We must do our utmost to raise more cattle and hogs. I think it is a crime to slaughter a heifer calf. We must also conserve our fats, or we will soon be in the predicament of Germany. We should not buy our cattle or hogs, but should raise them. We must return to the old way of producing our own food products. That is true conservation.

"The farmer has not been figuring the cost of milk production, but he is learning it, being taught by the cost of his feed, which exceeds his milk check. Farmers are too easy. The farming business is the only one that has ever been successful without a profit. We farmers have not been educated or organized to the point where we know what we are doing. There is no half-way thing to the farmers present problems. We must take a stand to bring this war to a successful conclusion as soon as possible."

Theodore Wittman discussed "Poultry As the Farmer Can Handle It," and said in part: "There are five million less hens. They are gone because they failed to pay. Feed during the last six months has increased 75 percent to 125 percent, while the price of eggs has increased only 25 percent. Give a farmer what he must have for eggs, and he will produce eggs. Pennsylvania farmers keep every chicken that is a pullet, no matter what kind of a misfit it is. That is a crime, because that runty pullet will eat several dollars worth of valuable grain, of which there is a shortage, and give back not half the amount in food and eggs.

"The day is coming when the bulk of our eggs will be produced by big poultry farms. Hens must be well fed with plenty of feed they like. I would look for a hen with a bright red comb the year round; a bright eye, hard plumage and sloping back. Then if you apply the Hogan system you are all right. We must have wheat to feed hens. Boiled oats is the next best feed."

D. H. Watts spoke on "Fertilizing the Orchard." He pointed out that the first thing to do is to get the right kind of orchard, and that, in this respect, many Pennsylvania farmers were deceived. He scored "illegal traffic in trees," which "runs into millions of dollars." Good results can be had from a young orchard, he explained, "by fertilizing immediately around the trees. You should obtain a good average growth every year on a young orchard; say, 10 to 12 inches on the terminal branches. If they have a good, vigorous growth many of the trees will overcome diseases. If you don't have enough moisture it does not matter how much fertilizer you may have; because you won't get the proper results. After the trees are established give them a little nitrate of soda, then, before the orchard comes to fruiting, depend on the vegetation. Alfalfa is the best. Throw some around the trees to mulch them. Grow your early crops on it, sowing to hold the moisture, and plow again in the spring, saving money on commercial fertilizer. Hen manure is fine for orchards."

"How to Raise Thirty-five Bushels of Wheat to the Acre," was I. A. Schuey's theme. "I did not always raise 35 bushels of wheat to the acre," he said, "because I did not know how. But I believe we should have 50 bushels. We can get it with living soil. The living soil can be created by having humus in it, and not permitting cattle to tramp it, which produces dead soil.

"You want to deepen your soil, and you can do that easily if you work more humus in it. Deeper soil retains moisture more easily. After plowing, roll or harrow your land the same day, before the rain gets on it. Wet plowing produces clods. You want to plow just as quickly as the oats is off. After heavy rains disk it to get a perfect seed bed.

"To grow 35 bushels of wheat to the acre you must raise wheat having a head three or four inches long. Use fertilizer. It costs more, but it pays.

"I would not consider selling hay on a high soil. I would sooner cut it and let it lie on the field.

"I sow two bushels of wheat to the acre, because I sow late. Earlier, I would only sow one and a half bushels. I drill it in only sufficiently to cover it."

On the second day's institute W. T. Wittman discussed "Modern Ways and Methods to Make Poultry Pay." He said: "The best way to make hens pay is to have better chicks. Too many chickens are good only on paper. They may take prizes, but they are penned up, and their vitality is gone. A chicken lays according to its ability to eat and digest lots of good food.

"The English White Leghorn is as easy to raise as any. It is deeply inbred, but is sturdy, strong, and a good layer. The White Leghorn is not a farm chicken, but belongs in the specialty class."—H. M. East, Jr.

A GOOD EXHIBIT

A correspondent at Queen Ann, Md., states that the recent exhibit held at Cordova under the management of Corgova grange was a decided success in every way. The exhibition rooms were crowded with visitors most of the time. The exhibit of properly packed fruit was especially valuable. The state of Maryland gave $100 for premiums and this amount was augmented by private subscription. The premiums were divided between the club exhibitors and the Boys' and Girls' clubs.

Prof. Richardson, of College Park, addressed the audience on the last evening of the meeting.

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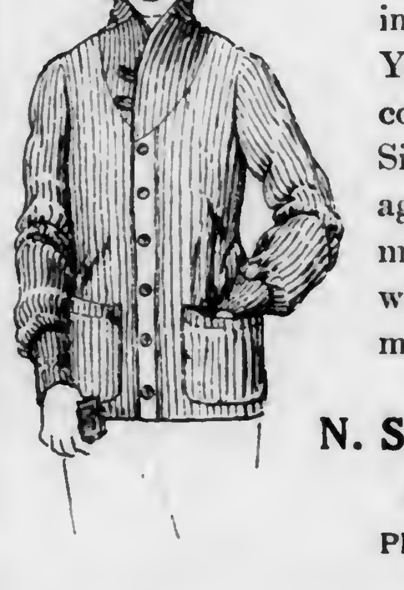

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NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

SYNOPSIS OF PREVIOUS CHAPTERS

Henry de Spain is manager of the stage line running between the rich mines at Spanish Sinks and the little town of Sleepy Cat. In protecting the property of the stage line he is brought into frequent conflicts with the members of Morgan's Gang, with headquarters at Morgan's Gap. The gang regards de Spain as its enemy. De Spain complicates matters by falling in love with Nan Morgan, niece of the leader of the Gang. They become engaged and met as they could on the shale stretches between the Gap and the adjoining town. Their meetings were finally discovered, and old Duke Morgan, Nan's uncle, ordered her not to see De Spain again.

CHAPTER XXI

A Try Out

Sleepy Cat is not so large a place that one would ordinarily have much trouble in finding a man if one searched well. But Duke Morgan drove into town next morning and had to stay for three days waiting for a chance to meet de Spain. Duke was not a man to talk much when he had anything of moment to put thru, and he had left home determined, before he came back, to finish for good with his enemy.

De Spain himself had been putting off for weeks every business that would bear putting off, and had been forced at length to run down to Medicine Bend to buy horses. Nan, after her uncle left home—justly apprehensive of his intentions—made frantic efforts to get word to de Spain of what was impending. She could not telegraph—a publicity that she dreaded would have followed at once. De Spain had expected to be back in two days. Such a letter as she could have sent would not reach him at Medicine Bend.

As it was, a distressing amount of talk did attend Duke's efforts to get track of de Spain. Sleepy Cat had but one interpretation for his inquiries—and a fight, if one occurred between these men, it was conceded would be historic in the annals of the town. Its anticipation was food for all of the rumors of three days of suspense. For the town they were three days of thrilling expectation; for Nan, isolated, without a confidant, not knowing what to do or which way to turn, they were the three bitterest days of anxiety she had ever known.

Desperate with suspense at the end of the second day—wild for a scrap of news, yet dreading one—she saddled her pony and rode alone into Sleepy Cat after nightfall to meet the train on which de Spain had told her he would return from the East. She rode straight to the hospital, instead of going to the livery barn, and leaving her horse, got supper and walked by way of unfrequented streets down town to the station to wait for the train.

Never had she felt so miserable, so helpless, so forsaken, so alone. With the thought of her nearest relative, the man who had been a father to her and provided a home for her as long as she could remember, seeking to kill him whose devotion had given her all the happiness she had ever known, and whose safety meant her only pledge of happiness for the future—her heart sank.

When the big train drew slowly, almost noiselessly, in, Nan took her place where no incoming passengers could escape her gaze and waited for de Spain. Scanning eagerly the figures of the men that walked up the long platform and approached the station exit, the fear that she would not see him battled with the hope that he would still appear. But when all the arrivals had been accounted for, he had not come.

She turned, heavy-hearted, to walk back uptown, trying to think of whom she might seek some information concerning de Spain's whereabouts, when her eye fell on a man standing not ten feet away at the door of the baggage room. He was alone and seemed to be watching the changing of the engines, but Nan thought she knew him by sight. The rather long, straight, black hair under the broad-brimmed Stetson hat marked the man known and hated in the Gap as "the Indian." Here, she said to herself, was a chance. De Spain, she recalled, spoke of no one more often than this man. He seemed wholly disengaged.

Repressing her nervous timidity, Nan walked over to him. "Aren't you Mr. Scott?" she asked abruptly.

Scott, turning to her, touched his hat as if quite unaware until that moment of her existence. "Did Mr. de Spain get off this train?" she asked, as Scott acknowledged his identity.

"I didn't see him. I guess he didn't come tonight." Nan noticed the impassive manner of his speaking and the low, even tones. "I was kind of looking for him myself."

"Is there another train tonight he could come on?"

"I don't think he will be back now before tomorrow night."

Nan, much disappointed, looked up the line and down. "I rode in this afternoon from Music Mountain especially to see him." Scott, without commenting, smiled with understanding and encouragement, and Nan was so filled with anxiety that she welcomed a chance to talk to somebody. "I've often heard him speak of you," she ventured, searching the dark eyes, and watching the open, kindly smile characteristic of the man. Scott put his right hand out at his side. "I've ridden with that boy since he was so high."

"I know he thinks everything of you."

"I think a lot of him."

"You don't know me?" she said tentatively.

His answer concealed all that was necessary. "Not to speak to, no."

"I am Nan Morgan."

"I know your name pretty well." he explained; nothing seemed to disturb his smile.

"And I came in—because I was worried over something and wanted to see Mr. de Spain."

"He is buying horses North of Medicine Bend. The rain-storm yesterday likely kept him back some. I don't think you need worry much over anything tho."

"I don't mean I am worrying about Mr. de Spain at Medicine Bend," disclaimed Nan with a trace of embarrassment.

"I know what you mean," smiled Bob Scott. She regarded him questioningly. He returned her gaze reassuringly as if he was confident of his ground. "Did your pony come along all right after you left the foot-hills this afternoon?"

Nan opened her eyes. "How did you know I came thru the foot-hills?"

"I was over that way today." Something in the continuous smile enlightened her more than the word. "I noticed your pony was lame. You stopped to look at his foot."

"You were behind me," exclaimed Nan.

"I didn't see you," he countered prudently.

She seemed to fathom something from the expression of his face. "You couldn't have known I was coming in," she said quickly.

"No." He paused. Her eyes seemed to invite a further confidence. "But after you started it would be a pity if any harm came to you on the road."

"You knew Uncle Duke was in town?" Scott nodded. "Do you know why I came?"

"I made a guess at it. I don't think you need worry over anything."

"Has Uncle Duke been talking?"

"Your Uncle Duke doesn't talk much, you know. But he had to ask questions."

"Did you follow me down from the hospital tonight?"

"I was coming from my house after supper. I only kept close enough to you to be handy."

"Oh, I understand. And you are very kind. I don't know what to do now."

"Go back to the hospital for the night. I will send Henry de Spain up there just as soon as he comes to town."

"Suppose Uncle Duke sees him first."

"I'll see that he doesn't see him first."

"Where is Uncle Duke tonight, do you know?"

"Lefever says he is up-street somewhere."

"That means Tenison's," said Nan. "You need not be afraid to speak plainly, as I must. Uncle Duke is very angry—I am deathly afraid of their meeting."

Even de Spain himself, when he came back the next night, seemed hardly able to reassure her. Nan, who had stayed at the hospital, awaited him there, whither Scott had directed him, with her burden of anxiety still upon her. When she had told all her story, de Spain laughed at her fears. "I'll bring that man around, Nan, don't worry. Don't believe we shall ever fight. I may not be able to bring him around tomorrow, or next week, but I'll do it. It takes two to quarrel, you know."

"But you don't know how unreasoning Uncle Duke is when he is angry," said Nan mournfully. "He won't listen to anybody. He always would listen to me until now. Now he says, I have gone back on him, and he doesn't care what happens. Think, Henry, where it would put me if either of you should kill the other. Henry, I've been thinking it all over for three days now. I see what must come. It will break both of our hearts, I know, but they will be broken anyway. There is no way out, Henry—none."

"Nan, what do you mean?"

"You must give me up."

They were sitting in the hospital garden, he at her side on the bench that he called their bench. It was here he had made his unbreakable avowal—here, he had afterwards told her, that he began to live. "Give you up," he echoed with gentleness. "How could I do that? You're like the morning for me, Nan. Without you there's no day; you're the kiss of the mountain wind and the light of the stars to me. Without the thought of you I'd sicken and faint in the saddle, I'd lose my way in the hills; without you there would be no tomorrow. No matter where I am, no matter how I feel, if I think of you strength wells into my heart like a spring. I never could give you up."

He told her all would be well because it must be well; that she must trust him; that he would bring her safe thru every danger and every storm if she would only stick to him. And Nan, sobbing her fears one by one out on his breast, put her arms around his neck and whispered that for life or death, she would stick.

It was not hard for de Spain next morning to find Duke Morgan. He was anxious on Nan's account to meet him early. The difficulty was to meet him without the mob of hangers-on whose appetite had been whetted with the prospect of death, and perhaps more than one, in the meeting of men whose supremacy with the gun had never been successfully disputed. It required all the diplomacy of Lefever to "pull off" a conference between the two which should not, from the start be hopeless, because of a crowd of Duke's partisans whose presence would egg him on, in spite of everything, to combat. But toward eleven o'clock in the morning, de Spain having been concealed like a circus performer every minute earlier, Duke Morgan was found, alone, in a barber's hands in the Mountain House. At the moment Duke left the revolving-chair and walked to the cigar stand to pay his check, de Spain entered the shop thru the rear door opening from the hotel office.

Passing with an easy step the row of barbers lined up in waiting beside their chairs, de Spain walked straight down the open aisle, behind Morgan's back. While Duke bent over the case to select a cigar, de Spain, passing, placed himself at the mountain-man's side and between him and the street sunshine. It was taking an advantage, de Spain was well aware, but under the circumstances he thought himself entitled to a good light on Duke's eye.

De Spain wore an ordinary sack street suit, with no sign of a weapon about him; but none of those who considered themselves favored spectators of a long-awaited encounter felt any doubt as to his ability to put his hand on one at incomparably short notice. There was, however, no trace of hostility or suspicion in de Spain's greeting.

"Hello, Duke Morgan," he said frankly. Morgan looked around. His face hardened when he saw de Spain, and he involuntarily took a short step backward. De Spain, with his left hand lying carelessly on the cigar case, faced him. "I heard you wanted to see me," continued de Spain. "I want to see you. How's your back since you went home?"

Morgan eyed him with a mixture of suspicion and animosity. He took what was to him the most significant part of de Spain's greeting first and threw his response into words as short as words could be chopped: "What do you want to see me about?"

"Nothing unpleasant, I hope," returned de Spain. "Let's sit down a minute."

"Say what you got to say."

"Well, don't take my head off, Duke. I was sorry to hear you were hurt. And I've been trying to figure out how to make it easier for you to get to and from town while you are getting strong. Jeffries and I both feel there's been a lot of unnecessary hard feelings between the Morgans and the company, and we want to ask you to accept this to show some of it is ended." De Spain put his left hand into his side pocket and held out an unsealed envelope to Morgan. Duke, taking the envelope, eyed it distrustfully. "What's this?" he demanded, opening it and drawing out a card.

"Something for easier riding. An annual pass for you and one over the stage line between Calabasas and Sleepy Cat—with Mr. Jeffries' compliments."

Like a flash, Morgan tore the pass in two and threw it angrily to the floor. "Tell 'Mr.' Jeffries," he exclaimed violently, "to——"

The man that chanced at that moment to be lying in the nearest chair slid quietly but imperiously out from under the razor and started with the barbers for the rear door, wiping the lather from one unshaven side of his face with a neck towel as he took his hasty way. At the back of the shop a fat man, sitting in a chair on the high, shoe-shining platform, while a negro boy polished him, rose at Morgan's imprecation and tried to step over the bootblack's head to the floor below. The boy, trying to get out of the way, jumped back, and the fat man fell, or pretended to fall, over him—for it may be seen that the man, despite his size, had lighted like a cat on his feet and was instantly half-way up to the front of the shop, exclaiming profanely but collectedly at the lad's awkwardness, before de Spain had had time to reply to the insult.

The noise and confusion of the incident were considerable. Morgan was too old a fighter to look behind him at a critical moment. No man could say he had meant to draw when he stamped the card underfoot, but de Spain read it in his eye and knew that Lefever's sudden diversion at the rear had made him hesitate; the crisis passed like a flash. "Sorry you feel that way, Duke," returned de Spain, undisturbed. "It is a courtesy we were glad to extend. And I want to speak to you about Nan, too."

Morgan's face was livid. "What about her?"

"She has given me permission to ask your consent to our marriage," said de Spain, "sometime in the reasonable future."

It was difficult for Duke to speak at all, he was so infuriated. "You can get my consent in just one way," he managed to say, "that's by getting me."

"Then I'm afraid I'll never get it, for I'll never 'get' you, Duke."

A torrent of oaths fell from Morgan's cracked lips. He tried to tell de Spain in his fury that he knew all about his underhanded work, he called him more than one hard name, made no secret of his deadly enmity, and challenged him to end their differences then and there.

De Spain did not move. His left hand again lay on the cigar case. "Duke," he said, when his antagonist had exhausted his vituperation, "I wouldn't fight you; anyway. You're crazy angry at me for no reason on earth. If you'll give me just one good reason for feeling the way you do toward me, and the way you've always acted toward me since I came up to this country, I'll fight you."

"Pull your gun," cried Morgan with an imprecation.

"I won't do it. You call me a coward. Ask these boys here in the shop whether they agree with you on that. You might as well call me an isosceles triangle. You're just crazy sore at me when I want to be friends with you. Instead of pulling my gun, Duke, I'll lay it out on the case here, to show you that all I ask of you is to talk reason." De Spain, reaching with his left hand under the lapel of his coat, took a Colt's revolver from its breast harness and laid it, the muzzle toward himself, on the plate-glass top of the cigar stand. It reduced him to the necessity of a spring into Morgan for the smallest chance for his life if Morgan should draw; but de Spain was a desperate gambler in such matters even at twenty-eight, he laid his wagers on what he could read in another's eye.

"There's more reason than one why I shouldn't fight you," he said evenly. "Duke, you're old enough to be my father—do you realize that? What's the good of our shooting each other up?" he asked, ignoring Morgan's furious interruptions. "Who's to look after Nan when you go—as you must, before very many years? Have you ever asked yourself that? Do you want to leave her to that pack of wolves in the Gap? You know, just as well as I do, the Gap is no place for a high-bred, fine-grained girl like Nan Morgan. But the Gap is your home, and you've done right to keep her under your roof and under your eye. Do you think I'd like to pull a trigger on a man that's been a father to Nan? Damnation, Duke, could you expect me to do it willingly? Nan is a queen. The best in the world isn't good enough for her—I'm not good enough, I know that. She's dear to you, she is dear to me. If you really want to see me try to use a gun, send me a man that will insult or abuse her. If you want to use your own gun, use it on me if I ever insult or abuse her—is that fair?"

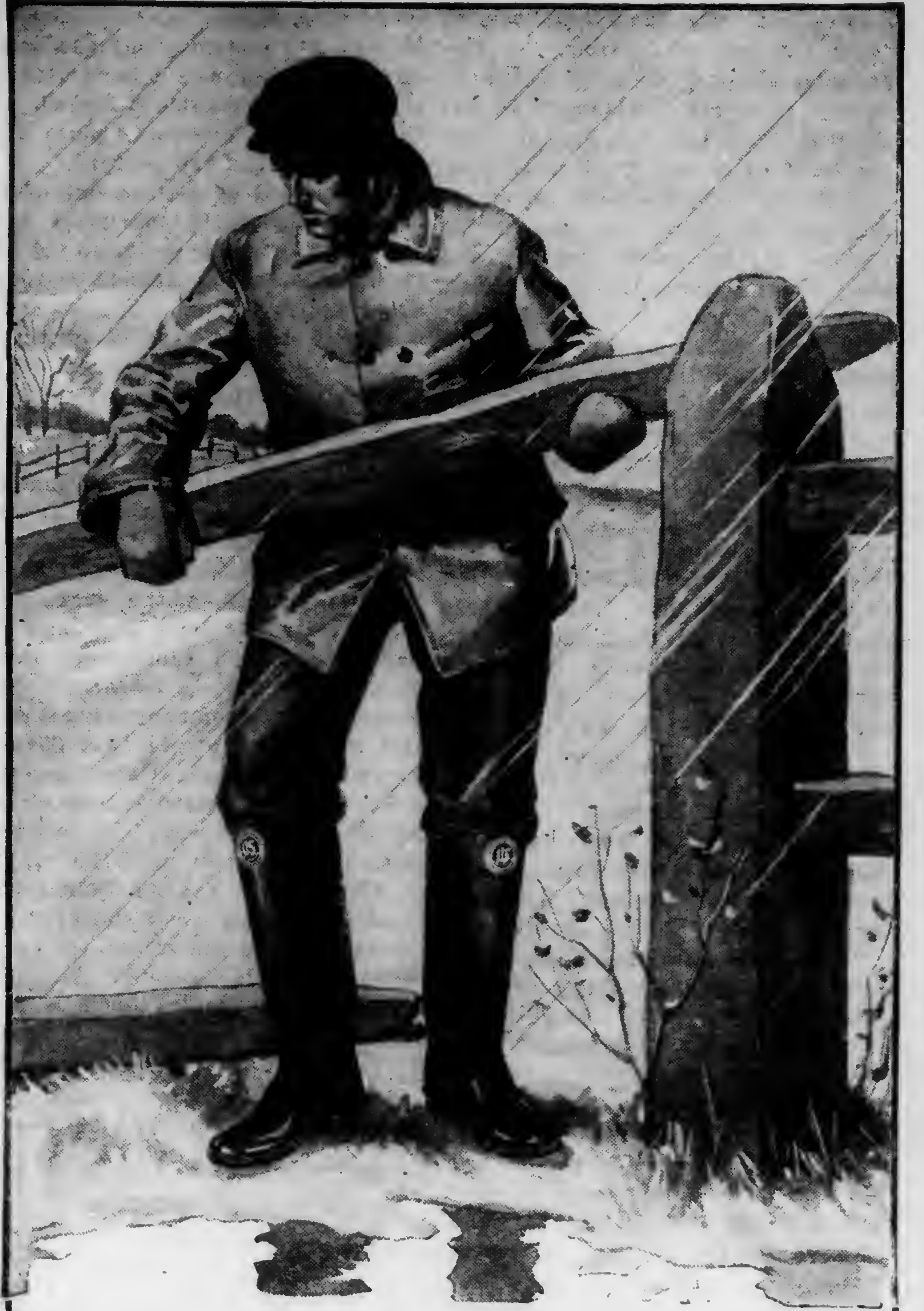
"Damn your fine words," exclaimed Morgan slowly and implacably. "They don't pull any wool over my eyes. I know you, de Spain—I know your breed——"

"What's that?"

Morgan checked himself at that tone. "You can't sneak into my affairs any deeper," he cried. "Keep away from my blood! I know how to take care of my own. I'll do it. So help me God, if you ever take any one of my kin away from me—it'll be over my dead body!" He ended with a bitter oath and a final taunt. "Is that fair?"

"No," retorted de Spain good-naturedly, "it's not fair. And some day, Duke, you'll be the first to say so. You won't shake hands with me now, so I'll go. But the day will come when you will."

He covered his revolver with his left hand and placed it under his



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coat. The fat man who had been leaning patiently against a barber's chair ten feet away from the disputants, stepped forward again as lightly as a cat. "Henry," he exclaimed, in a low but urgent tone, his hand extended, "just a minute. There's a long-distance telephone call on the wire for you." He pointed to the office door. "Take the first booth, Henry. Hello, Duke," he added, greeting Morgan with an extended hand, as de Spain walked back. "How are you making it, old man?"

Duke Morgan grunted.

"Sorry to interrupt your talk," continued Lefever. "But the barns at Calabasas are burning—telephone wires from there cut, too—they had to pick up the Thief River trunk line to get a message thru. Makes it bad, doesn't it?" Lefever pulled a wry face. "Duke, there's somebody yet around Calabasas that needs hanging, isn't there? Yes."

CHAPTER XXII

Gale Persists

When within an hour de Spain joined Nan, tense with suspense and anxiety, at the hospital, she tried hard to read his news in his face.

"Have you seen him?" she asked eagerly. De Spain nodded. "What does he say?"

"Nothing very reasonable."

Her face fell. "I knew he wouldn't. Tell me all about it, Henry—everything."

She listened keenly to every word. De Spain gave her a pretty accurate recital of the interview, and Nan's apprehension grew with her hearing of it.

"I knew it," she repeated with conviction. "I know him better than you know him. What shall we do?"

De Spain took both her hands. He held them against his breast and stood looking into her eyes. When he regarded her in such a way her doubts and fears seemed mean and trivial. He spoke only one word, but there was a world of confidence in his tone. "Stick."

She arched her brows as she returned his gaze, and with a little troubled laugh drew closer. "Stick, Nan," he repeated. "It will come out all right."

She paused a moment. "How can you know?"

"I know because its got to. I talked it all over with my best friend in Medicine Bend, the other day."

"Who, Henry?"

"Whispering Smith. He laughed at your uncle's opposing us. He said if your uncle only knew it, its the best thing that could happen for him. And he said if all the marriages opposed by old folks had been stopped, there wouldn't have been young folks enough left to milk the cows."

"Henry, what is this report about the Calabasas barns burning?"

"The old Number One barn is gone and some of the old stages. We didn't lose any horses, and the other barns are all right. Some of our Calabasas or Gap friends, probably. No matter, we'll get them all rounded up after a while, Nan. Then, some fine day, we're going to get married."

De Spain rode that night to Calabasas to look into the story of the fire.

McAlpin, swathed in bandages, made no bones about accusing the common enemy. No witnesses could be found to throw any more light on the inquiry than the barn boss himself. And de Spain made only a pretense of a formal investigation. If he had any doubts about the origin of the fire they would have been resolved by an anonymous scrawl, sent thru the mail, promising more if he didn't get out of the country.

But instead of getting out of the country, de Spain continued as a matter of energetic policy to get into it. He rode the deserts stripped, so to say, for action and walked the streets of Sleepy Cat welcoming every chance to meet men from Music Mountain or the Sinks. It was on Nan that the real hardship of the situation fell, and Nan who had to bear them alone and almost unaided.

Duke came home a day or two later without a word for Nan concerning his encounter with de Spain. He was shorter in the grain than ever, crustier to every one than she had ever known him—and toward Nan herself fiercely resentful. Sassoon was in his company a great deal, and Nan knew of old that Sassoon was a bad symptom. Gale, too, came often, and the three were much together. In some way, Nan felt that she herself was in part the subject of their talks, but no information concerning them could she ever get.

One morning she sat on the porch sewing when Gale rode up. He asked for her uncle. Bonita told him Duke had gone to Calabasas. Gale announced that he was bound for Calabasas himself, and dismounted near Nan, professedly to cinch his saddle. He fussed with the straps for a minute, trying to engage Nan in the interval, without success, in conversation. "Look here, Nan," he said at length, studiously amiable, "don't you think you're pretty hard on me, lately?"

"No, I don't," she answered. "If Uncle Duke didn't make me, I'd never look at you, or speak to you—or live in the same mountains with you."

"I don't think when a fellow cares for you as much as I do, and gets out of patience once in a while, just because he loves a girl the way a red-blooded man can't help loving her, she ought to hold it against him forever. Think she ought to, Nan?" he demanded after a pause. She was sewing and had kept silence.

"I think," she responded, showing her aversion in every syllable, "before a man begins to talk red-blood rot, he ought to find out whether the girl cares for him, or just loathes the sight of him."

He regarded her fixedly. Paying no attention to him, but bending in the sunshine over her sewing, her hand flying with the needle, her masses of brown hair sweeping back around her pink ears and curling in stray ringlets that the wind danced with while she worked, she inflamed her brawny cousin's ardor afresh. "You used to care for me, Nan. You can't deny that." Her silence was irritating. "Can you?" he demanded. "Come, put up your work and talk it out. I didn't use to have to coax you for a smile. What's come over you?"

"Nothing has come over me, Gale. I did use to like you—when I first came back from school. You seemed so big and fine then, and were so nice to me. I did like you."

"Why didn't you keep on liking me?"

Nan made no answer. Her cousin persisted. "You used to talk about thinking the world of me," she said at last; "then I saw you on Frontier Day, riding around Sleepy Cat with a carriage full of women."

Gale burst into a huge laugh. Nan's face flushed. She bent over her work. "Oh, that's what's the matter with you, is it?" he demanded jocularly. "You never mentioned that before."

"That isn't the only thing," she continued after a pause.

"Why, that was just some Frontier Day fun, Nan. A man's got to be a little bit of a sport once in a while, hasn't he?"

"Not if he likes me." She spoke with an ominous distinctness, but under her breath. He caught her words and laughed again. "Pshaw, I didn't think you'd get jealous over a little thing like that, Nan. When there's a celebration on in town everybody's friendly with everybody else. If you lay a little thing like that up against me, where would the rest of the men get off? Your strawberry-faced Medicine Bend friend is celebrating in town most of the time."

Her face turned white. "What a falsehood!" she exclaimed hotly. Looking at her, satisfied, he laughed whole-heartedly. She rose, furious. "Its a falsehood," she repeated, "and I know it."

"I suppose," retorted Gale, regarding her jocosely, "you asked him about it."

He had never seen her so angry. She stamped her foot. "How dare you say such a thing! One of those women was at the hospital—she is there yet, and she is going to die there. She told Uncle Duke's nurse the men they knew, and whom they didn't know, at that place. And Henry de Spain, when he heard this miserable creature had been taken to the hospital, and Doctor Torpy said she never could get well, told the Sister to take care of her and send the bills to him, because he knew her father and mother in Medicine Bend and went to school with her there when she was a decent girl. Go and hear what she has to say about Henry de Spain, you contemptible falsifier."

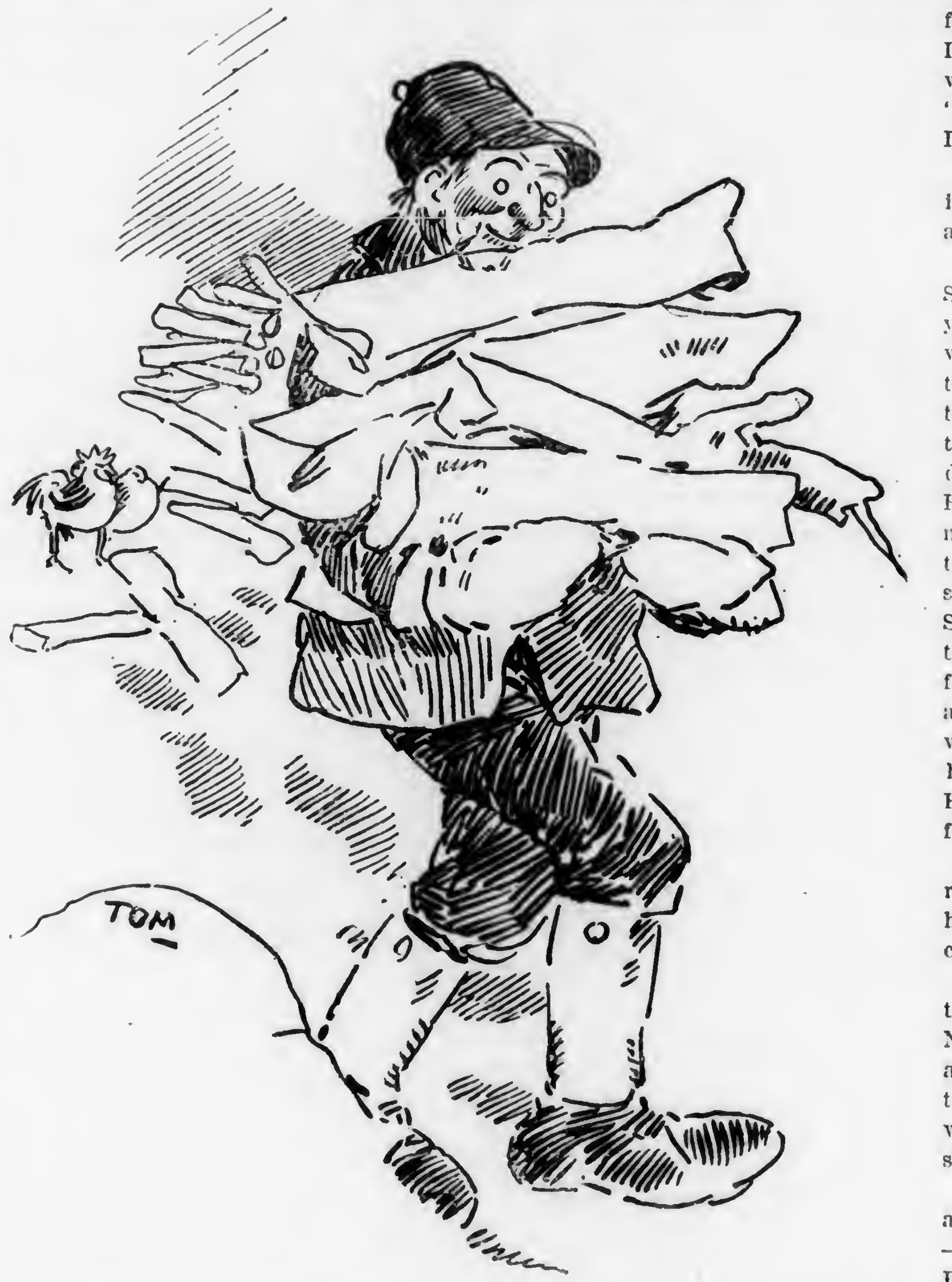
Gale laughed sardonically. "That's right. I like to see a girl stick to her friends. De Spain ought to take care of her. Good story."

"And she has other good stories, too, you ought to hear," continued Nan undismayed. "Most of them about you and your fine friends in town. She told the nurse its you who ought to be paying her bills till she dies."

Gale made a disclaiming face and a deprecating gesture. "No, no, Nan—let de Spain take care of his own. Be a sport yourself, girlie, right now." He stepped nearer her. Nan retreated. "Kiss and make up," he exclaimed with a laugh. But she knew he was angry, and knew what to guard against. Still laughing, he sprang toward her and tried to catch her arm.

"Don't touch me!" she cried, jumping away with her hand in her blouse.

(To be Continued.)



Uncle Amos Says: "Wish I could carry some of this wood to the poor people in the city who are shivering thru these cold days. After all the 'service departments' and 'agricultural expert advisors' the railroads and other big business has kept to advise the farmers the last few years, its dum funny that they couldn't run their own business when the pinch came. We notice that they aint givin' so much advice just at present, but the farmers keep right on at the same old job. The crops last year made a pretty good record but we may show them something better next year. We are short on advice but long on business, which is more than some people can say."

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., January 7, 1918.

Owing to the severe cold weather, which prevailed all last week there was practically no movement whatever in potatoes and the arrivals each day were added to the supplies already on hand. As a result there are now 84 cara of potatoes in the delivery yards and the tone of the market is generally easy, altho potatoes free from frost will command full quotations. Many, however, are showing more or less frost and these are of uncertain value. Pennsylvania potatoes free of frost are selling all the way from $2.30@2.60 per cwt., while New York state potatoes range from $2.20@2.40. Nearby Jersey potatoes are selling at 75@90c per ⅝ bushel basket.

Fancy sweet potatoes are in light supply and the market is firm and higher; a car of Delaware stock in bushel hampers which arrived early this week sold at $2.10 per hamper for primes, with seconds bringing $1.40. Jersey baskets are in light supply with No. 1 stock selling from $1.35@$1.40 per ⅝ basket, with No. 2's at $1.10@1.15.

Vegetables

Dried beans show no change over last week's prices, marrows selling at $16 per cwt; pea and medium, $14.25@14.50 and red kidneys, $14@14.50. Strictly fancy green Florida beans are in very light supply and such sell readily at $5@6.50 per hamper. Some however are arriving in a badly frosted condition and the market on these is very irregular, ranging from $1@3.50 as to quality and condition. The cold weather stopped the nearby and New Jersey farmers from hauling in their usual supplies of root stock of all kinds and under these shortened supplies the market on all these commodities is firmer and higher, selling readily at $3.25@3.50 per barrel and carrots at $3@3.75 a barrel. Parsnips, $2.75@3.50 per barrel; white turnips, $2.50@3.50. Brussel sprouts are very scarce and the market is firm and higher, fancy sprouts selling at 20@23c a quart. The market is almost bare of cabbage and prices are fully $20 per ton higher than last week, sales being made at $65@70 per ton. Some new cabbage from Florida arrived this week and sold at $2.50 per hamper.

Cucumbers are very scarce, hot house stock being practically the only cucumbers on the market and these are selling from $1@1.50 per dozen. The celery market is stronger under lighter supplies. Pennsylvania celery is meeting a ready outlet at 12@20c a bunch while New York State crates in the rough range from $2.50@4 and California crates at $4@4.50. Egg plants continue in light supply and the market is firmer, ranging generally from $4@5.50 per crate. Horse radish is not quite so active, with most sales ranging from $5@7.50 per barrel, with strictly fancy from $8@8.50. Norfolk kale is selling generally at $1.50@1.75 per barrel. Lettuce is much higher, best selling at $1.75@2.25 per hamper, with some alightly frozen at $1@1.25, and the prospects are that the market will show a still further advance. Fancy hot house mushrooms continue to meet an active market at $1.25@1.50 per 3-lb. basket.

While there has been a better movement in onions this week there has been no improvement in prices. Best yellows are selling at $2.75@2.85 per 100-lb sack, with frozen stock at $1.50@2. No. 2's are easier, ranging from 75c@$1.25 per sack. Peas are very scarce and fancy stock when here bring extreme prices. Florida hampers are drawing from $5@7 and California from $10@12. Parsley is in good demand at $5@7 per barrel. The market on peppers is again easier after the decline reported in these columns last week and the market now ranges from $2.50@4.50 a box. Shallots are easier, at $3.50@4 per barrel. Norfolk spinach is very scarce and sells at from $3@5 per barrel as to quality. Some Texas spinach sold at $2.50@3 per bushel. Squash continues scarce and high, ranging from $3@4 per crate. Canadian rutabagas are in light supply and higher, selling up to $1.50 per cwt. for medium sized stock. Tomatoes are in light supply, firm and higher. When fancy hard ripe, they sell up to $5 per crate for the fancy 144 size, with the choice 180 size up to $4. Many, however, are showing the effects of the cold weather and these are selling anywhere from $1.50@2.50 per crate. Hot house tomatoes are also in light supply and firm at 25@27½c per pound for No. 1's, with No. 2's selling at 15@20c.

Fruits

The offering of frozen apples which accumulated during the severe cold weather of last week are rather liberal and upon this class of fruit the market is weak and irregular and very little movement. Apples free from frost and fancy quality are held strong and generally unchanged altho in some cases the market is a little higher. The range of values on the various varieties is about as follows: Baldwins, $3@5.50; Ben Davis, $3@4.25; Black Bens, $3@4.50; Black Twigs, $3.50@5.25; Ganos, $3@4.50; Greenings, $3.50@5.50; Kings, $3.50@5.50; Hubbardsons, $3.50@5; Starks, $3.50@4.75; Spys, $3.50@5.50; Snows, $4@5.50; Stayman Winesaps, $4@6; Twenty Ounce, $4@5; York Imperials, $3@5.25; Rome Beauty, $5@6.50; Russett, $4@5. Box apples are in liberal supply and about steay as quoted. Rome Beauty, $1.50@1.75; Spitz, $1.50@2; Jonathan, $1.50@1.75; Stayman, $1.65@2; Delicious $2@2.75; Black Twig, $1.50@1.85; Pearmain, $1.75@2. There is but little demand for pears, the few keifers that are being affered are finding but slow sales at $2@3 per barrel and 35@75c a bushel. The season on cranberries is nearing an end and the market is closing very firm, best berries bringing from $16@17.50 per barrel, with poor grades from $14@15.

Dressed Poultry

With the holiday season over, turkeys are meeting a slower demand and prices are on a much lower level with good stock now selling generally at 30@35c a pound. Chickens and fowls are in light supply and fancy grades continue firm and active and practically unchanged. Ducks are showing very little change, but geese are dull and weak. Market ranges about as follows: Turkeys, 30@35c; fowls, 25@29c; chickens, 24@30c broilers, 30@36c ducks, 24@28c; geese, 24@27c.

Live Poultry

The market on live poultry is showing but little change from last week except on turkeys which are somewhat easier and now selling at 27@28c. Extra heavy fowl continue firm at 25@26c, with smaller sizes bringing 23@24c. Spring chickens of extra quality also bring 25@26c, with fair to good selling at 22@24c. Ducks and geese are selling generally at 22@27c.

Eggs

Strictly fancy fresh, new-laid eggs continue very scarce and again we have to report the market as firm and higher with not enough supplies to fill the demand even at the advance in prices. Nearby first are selling at 61@62c per dozen with current receipts at 60c and seconds at 50@53c, as to quality. Western extra first are selling at 61@62c, with firsts at 60c. Fancy selected, well-graded and carefully candled eggs are being jobbed out at 68@70c per dozen.

LANCASTER PRODUCE

Lancaster, Pa., January 7, 1918.

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Despite a market well attended by farmers, and a large supply of poultry and eggs, prices were a trifle higher than last week. The supply of country butter was fair, and it sold for 60 cents. Potatoes were advanced to $1.40 a bushel, but the demand was light.

Butter and Eggs.—Creamery butter, 56@58c per lb; country butter, 60c; fresh eggs, 60c per doz; storage eggs, 45c.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1@1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables.—Lima beans, 18c per pint; squash, 4@5c each; cauliflower, 15@20c head; eggplant, 5@10c each; cabbage, 5@10c head; sweet potatoes, 30c ½ pk; potatoes, $1@1.40 bu; do, 12@20c ½ pk; neww turnips, 15c ½ pk; spinach, 20c ½ pk; parsnips, 5c box; grapes, 8@12c lb; apples, 20@25c ½ pk; pears, 20@25c ½ pk.

Grain Market.—Milling wheat, $2 per bu; damp wheat, $1.80; new corn, $1.40; rye, $1.65; oats, 65c; No. 1 timothy hay, $25 per ton; clover hay, $18; wheat straw, $12; oat straw, $10.—R.

YORK PRODUCE MARKETS

York, Pa., January 7, 1918.

Markets have been unchanged in all principal lines of produce. The unusual cold weather has interfered much with trade. Also coal shortage has caused much concern and all such matters interfere with trade conditions.

58c lb. Milk, 10c qt.

Butter.—Country, 55c lb; separator, 55@58c lb; milk, 10c qt.

Poultry.—Hens, 18@19c lb; dressed, 66c@$1.35 each.

Vegetables.—Potatoes, 12@20c ½ pk; 75c@$1.25 a bu; lettuce, 5@15c hd; cabbage, 4@12c a hd; beets, 5c bch; radishes, 5@7c bch; onions, 12@15c bx; 25c ½ pk; lima beans, 35c qt; soup beans, 35@40c qt; celery, 5@10c a stalk; turnips, 20@25c ½ pk; corn meal, 10@12c qt.

Fruit.—Apples, 15@40c ½ pk; pears, 10c bx; 15@25c ½ pk.

Country Butchering.—Sausage, 30@34c lb; smoked, 36c lb; back-bone, 28@30c lb; ribs, 30@32c lb; tenderloin, 40@48c lb; steak, 34@48c lb; pudding, 24@30c lb; cured hams, 38@40c whole.

Retail Grain Markets.—Wheat, $2.10; corn, $2; oats, 90c; rye, $1.65; bran, $2.50 cwt; middlings, $3 per cwt.

Wholesale Grain Market.—Wheat, $2.10; corn, $1.60; oats, 65c; rye, $1.40; bran, $48 per ton; middlings, $50@58 per ton.

NEW YORK PRODUCE

New York City, January 7, 1918.

Receipts of butter were delayed and supply at hand is limited. Prices remain unchanged. Trade in cheese is quiet. Arrivals of eggs are light and many are damaged by freezing. Potato offerings are light and show more or less frost damage. Fancy apples are in fair demand.

Butter—Creamery, extras (92 score), per pound, 52c; higher score, 52½@53c; thirds to firsts, 40@53c state dairy, 38@49c; ladles, 36@38.

Cheese—Flats, specials, 24½c; do., colored, 23½c; prime, 22½@23c.

Eggs.—Fresh gathered extras, 67c; extra firsts, 66c; nearby white, fine to fancy, 73@75c; ordinary to good, 65@72c; browns, 67@68c.

Dressed Poultry — Philadelphia and Long Island broilers, fancy, 38@40c; old roosters, 22c; squabs, $2.75@7.25 per dozen. Spring ducks, per lb., 25@28c; turkeys, fresh killed, 32@33c; capons, 35@40c lb.

Vegetables and Greens—Beets, bbl., $2.25@4. Onions per 100-lb. bag, $1@3.50. Potatoes, Jersey, $1.83@2.50 per 100 lbs.; state and western, $2.25@2.63 per 100 lbs. Carrots, $2@3 bbl.

Apples—McIntosh, $4@7; York Imperial, $4@5.25. Twenty Ounce, 4@5.25; King, $4@5.50; Baldwin, $3.50@5.50.

PHILADELPHIA LIVE STOCK

Beef Cattle.—An improved demand developed during the last week and the market ruled firm under light offerings. Prices showed little change.

Steers, best, $13.50; fair to good, $11@12.50; common, $10@11; bulls, $8@10; extra choice higher; cows, fat, per cwt., $8@9.50; extra choice higher, medium, per cwt., $6.50@8; ordinary, per cwt., $5@6.50; calves, exceptional lots, $17@17.50; good to choice $15.50@16.50; medium, $11@13; common, $6.50@8.50; Tennessee and southern, $8@16.

Sheep and Lambs.—Sheep of desirable quality ruled firm, with demand absorbing the limited offerings. Lambs were pretty well cleaned up and firm.

Sheep—Wethers, extra, $12.50@13; good to choice, $10.50@11.50; medium, $8@9; common, $6@7; ewes, heavy, fat, $10.50@11.50. Lambs—Choice, $17.50@17.75; do, medium, $16@16.50; inferior, $14@15.

Hogs.—There was very little stock arriving owing to the cold weather which prevailed thruout the country during the last week, and the market ruled firm, with demand equal to offerings. Quotations for best western, $18.50@18.75.

City Dressed Stock.—Offerings were light and values were well sustained, with a fair inquiry for desirable stock of most descriptions. Hogs weer slightly stronger.

Steers, 15@21c; heifers, 14@18c; cows, 10@17c; calves, 23@24c; southern and barnyards, 17@19c; country dressed, 20@22c; sheep, 22c; do, extras, 23c; lambs, 26c; do, extras, 27c; hogs, 24c.

PITTSBURG LIVE STOCK

Pittsburg, Pa., January 7, 1918.

Cattle.—The supply on sale Monday was 80 loads, compared with 100 loads the week before. The market ruled fairly active at steady prices on the light and medium grades of cattle, while the weightier grades sold slow and lower. Cows in good demand and all grades sold steady. Heifers in light supply and market steady. Fresh cows slow. Springers very slow sale. Bulls steady on all grades. Today's supply was 70 carloads. With a fair demand the market ruled active and strong on all desirable grades.

Good to choice	$13.00@13.25
Good 1300-1400 lb	12.50@13.00
Medium to good, 1200-1300 lb.	11.00@12.50
Tidy, 10.50-1100 lb	10.50@11.50
Fair to medium, 1000-1100 lb.	9.50@10.50
Fair, 900-1000 lb	7.50@ 9.00
Common, 700-900 lb	6.00@ 7.25
Rough, half-fat, 1000-1300 lb.	8.00@ 9.50
Common to good fat oxen	6.00@ 8.50
Common to good fat bulls	5.50@ 9.50
Common to good fat cows	5.50@ 9.00
Heifers, 700-1100 lb	6.00@11.00
Bologna cows	5.00@ 6.00
Fresh cows and springers	$25@110

Calves.—Calves are in light supply and markets closed 25@50c higher than Monday's prices. Today's calf supply was 300 head. Market steady.

Veal calves	$12.00@17.00
Heavy and thin calves	5.00@10.00

Hogs.—The supply on sale during the week have been liberal but with a good demand the market has ruled active with prices about steady all week on good weight grades while pigs closed 50c higher and lights 25c higher than Monday's close. Today's supply was 55 double-deck loads. Market lower on all grades.

Prime heavier	$17.05@ .....
Heavy mixed	17.05@ .....
Prime medium weights	17.05@ .....
Best heavy weights	17.05@ .....
Light Yorkers	17.05@ .....
Good pigs	17.00@17.05
Common to good roughs	15.60@16.10
Stags	14.00@14.50

Sheep.—The supply of sheep and lambs has been fair. The market ruled steady all week on sheep, while lambs were in better demand and closed 50c per cwt. higher than Monday's prices. Today's receipts were only 5 double-deck loads. They sold active and higher on all best grades; other grades steady.

Prime wethers (95 to 100 lbs.)	$12.50@13.00
Good mixed	11.00@11.75
Fair mixed ewes and wethers	10.00@10.75
Culls and common	6.00@ 8.00
Culls and choice yearlings	10.00@15.00

LANCASTER LIVE STOCK

Lancaster, Pa., January 7, 1918.

Cattle.—Receipts, 750 head; market active; prices 25 cents higher. Good to choice steers, $10@10.75; extra choice feeders, $9.75@10.75; common to medium feeders, $8.75@9.75; medium to good stockers, $8.75@9.50; medium to good stockers, $7.75@8.50; good to choice fat heifers, $10.25@11.25; common to medium heifers, $9.25@10.25; good to choice young cows, $9.15@10.15; medium to good cows, $8.30@9.10; bologna and fair fresh cows, $5.75@7.50; medium to good bologna bulls, $8.50@9.50; fat bulls, $9.65@10.70; good to choice stock bulls, $8.60@9.60; good to choice stock heifers, $8.10@9; medium to good stock heifers, $8.25@9.25; common to medium stock heifers, $7.60@8.20; good to choice oxen, $7@8.50.

Hogs.—Receipts, 640 head; market active, prices steady. Best grades, $18; roughs, $16.50.

PITTSBURG HAY AND GRAIN

Pittsburg, Pa., January 7, 1918.

Hay.—Receipts light; good demand for every and all grades, all arrivals being placed readily at top quotations.

No. 1 timothy, $30@30.50; No. 2 do, $27.50@28; No. 3 do, $24.50@25; No. 1 light mixed, $28@28.50; No. 1 clover, $29.50@30.50; No. 2 clover mixed, $26.50@28.50; No. 1 clover, $29.50@30.50; No. 2 do, $26.50@28.50.

Straw.—Receipts of this commodity are reduced to a minimum while the demand is urgent; market higher.

No. 1 oat, $14.25@14.50; No. 2 do, $14@14.25; No. 1 wheat, $13.75@14.50; No. 2 wheat, $13.25@13.75; No. 1 rye, $14.25@14.50; No. 2 do, $13@13.50.

Ear Corn.—Good demand for ear corn which readily takes all arrivals. Market good.

New No. 2 yellow, $1.58@1.60; No. 3 yellow, $1.53@1.56.

Oats.—Receipts altho light are not sufficient to meet the demand; market steady.

NEW YORK HAY AND GRAIN

New York City, January 7, 1918.

Feed.—There was nothing new in the situation on Saturday. No offerings of either Western or City feeds on the new Government basis were reported and business continued mainly in the way of filling old contracts. The basis of Western bran remains at $37.85 per ton and Western middlings at $39.85 per ton. With flour gradually reaching a settled position it is expected that mills will soon offer in larger volume.

All prices have been withdrawn.

Hay and Straw.—Receipts still light and market very firm, especially at Manhattan markets.

MARKETS—TWO

Hay.—No. 1, large or small bales, $32@35; No. 2, $30@32; fancy, mixed clover, $30@32.

Straw.—No. 1 rye, $18.

Wheat.—No. 2, red, $2.25.

Corn.—No. 3, yellow, $1.87 per bushel.

Oats.—No. 2, white, 94c; No. 3, 93½c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, January 7, 1918.

Bailed Hay and Straw.—Receipts, 300 tons of hay and 6 cars of straw. There was a fair inquiry for hay of fine quality, prices of which ruled firm under light offerings. Straw ruled steady, but demand was only moderate.

Timothy hay, according to location, No. 1 large bales, $28.50@29; do, small bales, $28.50@29; No. 2, $27@28; No. 3, $24@26; sample, $19@21; no grade, $15@17.

Clover Mixed Hay.—Light mixed, $27@28; No. 1 do, $25.50@26.50; No. 2 do, $22.50@23.50.

Straw.—No. 1 straight rye, $17.50@18; No. 2 do, $16.50@17; No. 1 tangled rye, $16@16.50; No. 2 do, $15@15.50; No. 1 wheat straw, $15.50; No. 2 do, $14@14.50; No. 1 oat straw, $15@15.50; No. 2 do, $14@14.50.

Bran.—Trade was slow and the market was nominally unchanged.

Soft winter bran, in 100-lb. sacks, per ain, nominal; spring bran, in 100-lb. sacks, per ton, $44.50@45.

Wheat.—No. 2 red, $2.25.

Corn.—Nominal.

Oats.—No. 2 white, 92½@93c.

NEW YORK MILK MARKET

There has been little change in demand as yet, despite the fact that the Federal Milk Commission has raised the retail price for January to 15 cents a quart for bottled Grade B delivered. The extreme cold weather caused great delay in deliveries and a large loss of bottles thru breakage.

The conclusions of the Federal Milk Commission did not become known until New Year's Day and were published in the Wednesday morning papers. Rates were established for January alone. It is likely the Commission woshed to see how this rate worked out before venturing further. Its conclusions, if one may judge from local comment, do not satisfy anyone. The New York Times headed its article on the new rates with this caption, "$40,000,000 added to City Milk Cost—Increases in Price to Consumes Based on Official Schedule for January—Farmers get $25,000,000—Producers and Distributors Protest That Rise is Not Sufficient to Make Up Losses." This pictures the situation as it is seen in New York. Some hope for a reduction in price later in the winter is held out. This hope is based on Federal regulation of transportation, which, it is thought, will make feed more plentiful and cheaper.

The rates announced by the Commission for January are, to the producer of Grade B in the first district, $3.52 a hundred, and for each additional 1-10 of 1 percent butter-fat, 4 cents. This means $3.76, or approximately 7.99 cents a quart, for 3.6 percent, and $3.92 for 4 percent. To the distributor, Bottled Grade A, 17 cents; Grade B in pints, 9 cents; Grade B sold to stores for resale, 13½ cents; Grade B sold from store without delivery service, 14 cents; Grade B in cans sold in store for resale, 10½ cents, resale retail price without delivery service to be 11 cents.

Receipts of milk and cream in 40-qt. cans for week ending January 5 were as follows:

Railroad	Milk	Cream
Erie	38,948	721
Susquehanna	5,905	30
West Shore	9,375	825
Lackawanna	53,890	1,175
N. Y. Central (Long Haul)	91,763	1,565
Ontario	34,894	1,615
Lehigh Valley	41,214	521
New Haven	5,104	6
Pennsylvania	8,975	175
Other Sources	5,610	150
Totals	275,638	8,747
Same Week Last Year	322,870	9,258

PHILADELPHIA DAIRY MARKET

Philadelphia, January 7, 1918.

Butter.—The market ruled firm on high grade stock, demand for which absorbed the very limited offerings. Much of the supply was of the undergrades which had to be sold at inside figures. Fancy prints were well cleaned up and firm, but unattractive qualities were quiet and irregular in value.

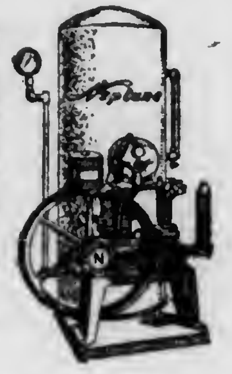
Western, fresh, solid-packed creamery, extra, 52c; higher-scoring goods, 53@54c; extra firsts, 49@50c; sweet creamery, extra, 53c; under grades, 50@52c; held creamery, good to choice, 46@48c; do, ordinary, 43@44c; nearby prints, fancy, 56c; do, average, extra, 53@55c; firsts, 48@50c; seconds, 45@47c; special brands jobbing at 55@59c.

Cheese.—The market ruled firm, but there was little trading.

New York, full cream, fancy, June, 25@25½c; specials higher; do, do, do, fresh made, best, 23@23¼c; do, do, do, fair to good, 22@22½c.

TOBACCO MARKET

It is a matter of considerable satisfaction that the speculators and others who formerly dominated prices now frankly confess that they are not responsible for the present "high" situation as they express it. If they were in control growers would be getting no one knows how much less instead of the now moderately remunerative return. A large percentage of the crop was sold abnormally low as it was, and now that values are understood it is largely the fault of holders if further sacrifices are made. The present blockaded market movement, directly the result of probably the most stormy winter on record, is being employed to the fullest extent as a means of depressing values but the same has only to be ignored to be defeated. But few sales were made during the week and these were on a basis around $30 per cwt. for crop lots. Stripping is now progressing on almost every farm and the coming of mild weather will witness rather extensive deliveries. Growers should be apprised that there is yet much moisture in their tobacco and for that reason due care should be exercised in piling in large amounts. After considerable delay, fertilizer manufacturers have announced their prices for the season but they have safeguarded their business by warning as to possible advances in prices, and inability to fill all orders. It is noted that prices are but about 10 percent higher than last fall and not more than 20 percent higher than during ante bellum years. As heretofore, potash is practically out of the formulas and should not be considered by buyers. Apparently the demand will be greater than usual as many growers contemplate using a largely increased amount per acre.—H. E. Tweed.



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NEXT YEAR'S CROPS

Conscript Farm Labor

At this time, when the authorities of the nation are devising ways and means of putting our country in fighting trim and when farmers are being urged on all sides to do their utmost in the way of increased production, it seems appropriate that we should work out some well-defined system whereby maximum crops can be planted and harvested this coming spring and summer. This past year there have been millions of dollars' worth of farm produce wasted, due to insufficient labor to care for it. Potatoes have been frozen and other vegetables have not been marketed, and fruit has spoiled because of the lack of workers. The farmers of Pennsylvania have never worked harder or longer hours than they did the past season, and now with a large part of their crops wasted, can we logically expect a farmer to again experience lost effort? The dairymen of one county in Pennsylvania are unanimous in the conviction that the country will suffer an irretrievable loss unless the Government will provide some tangible solution to the farm labor problem.

A question that is being asked at every rural gathering, why should manufacturers of luxuries be allowed to continue? Why not curtail in many instances the activities of an industrial nature that do not have to do with the winning of the conflict? This condition would allow many to assist with production on the farms, and even if we grant that such Government action would better conditions it is still probable that there would be a labor shortage in farm and factory. In this event the conscription of farm labor would seem justifiable. On interrogating 50 of the leading farmers of a certain community it was learned that the drafting of labor for farm work was in their unanimous opinion the only feasible and ultimate solution, and also it was their opinion that the young men on the farms should first be drafted for this work. Since it is conceded that farmers cannot compete with the factories in wages paid, some would have the Government appropriate money to guarantee a high wage to farm workers. This would entail endless complications and the farmers seem to think that the drafting of labor for farms would be the most satisfactory solution to the present serious problem.—E. J. Perry, Tioga Co., Pa.

FARM LABOR

There has been much said about farm labor but I do not see that very much is being done to keep the boys on the farm. I believe that there must be some sort of legislation to stop drafting farm boys or the war will be lost thru lack of production. Nearly all of the farm boys have been taken from this section. Many have been drafted and others have enlisted. Not over 10 acres of fall plowing has been done here this fall where usually we have hundreds by this time. Many acres of potatoes are not dug yet. We can not give up our boys who have never done anything but farm and exchange them for city boys who know nothing about farm work. We have tried city help and have found that it will not do. We will have to quit farming if our help is taken.

We are appealed to to raise more as a patriotic duty. But we can not raise more if our help is all taken. Help us to keep our experienced help on the farm and we will feed the world and whip the Germans to a frazzle. But take our help away and there is nothing to do but cut down on our production. I do not think that the farm papers have done all they can on this question. All we hear in the farm papers and in farm bureau meetings is a discussion of the milk question.

I can not understand why the government should fix the price on things that the farmer has to sell and pay no attention to the things that the farmer must buy. I know that it is not the time for complaining, but there are some things that we can not help questioning.—E. L. Ryan, Tioga Co., N. Y.

THE Y. M. C. A. AND THE HOME FOLKS

Save Old Magazines

It is impossible to realize what good the Y. M. C. A. is doing for the soldier unless you visit a Camp or read a letter from a soldier there. And the wonderful organization needs continuous help to carry out its purpose.

We can all assist. If not financially as a weekly or monthly donation, at least in small deeds that produce big results. I have been collecting used magazines from my neighbors. Each month I send them to the headquarters here in the city from where they are distributed to do the most good. During November I gathered over 500. And, please remember, the Y. M. C. A. cannot get enough reading matter. The call is urgent at this time. Fiction magazines, trade journals and farm papers are acceptable in any quantity.

I prize my farm papers, and I enjoy keeping every issue for future reference, but I cannot do it now because I know some soldier will enjoy them and profit by reading them so I give all my farm papers to the Y. M. C. A. each month.

Then, too, I cut all the funny pictures, jokes, etc., from the daily and Sunday papers and arrange them into classes and give them to the cause. Such matter is desired because a wounded soldier of any nationality can read a funny picture and a wounded man who cannot hold a big magazine can manage a "cut-out". A single cartoon perhaps will radiate sunshine to at least a hundred men somewhere across the seas. This is a small thing to do for us Home Folks but a mighty pleasure to a soldier in arms. Begin today and submit your offering and be assured your bit will be appreciated and your effort repaid a thousand fold.—Dr. A. L. Root.

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Bruised Withers.—I have a black, four-year-old horse that has a large wither. He fell over the wagon tongue and landed on his back. I have employed two qualified veterinarians to examine and treat him. The first veterinarian advised me to leave him alone, saying the gathering was an accumulation of yellow fluit, and that it would gradually absorb, but it remained about the same size. The second veterinarian advised me to apply equal parts tincture iodine and spirits camphor. This treatment reduced swelling considerable but now is swollen and same size as it was when I commenced applying iodine and camphor. This swelling is on both sides, but does not interfere with the collar. If bunch is pressed on one side the other side bulges out. He is not tender. I am feeding this horse for market and I hesitate to disfigure him in any way. How can I treat ailment in order to obtain quickest results. I. P. B., Waynesboro, Pa.—Perhaps by persistent hand rubbing you might be able to stimulate absorption; however, it is doubtful on account of it now being a chronic ailment. Removing fluid by suction, then injecting iodine into the cavity is occasionally good practice. In my practice I open sack freely, then swab out cavity with tincture iodine every day or two, or apply one part iodoform and five parts boric acid daily. Remember that surgical work when done in a case of this kind should be done in a very cleanly manner. Give him one dram doses of potassium iodide, three times daily, either in feed or drinking water. The internal treatment will sometimes remove fluid of this kind.

Inflamed Eyes.—We have a four-year-old cow that is troubled with inflamed eyes. I have applied hen oil, but she is no better. Her eyes have been sore for a week. She keeps both eyes closed most of the time. B. F. D., Wattsburg, Pa.—Dissolve one teaspoonful salt in a pint of boiled water and apply to eyes once a day. Dissolve 40 grains borate soda and 40 grains boric acid in one-quarter pint of clean boiled water and apply to eyes freely, twice daily.

Obscure Disease of Pigs.—We have lost eleven young pigs lately; one of the sows had nine and the other eight. When these pigs were four weeks old they were in fine health, but since then they have not thrived. I have given them salts and sulphur, but it failed to help them. I opened two of them after death, expecting to find lots of worms, but found none. They do not turn pink after death. They seem to stop growing, stand humped up and grit their teeth. They do not appear to suffer any pain and a peculiar part of it is that they have good appetites until they fall over dead. I examined them for black teeth, but found none. J. B. L., Nazareth, Pa.—Your having failed to notice any symptoms of disease either before or after death would indicate that either their food or water supply had caused their death. Had the pigs inherited any disease they would not have been so healthy at four weeks of age. As a rule too little attention is given to the cleaning of the feed trough, therefore many pigs are poisoned and sickened in this simple manner.

Calf Has Ringworm.—We have calf, four weeks old, that has two sore patches on neck. They must itch, as she is inclined to scratch herself. The hair on these places is quite thin, but skin is not raw. A. F. D., Meadville, Pa.—If you will paint bare patches with tincture iodine, three times a week, she will be all right in two weeks. Apply vaseline daily to start hair, but not until itchiness has left.

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(29)

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Lifting The Load on The Farm

"Young Farmer's" First Two Years Lead The Way Out

By HUGH FERGUS

BUTTLER, CO., PA.

The Editor thinks that those readers of the Pennsylvania Farmer who read the two previous articles, "Buying and Planning a Farm", and "A Young Farmer's First Summer" that appeared in the issues of July 22, 1916 and March 31, **1917,** will want to know whether the young farmer is making a success of his venture and how much money he is making. Being that young farmer and not wishing to be egotistical, I will give you a few figures and you can judge about the success or failure for yourselves.

This summer the U. S. Department of Agriculture had several men from the Farm Management section making a farm survey in a neighboring township to secure the labor incomes of the farmers visited. I asked them to come and figure out our labor income. Our actual cash receipts for our first year ending April 1, were $2,190. After taking an inventory, figuring depreciation and increases in our stock, these men figured our labor income as $1,050. This year we expect to at least double our income for, already (November 1) since April 1, our receipts have been $2,797 and in a couple of weeks, when we receive our next cream check, we will pass the $3,000 mark. By the end of the farm year, or next April 1, our receipts should be close to $4,500.

When we started farming here, after making our first payment of $1,500 on our 143-acre farm and after buying our machinery and two horses, we had only enough left of our remaining $2,500 capital to buy six cows. Now an inventory shows that we own 14 grade cows, one pure-bred Guernsey cow, six grade heifers, four pure-bred Guernsey heifers and one pure-bred Guernsey bull. In addition to this stock we bought this spring a runabout automobile, of the popular kind, to take the place of an extra horse; also a washing machine outfit with a gasoline engine for power. In our barn, too, we have about 335 bushels of oats, 210 bushels of wheat, about 30 tons each of hay and straw, about 70 tons of ensilage, and when it is husked we will have probably 450 bushels of ear corn. So with these figures in mind one can easily see why we are optimistic about the future.

Crop Yields

Altho the farm was in a high state of fertility when we came here we have as yet not made any exceptional yields per acre of our farm crops. Probably tho it is well that we have not, for then when we do secure better yields in a few years, as we hope to, there will be more pleasure in having done it thru profiting by our own mistakes than by starting right in with big crops. One reason for our ordinary or under ordinary yields has been the fact that we did not have the necessary cash to buy needed acid phosphate for our grain crops. However, we made a start in that direction this Fall on our wheat crop and hope to continue next year for other crops as well.

The Fergus Head—First Day On Pasture

Our corn crop last Fall averaged about 70 bushels of ears per acre where we husked and about nine tons of ensilage from the field that went into the silo. This Fall the average for ears will be about 20 bushels per acre higher, and for ensilage a little less. The oats, with an application of 130 pounds of acid phosphate per acre, yielded 48 bushels per acre this year. This was an increase of two bushels over last year. Two of the fields were in wheat. Then one in our five-year rotation being planted at the regular time for this section (September 15 to 25) yielded 21 bushels per acre. For awhile the field planted after our ensilage corn, on October 11, as a part of our three-year rotation, looked as tho it was all going to winter kill or freeze out, but enough of it survived to give a yield of 13 bushels per acre. For both summers the hay has averaged about one and one-half tons per acre.

Rearranging Fields

When we first came here the farm was in crops, pasture, and woodland as shown in Figure 1. As the nine acres of rough pasture was rather inaccessible, without water, and requiring a fence around it and one along the lane to get to it, we decided to clear it of stumps, stones and innumerable thorn bushes and put it under cultivation. This Spring I had an opportunity to sell the timber along the creek except what was in the "Pasture and Woodland" which I reserved. With these changes our farm next year will have the appearance indicated in Figure 2. It is my idea to have the three fields nearest the barn planted in a three-year rotation of corn for the silo, wheat, rye or oats the second year and clover the third year. The other five fields will be run in a rotation of corn, oats, wheat, clover and timothy, and timothy. These changes in the farming system will give us each year more legume hay, a little more grain for a cash crop, more pasture land and will mean quite a saving in fences, for on the house side of the road there will be no fences except the line fences. At silo filling time quite a lot of labor will be saved in having the corn in fields near the silo.

The Farm Buildings On Hugh Fergus' Farm, Butler Co., Pa.

By trying to manage the work so as to keep the team busy most of the time we are still able to farm with the two horses that were bought from the former owner of the warm. By taking good care of them, feeding them good and never working them over seven hours daily, they are apparently as good and sound as when they were bought. This year they have hauled eight tons of lime from the kiln, six miles from here, 12 tons of coal, 10 tons of feed from the station three miles away, plowed and prepared the land for 19 acres of corn which were worked four times and cut with a corn binder, prepared the land and harvested nine acres of oats, harvested 17¾ acres of wheat, harvested 27 acres of hay and spread about 175 loads of manure. If the weather continues good I hope to do quite a lot of fall plowing, haul more manure and build a lime kiln with their assistance.

Last year, when we were keeping hogs, we had one lot plowed up and planted to oats, peas and rape. For reasons explained later we are keeping no hogs this year, so planted this temporary field with oats and Canada field peas and seeded it down with clover and timothy in order to get it back into grass. From about an acre we cut 2,500 pounds of excellent hay. We made a mistake in using the Sixty Day oats with the peas for they were ready to cut for hay about the time the peas were in blossom.

This year too we profited by some of last year's mistakes with the corn crop. Both years we tested the seed in a germination box with an almost perfect stand each year. However, last year we planted in rows that could only be worked one way. With lack of labor only a small part of the corn was hoed, with the result that weeds grew in the rows and caused quite a loss in yield. This year in order to profit by this mistake I bought a couple of "stickers" or hand planters and planted in check rows. By working the corn both ways of the field twice, the field was practically free of weeds. I expected to have trouble when we came to cut it with the corn harvester but with sharp knives I could tell no difference between three stalks to the hill and where the stalks were growing singly as last year.

We still continue to have good success with the Sixty Day variety of oats. Our yield this year was 48 bushels per acre with none lodged. I believe, however, that a mistake was made both years in not planting three bushels per acre instead of ten pecks.

Our local Guernsey Breeders' Association had for speaker this year Mr. M. T. Phillips, of Chester Co., Pa. It has thus far been the experience of most of those who have tried it in a small way that alfalfa is a rather uncertain crop here. Mr. Phillips seemed of the opinion that it has not yet been given a proper chance so I believe yet that we will give it a thro trial in a small way on what seems to be the most likely place on the farm, a well-drained place above the house.

Housing the Cattle

Up until April of this year we separated all the milk produced by our cows and sent the cream to the creamery. With the skim milk last winter we raised five calves. The remainder was fed to hogs. Since steers had always been kept on this farm there was no provision made for housing hogs or cows. The steers were kept in an enclosed part of the barn, 34 by 64 feet in size, with large doors at either end so that the manure spreader could be driven thru it whenever the manure was hauled out, thus being handled only once. I knew of the experiment the Pennsylania State College carried on a few years ago with cows in an open shed, so thought we would try the enclosed "shed" for our cows. In a later paragraph relating to the cows the success of the system is told. Having only one small building in which not more than four hogs could be kept, I decided to try the steer feeders' plan and have hogs following cows. Under this system all the three brood sows received was skim milk and what they picked from the droppings and the coarse clover stems that were thrown out from the feed rack. Our fattening hogs, in addition, were allowed access to the shed mentioned above, which was arranged so that the brood sows could not get into it. We kept corn in it all the time. Under this system the hogs made fine gains and when five months of age all we sold averaged 150 pounds each. I know it is considered good practice to keep them until they weigh 225 pounds but we thought it most economical to sell them at 150 pounds.

The Open Shed Where The Cows Are Housed

One would think that under this system of keeping cows they would get much dirtier than in the stanchions, and that they would get hog manure on them; but we had no such trouble. By bedding the enclosure down every day the cows were as clean all winter as when they were on pasture. The picture of them shown on the first page was taken the day when they were turned out to pasture. Of course their hair got long, for one of the two large doors was always open except in extreme cold weather, but only once when the thermometer was below zero for three successive days could we notice a shrinkage in the milk flow. With the exercise they got none of them had trouble calving and with one exception no trouble in "Cleaning". This winter we expect to continue the same system of keeping the cows but there will probably be no hogs for our creamery is paying 80 cents per hundred for skim milk, which I believe is more than we can make from hogs, and the time formerly taken in separating will be used for some other purpose.

Applying Lime

When we came to this farm I believe the owner told me that it had been nearly 20 years since any lime had been applied to any of the fields. So much manure had been used in that time that, if one were to judge from last year's clover crop, not much lime was needed. Believing, however, that the use of lime would pay, we limed all the land in wheat last winter at the rate of 1,000 to 1,500 pounds of lump lime per acre. Perhaps this was not the ideal time to apply it, but we were too busily engaged at other work before wheat planting time to apply it then. To spread it, the manure spreader was adjusted to spread at its lowest speed or five loads per acre. The bed of the spreader was filled with straw and the lime put in on top of this. With the use of the spreader the lime could be spread equally as well whether very dry or very wet and sticky. Last year we bought all the lime used but this year, on account of a big increase in price, we have started a kiln here on the farm.

The hired help problem has not yet struck us as hard as it seems to have struck the farmers in other sections. Our first hand was a college student who helped us thru our first harvest. Then I employed a young fellow who stayed with us until this fall. Then he heard of the wages being paid in the steel mills of Pittsburgh, and left us, even tho we paid him $35 per month with board and washing and allowed him two weeks with full pay during the year. I was sorry he had not had his steel mill experience before he came here, for I heard lately that he lasted only two weeks in it and quit. By the time he paid his board and expenses he had very little left. Now we have hired a young fellow from town who wants to learn farming. With a little more experience he promises to become a good hand. But labor is going to be troublesome at the best. We must use what we can get.

By keeping watch of the markets we have made quite a saving in our farm purchases. Last fall we bought our winter's supply of dairy feed just as prices were starting to increase. The highest price we paid per ton for any of it was $37. Before it was all used up the same feed was selling for $45 per ton. In the same way we saved money on the purchase of binder twine and fertilizer. The binder twine was purchased last winter for $13 per hundred. This summer, when it was used, the same twine would have cost from $20 to $22 per hundred. On the fertilizer, $5 per ton was saved by buying it on a rising market.

The main item of our farm activities, which after all has already told whether we have made a success or failure and whether we are able to do the same in the future, is the cows. Our dairy work will be discussed in our next issue.

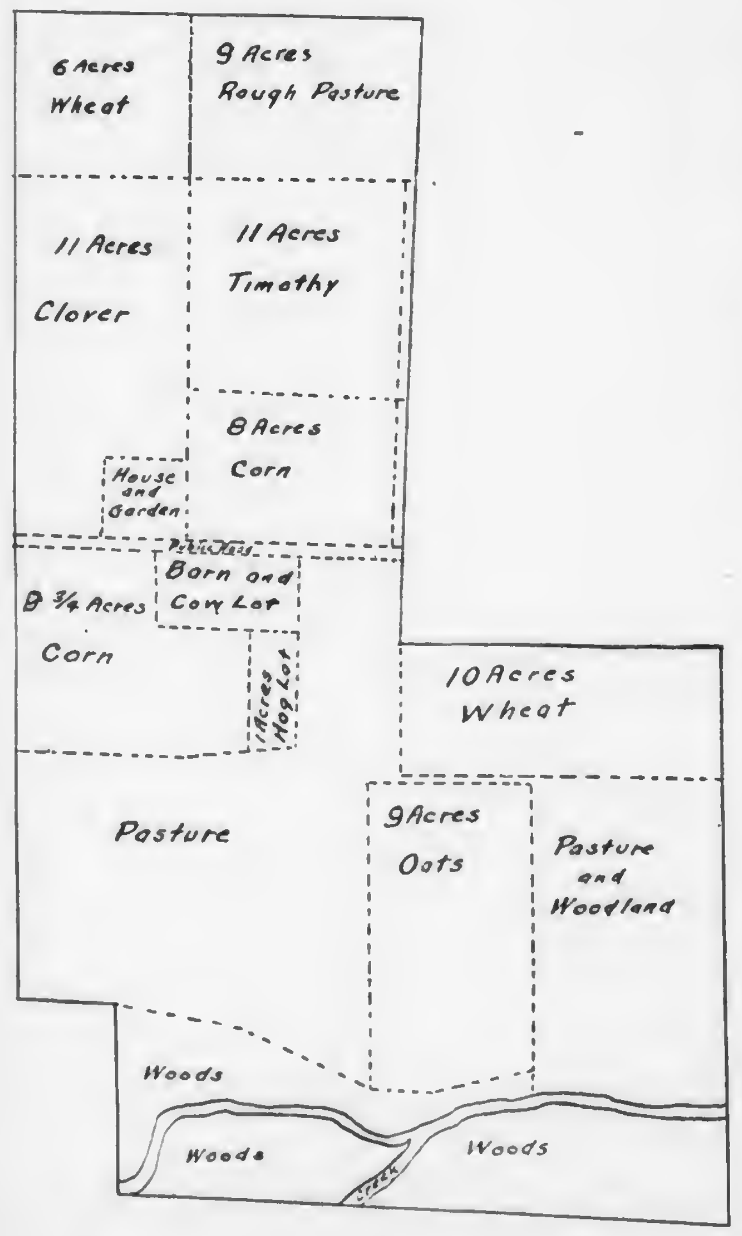


Fig. 1.—Original Field Arrangement

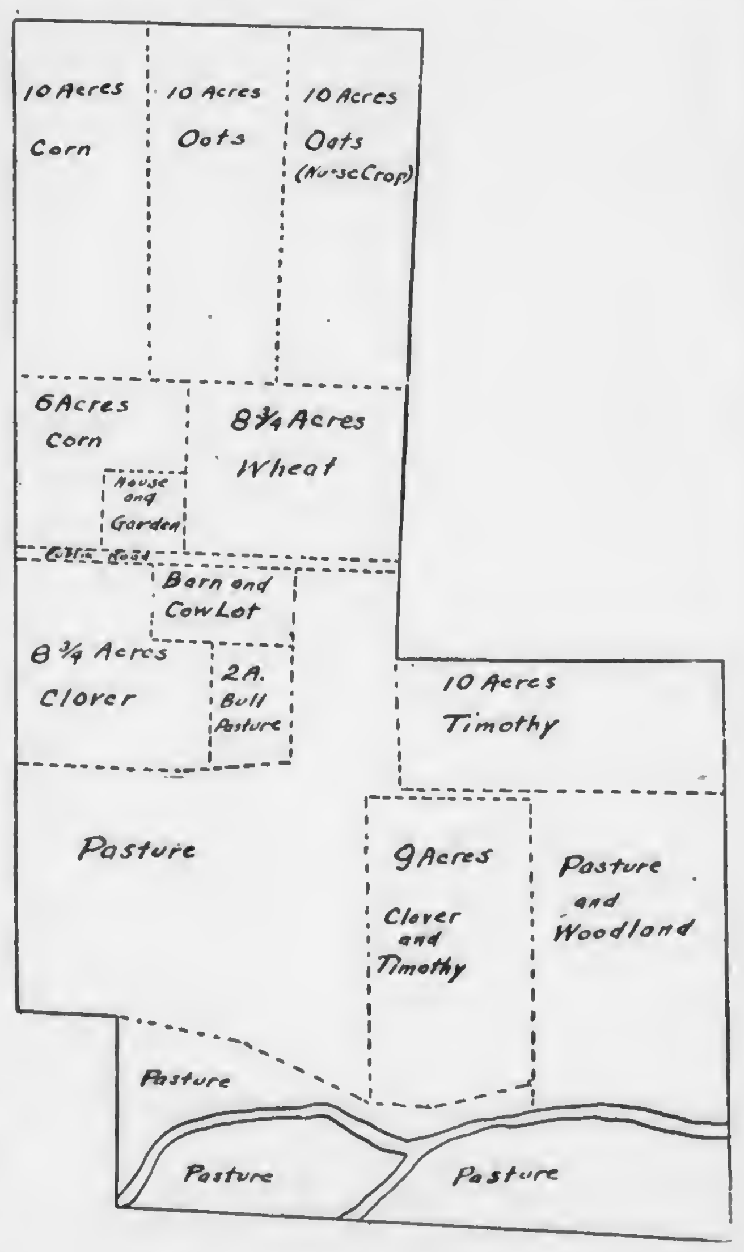


Fig. 2.—Farm As Rearranged

SUCCESS WITH VETCH AND RYE

Last winter I gave the readers of Pennsylvania Farmer an account of my initial effort with hairy vetch and rye. I think I told them of the fact that we again seeded the same piece of ground to vetch and rye after disking the rye and vetch stubbles in the fall of 1916.

We seeded the 1917 crop, September 9, 1916. The preceding crop was seeded September 25, 1915. We find that early sowing pays best. All agricultural experts and persons who have made a success of raising it concede this fact. It proved

to be true in our case. While the crop was not all we desired, we were amply repaid for our efforts. We seeded some better ground to vetch and rye last year and had a very nice stand and good crop, but since our experiment was made on this particular three-acre plot we shall confine it on account of its extremely infertile condition.

We used no manure and only a little fertilizer on a part of the field where grass would not catch long enough for the frost to get a chance at it. Lime had been applied in 1915 at the rate of one-half ton per acre. Really no fair chance was given the crop for before we seeded it to vetch and rye in 1915, we could not raise anything on it. Then taking off a moderate crop in 1916 and immediately reseeding it without applying anything to replenish its depleted condition does not look like a fair show. We knew it, but we wished to make a further test. We knew that the potash and phosphorous supply weer at a minimum but we figured that the nitrogen was still lower in quantity, and that the vetch would supply its own nitrogen and store a surplus in the soil, if the bacteria were present. We needed to fear nothing at all on this point for we had as good an inoculation as anyone could wish for on the first crop. Many times the inoculation fails to show up till the second or third year. We applied no bacteria to the seed or soil in the fall of 1916 and had an enormous inoculation. We knew that the lime which had been applied in 1915 would release much potash, in fact more for the second crop than for the first. So we were not so short on anything but phosphorus. But we were after the nitrogen, and we got it. The lime had sweetened the soil so that the bacteria could work. We found no trouble in harvesting the crop with a binder. Many object to growing vetch and rye, giving as their objection the impossibility of cutting it with a binder because of the dense interwoven mass a good crop produces. We have never seen any which we could not cut with the binder, and we have had and seen some very heavy crops. The only trouble we would think of would be when it lodges. Any grain is difficult to handle when it lodges.

In order to allow you to judge for yourself as to the merits of our experiment, I shall give a crop record of this piece for the past two seasons. (See end of article.)

The seed was of a very good quality, averaging from 20 percent to 30 percent vetch. By consulting the records above, it will be seen that the profit increased about 100 percent. This is due partly to a better yield, and partly to an advance in prices. Following are a few reasons for the increased yield.

1.—Vetch thrives only when the necessary bacteria are present to promote the growth of nodules on the roots. The organisms which live on the roots have the power of changing the nitrogen of the air into nitrates which is the form in which plant tubes take up nitrogen. All inoculated legumes do the same. This is what we mean by saying that legumes draw nitrogen from the air and store it in the soil.

2.—Vetch has immense root systems. This aids in forming humus which holds soil water. This soil is deficient in humus and it is possible that more water was held for the second crop than for the first.

3.—By disking we kept the stubbles on the surface and thus forming a mulch we kept it from washing and excessive heaving.

4.—Since any legume will thrive better the second year than the first on the same ground, owing to the bacteria being present naturally, we attribute much to this fact, for the bacteria surely were there.

Vetch and rye make a fine and valuable hay when mown at the proper time. For a hog lot it is worth trying. We have found hogs to be very fond of it. A neighbor who had a very nice piece last spring allowed his pigs to roam over it and he found to his surprise that they picked out the young vetch to such an extent that only the rye matured. Thus far the demand for the seed has been too great to allow farmers to make any real trials in growing vetch for hay, pasture or green manure. Were there no demand for the seed it could be utilized in these ways so as to incur no loss. When we first seeded vetch and rye, the venture was a joke of the neighborhood. Now we have a number of neighbors who sow it. Criticism has given way to something better.

While it is a profitable crop, no matter in what angle we view it, we would say that, since wheat has a fixed price, and one which is likely to hold good for some time, and considering the demand for wheat, it is not advisable to grow vetch and rye where wheat can be grown successfully. Where wheat is a failure vetch and rye can be made a success.

We are not satisfied yet. We have again disked the same piece this fall and seeded it to vetch and rye, applying about 200 pounds of 16 percent acid phosphate per acre. What the results will be depends much upon the winter. At this writing, November 20, its appearance is as good as the best wheat fields. We are optimistic as to the outcome and willing to take chances. We expect to seed to clover next spring and start the field in our four-year rotation. If circumstances permit we shall acquaint your readers with the outcome next year.—Warner E. Farver. Holmes Co., Ohio.

A Good Winter Job In Comfortable Quarters

Crop Record for 1915-1916.

Time spent with team in preparation, sowing, harvesting and threshing, seven days at $3.	$ 21.00
Cost of threshing 35 bu. at 4 cents	1.40
One and one-half tons lime	12.00
Seed	8.00
Fertilizer	3.00
Bacteria for vetch	2.00
Total expenses	$ 47.40
The yield averaged 11 2-3 bushels per acre, or 35 bushels. The seed sold at $2.50 per bushel; value of seed	$ 87.50
Value of straw for bedding	17.50
Total value	$105.00
Deducting expenses	47.40
Total profit	$ 57.60
Profit per acre	19.20

Crop Record for 1916-1917

Time spent in preparation, sowing, harvesting and threshing 7½ days at $3.50	$ 26.25
Cost of threshing 45 bushels at 5½c	2.47
Fertilizer	4.00
Seed	10.00
Total expenses	$ 42.72
The yield was 15 bushels per acre, or 45 bushels. The seed sold at $3 per bushel	135.00
Value of straw for bedding	20.00
Total value	$155 00
Deducting expenses	42.72
Total profit	$112.28
Profit per acre	37 42

FALSE ECONOMY

Josh Billings, the noted humorist, once said: "There is certain kinds of economy that don't pay. Trying to straighten crooked pins is one of them."

There are farmers, and many of them, who try to practice economy by straightening crooked pins. The pins, when finally straightened, are good and serviceable, but—here's the point—are they worth the time and labor expended on them?

The farmer's labor possesses a value and whenever the labor he expends is worth more than the product he produces he certainly isn't practicing economy. A few weeks ago, a friend of mine hauled a load of pumpkins to town and sold it for two dollars. The trip to town and back took a whole day. Less than half a mile from the man's home, a farmer was giving employment to all the teams he could get at $3.50 a day. It certainly would have been economy for this man to let his pumpkins rot in the field and worked for his neighbor.

All farmers do work for which they get no adequate returns. This is true because of the uncertainty of the seasons and other factors that influence yields. But, whenever a farmer does work—under the guise of thrift—for which he knows he will not get adequate returns, he is not practicing economy.

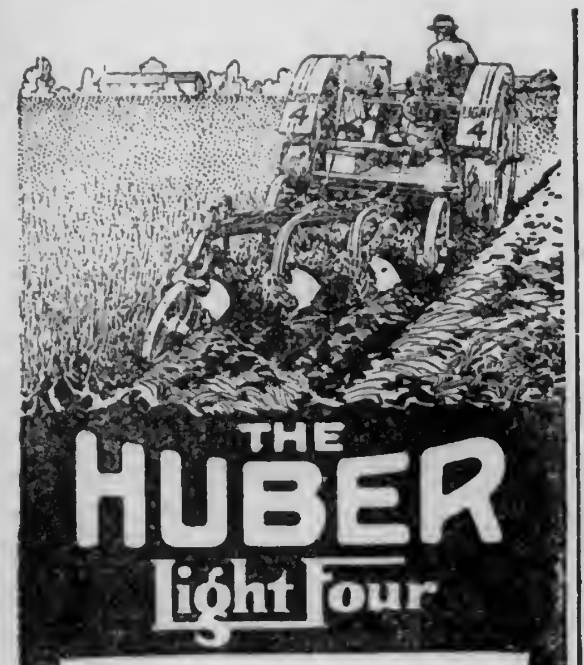
Economy doesn't necessarily mean saving. It means the best application of one's time and resources. If a certain crop isn't worth the time and labor required to make it, it may be an economy to let it rot in the field and go to work on some gainful operation.

Thriftiness is a good quality for a farmer to possess, but it should be born in mind that there are two kinds of thrift—the paying kind and the losing kind. The thrift that does not pay a dividend on one's time and labor should be locked up in the wood-shed and kept there.—T. Z. Richey.

CHEAPER LAND PAYS HIGHER INTEREST

Results of an investigation conducted by the Missouri State College of Agriculture offer some useful suggestions to land owners and renters These studies have indicated that the cheaper and less productive land is more often rented on a share basis, while the high priced and more productive land is more often rented for cash or for a share of the crops and cash for pasture land. Land rented for a share of the crops nearly always brings a larger rent to the owner than land rented under any other system. The lowest rate is realized from cash rental. One hundred and seventy-six cash rented farms paid the owners an average of $3.50 per acre in rent; 289 farms rented for a share of the crops and cash for pasture land paid the owners $4.90 per acre; 383 share rented farms paid an average of $6.39 per acre. In paying cash rent a tenant gets the land for less but carries a risk which is offset on share-rented farms by the higher rent rate. The statistics show that a cash renter could afford to lose two crops in five years and still pay a lower rent rate than the share renter.

The cheaper land pays a higher rate of interest than the higher priced land. Land worth $200 per acre or more paid an average of 3.9 percent interest under all systems of rental. As the land decreases in value the interest increases.



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Grow What You Can

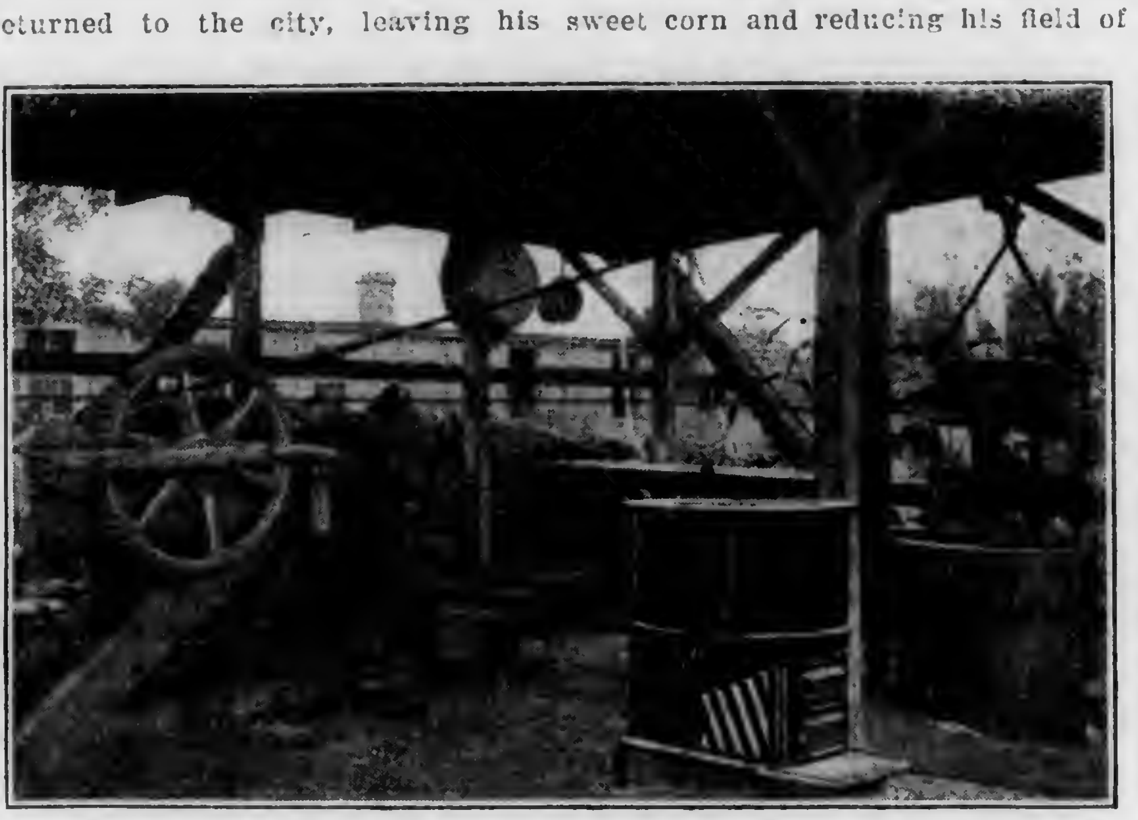
If Necessary, Can What You Grow

What George Miller is doing on a small farm near Richland, N. J., is of interest to all farmers. His policy is to "grow what he can and can what he grows".

Two years ago, when George was a lad of eighteen, he was persuaded to enter the County Agricultural School at Minotola. This school teaches vocational agriculture for about twenty weeks every winter and then assists the student in his farm work during the balance of the year. George liked farming but he had little faith in "book farming" until the agricultural teacher stopped one day and told him that he was not fertilizing properly. He agreed to follow the instructor's advice on a few rows of potatoes, with the result that those particular rows produced better, larger and more potatoes than the rest of the patch. And that fall George entered school.

The next summer he planted according to a system, kept an accurate account of all of his work and was very much disappointed to find that he was not getting sufficient returns from his produce to pay a profit. He decided that if he could can some of it he might be able to turn a losing proposition into a paying one. He immediately looked up the advertisers of home canners, got prices and purchased a small outfit for eleven dollars. That summer, with the help of his mother and younger brother and sister, he canned 2,500 cans of tomatoes and 1,500 cans of string beans.

Before going further it should be said that George lives on a small farm of 15 acres, about 12 acres of which are under cultivation. Mr. and Mrs. Miller bought the farm about 20 years ago, when the entire place was a scrub-oak patch. Mr. Miller worked for a few years clearing up the land and then finding that he could not support his family returned to the city, leaving his family on the farm and sending them what he could from his wages. Gradually more land was cleared until practically all of the land was fitted for cultivation, the last half being done by George, who stopped school when 15 years old. But the farm did not pay until George started to school and learned something about how to handle the problems a farmer has to face.



Work Shed Showing Stove For Heating Water, Canner Hoist, Saw, Etc.
—Geo. Miller Farm

The success of the venture in canning during the past summer spurred George on to bigger things. He applied at the local bank and received a loan with which to purchase a much larger canning outfit than his first one. He also installed a water system with an overhead tank and a small gas engine to do the pumping. He erected an open shed in which to work and house his canning outfit, and purchased 10,000 tin cans and took an option on 6,000 more to be delivered in July. The entire plant cost about $400 to erect, besides the labor to build, doing all the work in the winter, outside his school hours. He was able to purchase his cans for $34 a thousand. The price later materially advanced, which indicates that his early contract was a good business venture.

The work on the farm is all done by George with the help of his mother, the father still working away from home. George is a great reader and spends his evenings at home studying and working out his plans which he always presents to his advisor before he proceeds to carry them out. Mr. Miller has installed the canning outfit only to can what he can grow on the farm and is planning his crops for the future with that purpose in view. He believes that produce canned directly from the field is better than factory canned, and intends to grow produce of a high quality for particular trade. Stores have already asked for contracts on his season's output as a result of the quality put up last summer. The accompanying illustrations show the plant and some of the product.

This last fall George Miller canned 2,700 cans of string beans, 500 cans of peas, 500 cans of sweet corn and 2,500 cans of tomatoes. The extremely dry weather during August did considerable damage in this section, thereby practically ruining the sweet corn and reducing his field of string beans and tomatoes. George was not discouraged and purchased 30 barrels of pears from which he expected to put up nearly 3,000 cans. He also had about three acres of white navy beans and expected to try his hand at canning pork and beans during the winter. It is doubtful if there is another boy of George's age in the state of New Jersey that has worked any harder to bring about results along these lines. He has had many obstacles to contend with but has always been ready to listen to advice and keep going. He still believes in "growing all he can and canning all he grows."—Robt. D. Maltby, Director Vocational Schools, Atlantic Co., N. J.

A STITCH IN TIME

Order Early

A train running on time has become an exception. All kinds of traffic are congested. The writer is speaking from experience when he warns farmers to order all seeds and machinery months ahead of time. Gang plows ordered and shipped in September arrived late in November. Angle lugs for a tractor shipped six weeks ago by express have not arrived. Shipments of machinery and supplies have repeatedly arrived in damaged condition so that returning was necessary, causing a double delay. There is no exaggeration when I say it is not too soon to order harvesting machinery. Orders for seeds placed now are not too sure of being completely filled; any way, the sooner the seed dealers get up against their problem the better they can handle the situation.

The Canner Outfit.

The task of getting repair pieces for machines rushed thru is at present exasperating; for instance, the result of delay in getting a new casting for a plow tractor at corn planting time when each day can be put on either side of the ledger according to whether the machine works. Every dealer should be urged to keep in stock a complete line of repair parts. The astounding breakage of machinery in transportation is due to rush and congestion in many cases and to criminal carelessness of railroad employees entirely too often. Let us hope for a better day of railroad service in the near future, but precaution is the only resort now.—Wm. J. Watts, Clearfield Co., Pa.

THE FARM ICE POND

Two days' work each week will provide a supply of ice on nearly any farm, and every farm north of the freezing line should have it. The ice is more than a luxury for making an occasional freezer of ice cream or cold lemonade. It is a necessity when there is a baby, in case of sickness or for proper economy and cleanliness in the keeping of foods.

The ice may be secured, where there is no large creek or river, by deepening a hole in a small stream, or, lacking that, by making a pond for the purpose. Be careful that the water used is pure; or if it is not, be careful that none of the ice is used in water, for drinking. Use ice made from water you would not drink only for cooling things indirectly, thru the wall of a can or bucket or jar. The best kind of ice is that made on a pond fed by spring water that is dammed back but which flows constantly.

The making of a pond is a rather big job if attempted by hand or with horses, but may be made comparatively easy by blasting. If water covers the ground or fills it nearly to the surface, all that is needed is to load charges within a foot and a half or so of one another, and fire them all together by firing the central one with ordinary cap and fuse. It is important to fire them all at once, and if there is not enough water in the ground to make this possible by transmitted detonation, then an electric blasting cap must be used in all the charges. If the blasting is done right the result will be a pond three feet deep or deeper, which will give ample room for the saw to work. Excavations up to 20 feet wide can be made easily by blasting.

Water Tower built entirely by Geo. Miller.

To store the ice, a pit in the ground is excellent, provided there is a tight roof over it. Blast out the excavation as you would the pond or ditch, then make a frame of old lumber or poles, small enough to allow a space of a foot or more between the outside of the frame and the walls of the earth. Line this with rye straw and fill with sawdust. Rank the ice closely in the center of the space inside and cover it a couple of feet deep with sawdust. It will keep all summer. If you can locate the ice house deep under the shade of evergreens, on the north side of a hill or behind buildings, so much the better; but don't place it too far away from the residence.

TRACTOR FOR GENERAL PURPOSE WORK

Last spring we bought a 12-25, four-wheeled tractor. I had never run an engine except a one-cylinder spray outfit. The demonstrator stayed a day and when he left he said: "Give her oil, gas and water, and you will have no trouble." He was right. Our repair bill has been very small, considering a green driver in his first season.

I have plowed every kind of soil from alfalfa sod on heavy clay to light sand; have also used it to fit the same and find that I can do the work of from nine to twelve horses, and our horses are good ones. After the spring crops were in I moved a couple of buildings with the tractor. It worked fine on this as I could move it an inch at a time. When haying started I made two stub tongues for the mowers and hauled them. Will either buy bigger machines this year or draw three. I also used it on the side-delivery rake and on the loader. It works great as it is absolutely steady. We could not get a tractor hitch to haul two binders. I used it on the rope at the hay barn and found it faster than horses. I have also plowed and fitted beds for shrubs and graded a roadside and the roadway leading to it.

On from 10 to 15 gallons of gas I can do as much in 10 hours as from nine to twelve horses will do in plowing or fitting. I can do most anything with it that I can do with horses except cultivate, and I can do that when crops are small. When the tractor stands, the feed bill also stands. We are so well pleased that we bought a second outfit this fall. This one uses either gas or oil and has worked fine to date. I think that many buy too small a tractor.

We built a silo this year and used a neighbor's large sized cutter. We ran about eight hours a day, all the cutter would take, and I averaged about 12 gallons of gas a day. It is almost impossible to figure the extra work a man can do with it in a hurry-up time, as it does not have to rest.—Orin S. Bacon, Jr., Ontario Co., N. Y.

TURN CROPS INTO MEAT

The Feedstuffs Supply

Cereal increases of 1917 over 1916.

Corn, bu.	607,842,000
Oats, bu.	328,722,000
Barley, bu.	20,732,000
Rye, bu.	3,661,000
Total increases	965,957,000

Will farmers breed sows now for a pig crop next spring large enough to take care of the hogs' share of the big 1917 corn yield? With the first season of production in the war emergency showing marked increases in feedstuffs, Federal officials are wondering if the other half of Agriculture's obligation—converting the feeds into meat and other food products—can be met. Upon the consumption of the 1917 feed crops depends the success of growing greater crops next year. Farmers are not likely to carry out proposed increases in 1918 if large surpluses of the 1917 harvest remain unfed in their bins.

Live stock make the corn crop marketable. Of the normal crop 75 to 80 percent is fed to stock. When the yield is above normal a still greater proportion must be fed in order to make the remainder marketable at a profit. The U. S. Department of Agriculture estimates that 20 percent of the corn crop will be soft. This soft corn can only be used for live stock. The increase in cattle feeding in the corn belt can be depended upon largely to take care of the soft corn situation in the states which are called upon for an increase in pork production. It is safe to say, department officials believe, that there will still be an abundance of corn of a marketable quality to meet the usual market demands and insure reasonable prices for corn to feeders who must purchase grain.

Old Style V-Shaped vent Easy to Rip

Blue Buckle OverAlls have a solid reinforced back band that can't rip; a solid denim fly cut into the overall, not sewed on! Blue Buckle Coats have the non-binding raglan sleeves.

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Blue Buckle OverAlls do the same fine, unusual job for farmers they do for engineers and machinists. They certainly make a long stand on rough work—*because they're made toughest where strain and wear hit hardest!*

Measure Blue Buckle OverAlls point for point—materials and union workmanship that is best. You'll quick know the quality and wear-weight of the *best* indigo blue denim. A try-on proves their full-fashioned loose-cut roominess and comfort. Free-swing is allowed for every work-movement!

Blue Buckle Union Made OverAlls

put the usual overall torment—R-I-P-S—right out of commission. For instance, a solid reinforced back band does away with the old V-shaped vent and buckle and *makes ripping out of the question!* Every seam is so stoutly stitched that they are guaranteed not to rip. Blue Buckle service-quality extends right through to *real* brass buttons, patent snap clasps on the "lifts," and wear-proof buckles and loops!

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Poultry

SELECTION AND CARE OF POULTRY BREEDING STOCK

Health and Vigor

One of the prime essentials in poultry breeding is to use only strong, vigorous, healthy stock. It is only by continuing to do this that a flock can be built up which will have strength and vigor and which will produce strong, fertile eggs, strong chicks capable of making quick growth, and pullets with sufficient stamina to stand the strain of heavy egg production. The appearance of a bird is not always a sure indication of its vigor, but appearance and action taken together are a fairly reliable basis for picking out vigorous birds. The comb, face, and wattles should have good, bright color; the eyes should be bright and fairly prominent; and the head should be comparatively broad and short, not long and snaky or crow headed. The bird should be alert and have a vigorous carriage. The legs should be set well apart and strongly support the body, with no tendency to weakness or knock-kneed condition. The bone as seen in the shanks should be strong, and not too fine for the breed. Plumage should be clean and smooth. Lack of condition often accompanies soiled, roughened plumage. Fowls that have been sick but apparently have recovered should not be used for breeding if it can be avoided.

Purpose of the Breeding

In selecting stock for the matings, the purpose of the breeding should be kept clearly in mind. If the desire is to produce exhibition stock, birds should be selected that are nearest the standard in type and markings or that will combine their qualities to produce offspring most nearly approaching the standard. If the desire is to produce table fowls, birds that have a body shape suitable for carrying an abundance of meat should be selected as breeders. They should be broad and deep of body, have good length both of back and keel and especially a broad breast well covered with meat. If the desire is to produce stock for eggs, birds should be chosen as far as possible that are good egg producers or are the sons and daughters of good egg producers

Time to Mate

Matings sould be made at least two weeks before beginning to save eggs for hatching. If less time is allowed, the maximum fertility is not likely to be assured. It is often desirable to mate even farther ahead than two weeks so that a few eggs can be incubated for five or six days to see whether they are fertile. If these eggs are not fertile, there is still time to change the male bird and thus insure fertile eggs for the earlier hatches. Matings should be made not later than February 1.

Size of Matings

The breed influences the size of the matings. Under yarded conditions it is usual and desirable to run from 12 to 15 females of the lighter type, such as Leghorns, from 10 to 12 females of the general-purpose type, such as the Plymouth Rocks, and from eight to ten females of the heaviest type, such as the Brahmas, with one male. Where the breeding fowls have free range and the male is strong and vigorous, it is possible to obtain fertile eggs from a considerably larger flock of females. A vigorous Plymouth Rock cockerel on free range should give good fertility when mated to 20 to 25 females, while a Leghorn male under the same conditions can be mated successfully to 30 or 40 females. If eggs for hatching are desired from a flock too large for a single male to fertilize, two or more males can be run with it either at the same time or by alternating the males on successive days.

Age of Breeding Stock

Pullets or hens, cockerels or cocks can be used in the breeding flock. Hens, however, are to be preferred to pullets because they lay larger eggs and seem to give better fertility and stronger chicks. Yearling and two-year-old hens are to be preferred to older hens. Any birds, either male or female, that have proved to be especially valuable breeders should be retained as long as they will breed.

Good Specimen—B. P. Rock

Free Range for Breeding Stock

If possible, the breeding stock should have free range. It is better if this be provided during the entire fall and winter before the breeding season; but if this be not possible, free range just preceding and during the breeding season will be of great value. Birds on free range will give a higher fertility, better hatches, and stronger chicks.

Maintaining the Fertility

The breeding flock should be watched to see that the fowls keep in condition. Examine the birds and houses to see that they are not infested with lice or mites. If the birds are overrun with either of these pests, the fertility will be affected seriously or totally destroyed. Care must be used to see that the male does not get his comb or wattles frosted. If these are frozen to any extent, his ability to fertilize eggs will be impaired and will not be recovered for several weeks. When the weather is very cold the males intended for breeding should be placed in a box or crate partly covered with a bag or cloth to prevent freezing of the comb or wattles. It is also well to examine the male occasionally and see that his crop is full and that he is not growing thin. Sometimes the male is so gallant that he allows the hens to eat all the food, with the result that he soon gets out of condition. If this happens, the male must be caught up at least once a day and fed separately from the hens.

Feeding the Breeding Stock

The breeders must be fed to keep them in good condition and at the same time to produce eggs. Any good ration fed to layers is suitable for this purpose, but it should not be extremely forcing, or, in other words, it should not have an extremely large proportion of beef scrap. The birds should be in good flesh but not allowed to become excessively fat. All whole or cracked grain should be fed in the litter so as to make the fowls exercise by scratching for it. Unless the flock has access to some natural supply of green feed, which is not likely during and preceding the breeding season, it must be fed some of this material in the form of sprouted oats, cabbage, mangels, or cut clover or alfalfa.—U. S. Bureau of Animal Industry.

A Poultryman in the Making

RATION FOR LAYING HENS

Standard War Poultry Ration adopted by Connecticut, Massachusetts, New Jersey and New York (Cornell).

The Government has recently issued a regulation prohibiting the use of more than 10 percent of any grade of wheat in rations for feeding poultry. To meet this requirement and at the same time observe the fundamentals for poultry rations, representatives from the Poultry Departments of several eastern colleges adopted the following ration:

Grain.—500 pounds cracked corn, with a variation of 400-600 pounds. 100 pounds feed wheat, with no variation. 200 pounds barley, with variation of 100-300 pounds. 200 pounds heavy oats, with variation of 100-300 pounds.

The scratch grain to contain not less than 10 percent protein, 68 percent carbohydrates and four percent fat, and not more than five percent fiber.

Mash.—100 pounds wheat bran. 100 pounds middlings. 100 pounds corn meal, corn feed meal or hominy. 100 pounds gluten food. 100 pounds ground heavy oats. 100 pounds meat scrap.

The mash must contain not less than 20 percent protein, 58 percent carbohydrate and five percent fat and not more than seven percent fiber.

Meat scrap should be fed as long as it is obtainable or skim milk or buttermilk used as a substitute.

Feeding Methods and Practice

Amount.—Feed according to the appetite of the birds; no definite rule can be given. Feed scantily of grain in the morning and give all the grain they will eat in the afternoon in time to find it before dark. There should be no grain in the litter at noon; when found, it indicates feeding too much in the morning.

The mash is fed dry in hoppers open all day.

In general, feed by weight about equal parts of grain and mash.

Litter.—Induce exercise by feeding all grain in dry, clean, straw litter, six to eight inches deep. The common straws, in their order of desirability, are wheat, oat, barley, rye and buckwheat; shredded or cut corn stalks, shavings or leaves may be used where straw is not available. All feed and litter should be strictly sweet, clean and free from mustiness, mold or decay. Serious losses frequently occur from these sources due to spores which may develop into fungus molds in the lungs or intestines.

Green Feed.—A green range of alfalfa, clover or grass furnishes the ideal condition. When these are not available it is necessary to give the birds some kind of succulent food. Mangle beets, cabbage, sprouted oats or green clover are usually considered the best green feeds. If these are not obtainable, apples and potatoes make a valuable addition to the ration. Feed at noon in such amounts as the birds will clean up before night. This will require about 25 to 30 pounds per week for 100 hens. Decayed or frozen feeds should not be used as they are a common source of digestive disorders.

Grit and Oyster Shell.—Hard, sharp grit is necessary for grinding feed; oyster shells to supply lime for egg shells. Neither will replace the other.

Water.—One dozen eggs contain about one pint of water. Clean, fresh, pure water should be kept constantly before the hens and should be renewed at least once daily.

Moist Mash.—Recommended only to hasten the development of late hatched pullets or to help in keeping up egg production of hens in late summer, especially those which are not to be used for breeders the following spring.

Wheat screenings are often loaded with weed seeds and dirt, but good screenings may be used if the price is low enough.

Mustiness in feed wheat, wheat screenings or any feed may be detected by taste or odor. The odor is made more apparent by the application of moist heat. Hold the sample in the closed hand for a few minutes or pour hot water on the sample. Musty feeds are dangerous. (See Litter).

Buttermilk or skimmed milk may be used in place of meat scrap, allowing 12 to 14 quarts per 100 hens per day.

Green cut bone is a very stimulating feed and should be used with care. It is not safe to feed unless it is fresh. If fed in amounts of about one-half ounce per hen per day, it may be used to replace half of the meat scrap.

Clover chaff, either dry or steamed, is relished by the hens and may be advantageously used to add variety to the ration.

The Day for Fertilizers

The Breeders Gazette of Nov. 1 says:

"There never was a day when fertilizers would do so much good on the lands of this country as during this war. We need still greater yields. Fertilizers produce them without causing much extra work excepting to harvest the increased crops. With the scarcity of farm labor it is difficult to increase the acreage of land which any farmer can operate next season. With the high prices prevailing for crops it is possible to make a profit on the fertilizers used even on ordinary grain crops."

Practically every farmer realizes the truth of this. Hired help can get more per acre from land that is well fertilized. A bushel of wheat, corn, oats or potatoes now buys more fertilizer than ever before.

A·A·C· FERTILIZERS

produce more fodder, hay and grain; the farmer can keep more stock to make more manure; and he is using the fertilizers. They pay him. We only wish we could produce more of them. In view of the abnormal war conditions, our friends must get their orders in early and bear with us in patience if delivery is late; for there never was a time when every condition affecting the fertilizer trade was so much upset as right now. *Don't drive home an empty wagon. Order early.*

If we have no agent in your town, we want one. Write us for agent's name or ask for an agency yourself. It is paying 50,000 others. Why not you?

READ THIS BOOK

No matter how many other books about fertilizer you have read, *read this one.* It is a new and different book. There isn't any advice in it for one thing. Probably you have about all the advice you need already. This is just a common sense book. You will read it and say: "That's so! Why haven't I thought of that before." If you are using fertilizers you are probably making money with them, but *are you making enough?* How do you *know?* By making little changes here and there, as you sometimes shift your farm labor and teams, perhaps you can make more. This book may help you.

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PHILADELPHIA, PA., JANUARY 19, 1918.

Intensiveness vs. Extensiveness

Between the question of short labor supply and the urgent advice of government officials to plant more extensively, many farmers are in a quandary as to how to act and how much to plant. There is a genuine desire on the part of farmers in general to do the best and most possible. But whether that can be accomplished by planting more acres, or by using the available labor in intensive farming, is the question in debate.

In the great majority of cases we do not believe that the degree of intensity observed is great enough to warrant any reduction for most profitable results. Under average conditions we believe that the farmer with a given amount of labor who is debating whether he shall plant ten acres of corn and cultivate them as usual, or whether he would do better by himself and the nation to spread the same labor over fifteen acres, will do better to plant ten.

Of course, there is a limit to the possibilities of profitable intensive culture, but that limit is seldom reached in this country. The average farmer harrows and cultivates too little rather than too much. He also applies the minimum amount of fertilizer, and gives the minimum of attention to seed selection and variety adaptation. For these reasons we believe that the greatest service can be rendered and the greatest profit made by maintaining present standards, and even raising them if the labor supply will warrant, rather than to spread over more acres at the expense of thoroness.

* * *

Cost Records

The best weapon the dairymen have had in fighting for their rights in the milk market has been records of the cost of production. The Interstate Milk Producers' Association recognized this fact from the first, and it has continued its efforts for price improvement on this basis. It has shown what prices are actually needed to pay the cost of producing milk and keep the dairy industry alive. The first public hearing on the Philadelphia milk market situation showed the value of authentic figures. There was reason to believe that some of the people interested in that hearing hoped to make it a "whitewashing" investigation. They hoped to satisfy the public. But when the Interstate Association called in its members, and these members read figures from their record sheets, showing just what it cost them to produce milk, what that milk brought them on the market, what effect the low prices were having on their business and what they would be compelled to do unless prices were increased, the hope of an innocuous whitewash disappeared. The public was convinced that the request for a price increase, which threatened to become a demand, was not a "gouge," but a determined effort to protect the dairy industry and prevent its destruction. The dairymen presented the truth in indisputable figures.

The growing supervision of all business affecting the public welfare increases the demand for accurate cost records. The farmer has more to gain from publicity of such accounts than any other producer. He must know what it costs him to grow his crops and his livestock and how much it costs to manufacture his by-products if he is to produce to best advantage. And he must be able to show the cost of production if he is to secure the consideration on the markets that is accorded other producers. Following its early policy, the Interstate Milk Producers' Association is preparing to continue and enlarge its activity as a bureau of information. It will gather from its members all of the information possible on milk production costs. It will welcome authentic reports from its members at all times, and will endeavor to supply the membership with needed information on feeds and other dairy supplies. Members will do well to make this an important feature of the Association service.

* * *

Helping Pete

Since the publication of the article on "War-Time Problems on the Farm," by Pete, in our issue of December 29, we have received many letters commenting on plans and suggestions offered. These letters show a divergence of opinions and plans that shows, first, that farmers are giving serious study to the work of the coming summer. Many express appreciation of suggestions that will be helpful to them. Some frankly disagree and admit that they are not as hopeful of results and not as confident of their ability to solve all of their problems as Pete appeared to be. And some strongly intimate that they believe the article to be written by the editors, or some one closely associated with the editorial office, and therefore not "sure enough" farmers. We feel genuinely flattered by the latter class; but, much as we would like to claim credit for the good, sound and practical farm doctrine advanced in the article, we must admit the truth and enter our plea of not guilty. We regret that Pete asked us to withhold his name, but we can assure all doubters that he is a real farmer, that he is practicing what he preaches and that he is making good on the farm.

Why do farmers doubt the sincerity or question the judgment of a brother farmer who speaks optimistically of his next year's work, or who approaches it with confidence? Only a few of the letters received expressed this attitude, but enough to raise the question. The American farmers are facing the most complex situation that they have known in many years. Every article they have to buy for the maintenance of the home or the farm is high in price. Most of their staple requirements, as feeds, fertilizers, seeds, machinery and farm implements, are not only high in price, but they are difficult to get. The farm labor supply is so short and the prevailing wages are so high that help is out of the question with many. Current market prices on farm products, while higher generally than in previous years, do not encourage the investments necessary to do all that some would like to do, or even to insure a profit on all that can be done. And perhaps most discouraging of all, the public mind, as reflected in the city press and in the attitude of some of our public officials, seems wholly ignorant of and indifferent to the serious problems of the farms.

These are the discouragements, the causes of pessimism. But most of the other essential industries are confronted with much the same problems. Nothing is normal, and all are feeling the effects of the war preparation. And this war is as much a contest between the American farmer and the German farmer as it is a conflict between the soldiers of the two nations. Food, clothing, munitions and ships to transport them are as essential as soldiers, and the classes producing these commodities will be as active combatants for the next two years, or until the war is over, as the men in the trenches. The farmers have great obstacles to combat, great handicaps to overcome, great victories to achieve. So have the boys that are being sent to the front. And the manner in which the farmers produce will determine in a great measure the number of our boys that will never come back. The Nation has a tremendous task before it, and the farmers have a most important part in completing that task successfully.

How are the farmers approaching their work for the coming year? We have had Pete's story of what he is doing and what he plans to do. We believe that he typifies the general farmer mind. He is not minimizing any of his troubles. He has gauged them carefully and as accurately as conditions will permit, and he is preparing to go ahead and make the best of conditions as they are. So will most farmers, and the results will be measured in the crops of the coming season.

We would not infer that farmers should be indifferent to unjust conditions, or that they should supinely submit to inequalities because of the duties laid upon them. There are errors in our economic life that are making the present tasks harder. There have been and still are unjust burdens laid upon the farmer because of a lack of knowledge of the farmers' conditions. These must be remedied if the farms are to do their full duty in this war, and they must be remedied primarily thru the constructive action of the farmers themselves. But they will be worked out more effectively and more certainly thru unity of purpose to do full duty by ourselves and our nation in time of great need than in destructive criticism that leads nowhere and accomplishes no good.

* * *

The Industries and the Army

Up to date, about 1,300,000 men have joined the colors. Next month 387,000 more will be called. With these facts in mind we can easily understand why man-power is at such a premium. From a productive point of view it is the same as if double this number were withdrawn from the industries, since the work which was done by these men must be done by those remaining. In addition to this, the occupation of a soldier demands greater supplies than would be used by the same men in civil life. For these reasons, productive enterprises are short of sufficient labor, and owners are frantically bidding against each other in the labor market. So great are the demands of the government that there is talk of not only controlling the labor of productive enterprises, but the investment of capital as well, so that each may most effectively aid in the production of war necessities.

There is no way of deciding which industry is relatively most important as regards success in war. Insofar as the maintenance of human life is concerned, food is of first importance, and, of course, only live soldiers are useful. But even live soldiers are of little value in this war unless they, together with ample supplies, can be transported across the sea, and this requires great numbers of ships. When there, the men are not effective unless they have munitions of war, hence the manufacture of these supplies must run at full blast. Since all these and other industries are absolutely necessary, the important thing to do is to see that each is maintained at the highest state of productivity, and this revolves around the problem of maintaining a sufficient supply of labor in each. In order to do this, it may be necessary to suspend those lines which produce non-essentials and direct the labor and capital into essential industries.

As to the effect of the last draft upon the leading industries, the following table from the report of Provost-Marshal Crowder is interesting:

Industry	No. engaged	Total called to service	Pct. called
Agriculture	13,843,518	205,731	1.5
Coal mines	600,148	18,710	3.1
Building industries	2,878,729	57,970	2
Clothing industries	754,062	7,370	1.1
Food industries....	396,510	11,687	3
Steel mills........	373,701	22,068	5.1
Shipbuilding	62,071	2,628	4
Paper and printing	507,767	6,425	1.2
Steam railroads ..	1,236,867	21,557	1.7

—*Table from Christian Work (Jan. 12).*

These figures do not include the men who enlisted, and there is no way of knowing how many from each industry volunteered. While these figures show that agriculture has been affected less than some others by the draft, it is well known that the drawing power of big wages paid in other industries has drained more labor from the farms during the last two years than has the army. In attempting to solve the farm labor problem this latter factor must be taken into consideration, and one or the other of two policies be adopted; either limit the profit-making of other industries so that reasonable wages obtain, or take the restrictions away from the food market so that the law of supply and demand may place food production upon a par with other business.

HARRISBURG NOTES

May Curtail Road Work.—It is very probable, because of the request of the president of the United States, that only such public works as are absolutely essential should be undertaken during the war; the difficulties encountered in securing bids that are satisfactory and the uncertainties of prices of labor and material indicate that the state will engage this year only in maintenance of highways and construction of such links in the main highway system on which counties and boroughs agree to share cost. The latter feature is desirable because it will create local interest and perhaps obtain better figures. Twenty-nine counties and over a dozen boroughs have agreed to go along on this basis and to help eliminate some stretches of highway which have been much criticised. The subject of curtailment of state work is being very seriously considered at the Capitol and recently it was suggested that new work be given up except where it is necessary to overcome dangerous conditions, or to meet overcrowding, or furnish facilities of national defense.

Autos Owned In Country.—It is estimated that 75,000 of the 325,000 motor vehicles of various kinds registered by the state government are owned by farmers, this figure including market wagons and automobiles used for farm use and tractors. Efforts are being made to get at the number of tractors used for ploughing and other work so that assistance can be given this year. The increase in automobiles owned in the country has been notable and it is expected that a report showing the cars by counties will be issued by the Department of Agriculture. Efforts are now being made to gather more definite information on the horses, mules, cattle, sheep and swine than furnished by county commissioners and it should be possible before long to know what increases or decreases there have been in those lines. The sheep increase will run into the thousands and it is not believed that the loss in live stock will be as great as is expected.

To Work Together.—A very fine plan has been worked out by representatives of the State Grange and the State Federation of Labor to bring about co-operation and reduce living costs. Publicity is to be used and the view of each side exchanged. Unfortunately, the conference was given a political flavor by the men who participated and its value was discounted. However, the alliance is a vehicle that can accomplish something to the interest of the little fellow on both sides. The most significant thing done at the meeting was to frame a demand that drafted men be paroled and sent to work on farms at prevailing wages.

Must Give Profits.—In this connection it is of interest to note that the draft authorities are showing a disposition to be more considerate of men needed on the farms and that in spite of the critical war situation high army officers admit that they must watch the food sources. Draft boards have been asking men pleading for exemption on the ground of agriculture to show profits of farming, and investigations as to labor conditions in some districts have been undertaken. The next draft will be in February and then inside of a month the labor situation in rural districts will become acute. Meanwhile efforts are being made to list men willing to work in the summer time.

Tractors Numerous.—If companies manufacturing tractors are able to make deliveries at the rate they working on the plan for the midwinter agricultural exhibition the claim to people here who have been farmers of the stats can get much mechanical assistance. Already there have been over 25 types offered, but the idea will be to get as many different firms exhibiting as possible.

Bulletin At Barns.—One of the largest suggestions to be made at the Capitol has come from Highway Commissioner O'Neil who says that to encourage people who own automobiles and live in cities to buy their produce direct from the farmer and cut out middlemen and transportation costs, farmers should have bulletin boards at their barnyards where they can announce to the travelers what they have to sell.

Licensing the Dogs.—From all accounts there has been brisk buying of dog licenses under the new act which becomes effective tomorrow and the test will come when dogs are taken up without licenses or when running at large. The main purpose of the act is to secure control of dogs in sheep raising countries and local police officers and constables who fail to kill dogs are likely to feel the first effects of the act. —Hamilton, Harrisburg, Pa., Jan. 14, 1918.

NEW YORK LETTER

Schools To Be Kept Open If Possible.—Commissioner of Education, Dr. John H. Finley, very emphatically says that the schools of the state should be the last to close, as so many poor children without heat in the homes can be kept comfortable at school. He asks that theaters, saloons and other public places be closed first if necessary, rather than to close the schools. The Anti-Saloon League has also made a strong appeal for the close of saloons in cities where coal is short. In response to public demand many saloons have voluntarily shortened their hours to anticipate forcible closing.

Gary Plan Eliminated.—The much-discussed Gary plan of public school work has been abolished by Mayor Hylan, of New York City. The plan was conceded to be of great efficiency, but demanded so much more time and expense that it has received much opposition in the past year.

New York May Be First to O. K. Prohibition.—In a preliminary line-up of the stand taken by the members of the Assembly it is said that the Empire State will ratify the prohibition amendment and that it may be the first state to do so. Saloon reform is again promised in an effort to ward off the dry movement.

Action Started On School Law.—Seven members of the Legislature are at work on bills to either amend or repeal the Machold township school law, enacted last year. The strong opposition to the bill is based on the great increase of expense with no adequate benefits resulting so far.

Conspiracy Charged to Dairymen's League.—As an outcome of the investigation held by District Attorney Swann for the city of New York last October, seven officers and members of the Dairymen's League have been indicted by the grand jury of New York on the charge of controlling milk prices. R. D. Cooper, president of the League, is charged with influencing the food administration to agree to an increase in milk prices. The fact that a volume of testimony showing that farmers have been producing milk at a loss seems to have no interest for the district attorney. The counsel employed by the city consumers sees the fallacy of trying to indict 1,000,000 farmers for not producing milk at a loss. He will recommend state control of milk distribution, alleging that dealers have made extortionate profits. A conference of labor unions of the city has been held, and, inasmuch as the burden of the increased price of one cent a quart of milk will fall on the working people, they have asked Mayor Hylan to take up the plan with the Legislature of giving over to the city the milk distributing stations. The dealers seem to be in trouble on all sides.

To Pay Live Stock Claims.—In recognition of the injustice requiring owners of damaged live stock to await legislative action for claims for losses by dogs, the Governor racommended the appropiation to meet claims already due, and also one of $200,000 to pay claims accruing next year.

More State Police Asked For.—The Governor asks that one more troop of 45 men be organized, with two commissioned officers and 17 non-commissioned officers. During the partial year's work the troopers made 258 arrests and secured 207 convictions, patrolling 54,000 miles of highway.

Egg Famine Expected.—According to W. F. Priebe, head of the poultry and egg division of the federal food administration, an egg famine threatens the country. From September 1 to January 1, 85 percent of the entire supply of cold storage eggs was consumed and the other 15 percent will soon be gone. There is no relief in sight, he says. The supply cannot meet the demand, as the poultry flocks of the country have been marketed because of the high cost of feeds. This is only the expected outcome of the procedure poultry owners have been driven to, with egg prices on a level far below the cost of grains necessary to the upkeep of the poultry.

Price Fixing Disapproved.—Saying that next year's food crops are endangered by the policy of price fixing, Dean Mann, of the College of Agriculture, in a recent address clearly stated his disapproval of the policy. Farmers generally, he asserted, are opposed to such methods as they have operated to cut off profits in a time when labor is not to be had, and seeds and fertilizers and necessary machinery have not been restricted as to prices fixed on them.

Peach Crop Destroyed.—The recent zero temperatures have ruined next year's peach crop, it is announced. With continued temperatures of 15 to 24 degrees below zero, new wood growth and buds are killed, it is thought. Growers claim that if any crop is grown it will be because the previous steady, unusually cold weather kept the buds more dormant than usual.

Potato Market Dulled.—During the recent severe weather many full carloads of potatoes were frozen solid. There were no stoves in the cars, as the food administration ordered the cars to be loaded to capacity, leaving no room for stoves. Frozen potatoes have been dumped on the market at reduced prices, glutting the market for the present. Cabbage is leaving the farmers this week at $40 to $45.—F.

NEW JERSEY FARM NOTES

Prison Reform.—In accordance with the report of the Prison Inquiry Commission and the commission which has been studying conditions in the state's charitable institutions during the past year, there was introduced on the opening day of the Legislature a bill providing an entirely new method of supervising the state's penal, correctional and charitable institutions. This bill creates a Central Board of Control consisting of eight members, including representation of women on the board, to have jurisdiction over all the institutions. The members of the board are to serve without compensation. The passage of this act, which seems to be a foregone conclusion inasmuch as it is an administration measure, means the removal during the next year of all the present board of managers of these institutions thruout the state. It is particularly of interest because the proposed law will legislate out of office the present State Board of Prison Inspectors, which, with the head keeper of the prison has been managing the institution for years. This plan of dual authority has resulted in friction in the past and lack of efficiency and proper co-operation.

To Allow Killing of Deer.—Announcement has been made by the State Department of Conservation and Development that there will be introduced in the Legislature a bill providing that any person may kill a deer at any time if it is found damaging his crops. The bill will not be opposed by the Fish and Game Commission, the agricultural people have been told, but it may meet with opposition from other quarters. The Department of Conservation is urging the granges and other agricultural organizations to take prompt and emphatic action to support the bill and to urge Senate and Assembly members to vote for it. opposition is anticipated from the hunters of the state.

Farm Animals.—Latest statistics of the Department of Agriculture show that there is a total of 483,800 farm animals in New Jersey, representing a monetary value of $37,381,300. Following are the statistics in each class of animals: Horses, 89,200, value per head, $159, total value, $14,182,800; mules, 3,900, value per head, $178, total value, $694,200; milk cows, 144,100, value per head, $101, total value, $14,554,100; other cattle, 66,600, value per head, $57, total value, $3,796,200; sheep, 27,000, value per head, $12, total value $324,000; swine, 153,200, value per head, $25, total value, $3,830,000.

To Limit Political Expenses.—In line with the remarks in the message of Governor Edge to the Legislature on the curbing of money contributed to political campaigns, Senator Runyon, of Union, has introduced a bill on this subject. It provides that candidates for Governor, or United States Senator may not spend more than $25,000 in a primary, nor more than $15,000 at a general election. Congressional candidates may spend $3,500 to win the nomination, and $2,500 at the general election. The county candidates are not to exceed one-half of their annual salaries of the office they seek when running at the primaries and the same limit is provided for the general election. A State Senator may spend at the primaries and at the general election 10 cents for each voter who cast his ballot at the preceding election in that county. The rate is five cents for a candidate for the House of Assembly.

Local Option.—The local option bill, which has been introduced by Senator Mackay, of Bergen County, is expected to pass the upper branch of the Legislature here within the coming week. It was introduced on the opening day of the Legislature and was given a hearing before the Joint Judiciary Committee of the Legislature last Monday. There has also been introduced a bill to permit the citizens of a community to regulate the saloon business in the event that the community does not go "dry".—Lanning.

FARM MEETING CALENDAR

New Jersey Corn Show, Trenton, January 23-25.

Agricultural Week, Harrisburg, Pa., Jan. 22-24.

Agricultural Week, Trenton, N. J., Jan. 22-25.

New York State Grange, Syracuse, N. Y., Feb. 5-8.

New York Farmers' Week, Ithaca, N. Y., Feb. 11-16.

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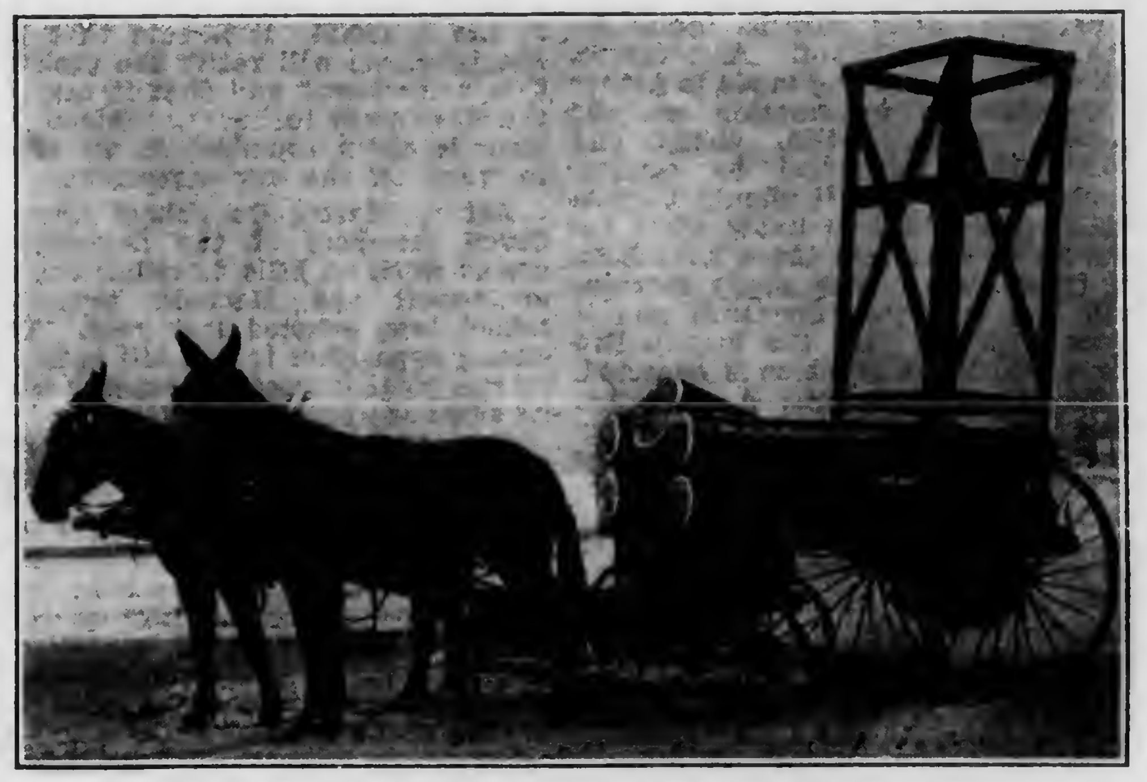
A Successful Apple Orchard

Observations in Indiana---Dr. J. P. Stewart

Recently I had the pleasure of looking through the orchard and grounds of the Burton Orchard Company at Mitchell, Indiana. There is something over 200 acres in this orchard and it was developed largely by Joseph A. Burton and his son, Turley Burton, both of whom are very interesting personalities in the horticultural world. Joseph A. Burton is a horticulturist of the old Downing or Warder type. He grows fruit primarily because he loves the business and could not rest easy without an orchard. He has also spent much of his life in a search for new and improved varieties. He has produced and grown many thousands of seedlings and has tested and rejected practically all of them but one or two, which he is just now offering to the general public, without any compensation for himself. One of these is of Winesap origin and has been named Turley after his son. It is a very fine, large apple resembling the old Winesap considerably, but averaging fully as large as the Stayman, and of a much deeper color than the Stayman attains, as a rule. This variety also appears to have a good and productive tree which is a vigorous grower and not especially difficult to keep in proper shape. If no important defects should develop in this variety on further extension of its range of growth, it should certainly be a very valuable addition to our list of apples.



Side View Of An Efficient Compressed Air Sprayer

Another variety that he is either developing, or saving from extinction, is one which he calls the Dr. Mathews. This is a yellow apple of medium to large size, very tender texture of flesh, and high dessert quality. The color is not particularly attractive, and the texture of the flesh is probably too tender for anything but the most careful handling and shipment. For the home orchard, however, where one wishes a dessert fruit of good size and extra high quality, it undoubtedly should take an important place. This variety was secured from a shipment of trees from Tennessee and two trees of the variety were planted under the name of Dr. Mathews. One of the trees died and the other grew, but it is not certain whether the latter was the real Dr. Mathews, which seems to have been lost entirely in its place of origin, or merely a development from the seedling root. This point is being studied further by the horticulturists of the Indiana Station.

One of the specially interesting developments on the place is their plant for making and applying lime-sulphur. This plant is almost mechanically perfect, and was developed by Turley Burton, who evidently has a very distinct mechanical bent, although originally educated as a lawyer. This plant will make concentrated lime-sulphur containing about one and one-half pounds of sulphur to the gallon and testing about 24 or 25 degrees Baume, at 3½ to 4 cents a gallon. Nearly everything is done by steam or compressed air and he informs me that it is not uncommon for his 16-year-old son, who is also of distinct mechanical trend, to make and dilute 25,000 to 30,000 gallons of spray material in this plant in a day and not lift a gallon of liquid in the process. The only things lifted in this work are the lime and sulphur ingredients for cooking and the coal necessary to keep the fire going.

He also informed me that he would not consider it profitable for him to purchase the commercial concentrated lime-sulphur if it were laid down at the station at the same price as the lime and sulphur ingredients would cost at the same point. This is because the labor of hauling the water and extra weight in the barrels of concentrated lime-sulphur would be greater and more expensive to him than to simply haul the ingredients and make up the solution in his present plant. It is also interesting to note that the formula followed in making up the concentrated solution is the one developed at the Pennsylvania Station.

Another interesting practice in this orchard is a scheme for securing mulching materials out of the prunings from the trees. These prunings, instead of being collected and hauled to a pile and burned, are hauled to the power plant at the spray house, and the smaller brush is run through a fodder cutter and the larger materials, even logs, are run through a machine known as a "mill hog," which grinds everything up into small pieces, and this apparently makes a very satisfactory and permanent mulching material. Mr. Burton showed me trees where this material had been in place around them for four years, with no evidence of any ill-effects to the trees, and it was gradually rotting down and making a very black, woods mold, which was holding the moisture very efficiently and also apparently rendering the soil especially loose and friable. The soil in this case was of limestone origin.

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The Palms
Softly and Tenderly

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Dinah
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Owl in the Old Oak Tree
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When the Corn is Waving

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Teddy Bears' Picnic
Whispering Flowers

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Finch's The Blue and the Gray
Lasca
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BANDS
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He also used some tin roofing to a very limited extent for mulching purposes, but this together with the ordinary mill waste seemed to favor the development of mice by affording them especially satisfactory living quarters. The materials ground up in the mill hog and fodder cutter, however, were of such texture as to discourage the mice, apparently. About 80 to 100 tons of brush and wood were ground up for this purpose last year, and the labor involved was said to be very little more than would have been required to simply collect the brush and burn it.

It is interesting also to note that the mulch system of handling the soil about apple trees has proved most efficient and satisfactory in their experience, and they are now using it over the entire acreage.

Their varieties have been selected primarily from the viewpoint of quality, and at present the older trees are practically all of the following varieties: Benoni, Grimes, Rome Beauty and Winesap. The Benoni is especially favored as being the best flavored red summer apple which has relatively good keeping qualities. The tree is also a very good bearer and is relatively upright in growth, so that it can be used as a filler, or can be used as a replant for any trees which happen to die in the older orchards.

Turley Burton also has developed a very efficient type of compressed air sprayer. It consists essentially of one 150-gallon tank for the spray material and four 50-gallon air tanks. The tank for the liquid is placed centrally and hung at an angle, so that the center of gravity is relatively low and the air can be admitted at the very bottom of the tank and thus pass up through the entire body of liquid to secure better agitation. The four air tanks are used so as to secure a better distribution of the load, as they are practically distributed around the central liquid tank. The accompanying pictures show their general appearance.

Uniformity and Neatness Win Prizes and Profits

These tank outfits, including trucks, cost about $225 apiece when they were set up and they have proved entirely satisfactory and efficient up to the present time. The agitation has been tested by station representatives and pronounced entirely satisfactory. The principle seems to be very good, and where one is equipped to secure the high initial compression of 250 pounds to the square inch, which is secured in this plant, this arrangement should be very satisfactory, as it has apparently overcome the matter of insufficient agitation, which has been the principal objection to this type of sprayer.

NORWAY SPRUCE FOR WIND BREAK

One of the best things I ever did was when I planted a Norway spruce hedge 17 years ago. The little evergreens were about eight inches high when I planted them and, as I remember, I paid $5 and the freight for 50. I planted them on the north side of my house and grounds to make an ornamental hedge and wind break. They were set three feet apart, so as to make a thick hedge while the trees are small. One of the good things about evergreens is that they are always ornamental, even when small. The soil, a deep, moist rich clay loam, seemed just right for the rapid growth of the trees. Doubtless their growth was greater because a strip of ground close to the trees was planted with flowers, and kept well cultivated and fertilized. The trees were thinned in the rows as they grow, and now in places they stand 30 feet high, and so thick that no winds can go thru them.

The value of this evergreen hedge at this time can scarcely be estimated, and for no money consideration would I have it removed. It protects the house from cold winds, and so tempers the climate for us. We think, and many people have told us, that the evergreen hedge is a fine setting for the house and grounds. They are between the house and public road and afford a sense of seclusion that is sometimes pleasing when one is close to a noisy street. We think the right way to grow evergreens is to never prune them, except possibly some branches at the base that may lieve is the most beautiful, has never been marred by the pruning shears. The hedge is always green, always in season, always beautiful. I am well satisfied with the Norway spruce as an ornamental hedge and wind break.

The hedge is at one side of a tennis court and playground, which in lie on the ground.

The natural form, which we besummer is a sort of community center in our neighborhood. The hedge furnishes shade on summer afternoons for those who play the games, or sit on the benches watching others.

At the same time I planted the Norway Spruce hedge, I planted some of the trees in groups on my grounds If I were doing this again, I would plant other spruces with them for variety. For one group, I used the cut-leaf weeping birch with the Norway spruce, and the effect is pleasing.

In front of the hedge, on the side toward the house, we have a border of hardy perennial shrubs and flowhedge is a row of white lilacs. which ers as follows: First, next to the harmonize well with the evergreens. Next to these are the hardy perennial flowers in the order of their height. They are Baltonias, Hardy Flox, Digitalis (Fox Glove), Larkspur, Antirshinums (Snapdragon) Aquilegia (Columbine or Honeysuckle), Pyrethrum (Persian Daisy) and Narcissus. I will say that we have a full view of the hedge and flowers from the living room of the house, and there is also a fine view from the main street for the passers-by.—J.

EARLY CABBAGE

Early cabbage is not only a profitable crop for the garden, but it is out of the way in plenty time to plant the ground to another crop. Market gardeners usually follow cabbage with celery.

The ground for early cabbage must be highly fertilized. Manure is much better than commercial fertilizer for the reason that cabbage demands a lot of moisture, and manure increases the water-holding capacity of the soil. Twenty tons of manure to the acre is none too much for ordinary garden soil, especially if the cabbage is to be followed by another crop.

For earliness, the Jersey Wakefield is the prime favorite, though Charleston Wakefield and Copenhagen Market are gaining in popularity. These two varieties are not quite as early as the Jersey Wakefield, but they make much larger heads.

Getting a good crop of cabbage is not possible unless one has good plants. The seed should be sowed thinly in the hot-bed. When the plants begin to crowd one another, it is advisable to transplant to cold-frames. The soil in the frames ought to be made very rich by the addition of well-rotted manure. Several days before planting in the open ground, the sash should be left off the frames in order to harden or accustom the plants to outdoor conditions. This hardening should be gradual. At first the sash should be raised but a trifle, and then more and more each day until it is perfectly safe to leave it off entirely. Plants properly hardened in the cold-frame can stand a light freeze without much injury.

We always space early cabbage fifteen inches apart in rows two and one-half feet apart. This admits of easy cultivation. Before transplanting, the soil in the frame is given a good soaking. The soil between the plants is then cut with an old knife. This results in the plants coming out with a cube of dirt adhering to the roots, and the plants suffer no setback when transplanted. Pulling the plants without cutting the soil results in many fibrous rootlets breaking off the main root, which checks the growth for a time.

When the plants have become reestablished, a light dressing of nitrate of soda should be applied along the rows. This supplies nitrogen in an available form and stimulates growth. Cultivation should begin immediately and continue as long as the cultivator can go through the rows.

Marketing should begin as soon as the heads become solid. Leaving early cabbage in the soil for a time after they have headed solidly, often results in the heads cracking or splitting open. This can be prevented by running a spade into the soil close to the plant, and partially lifting it out of the soil. When the roots are loose, the head should be pushed to one side. This breaks part of the roots and restricts the plant's supply of nourishment, so that development ceases. When so treated, heads will not crack and will remain fresh and crisp for several weeks. T. Z. Richey.

Order lime now. It is as effective applied in fall or winter as in spring; besides manufacturers may not be able to supply it at the time of the spring rush.

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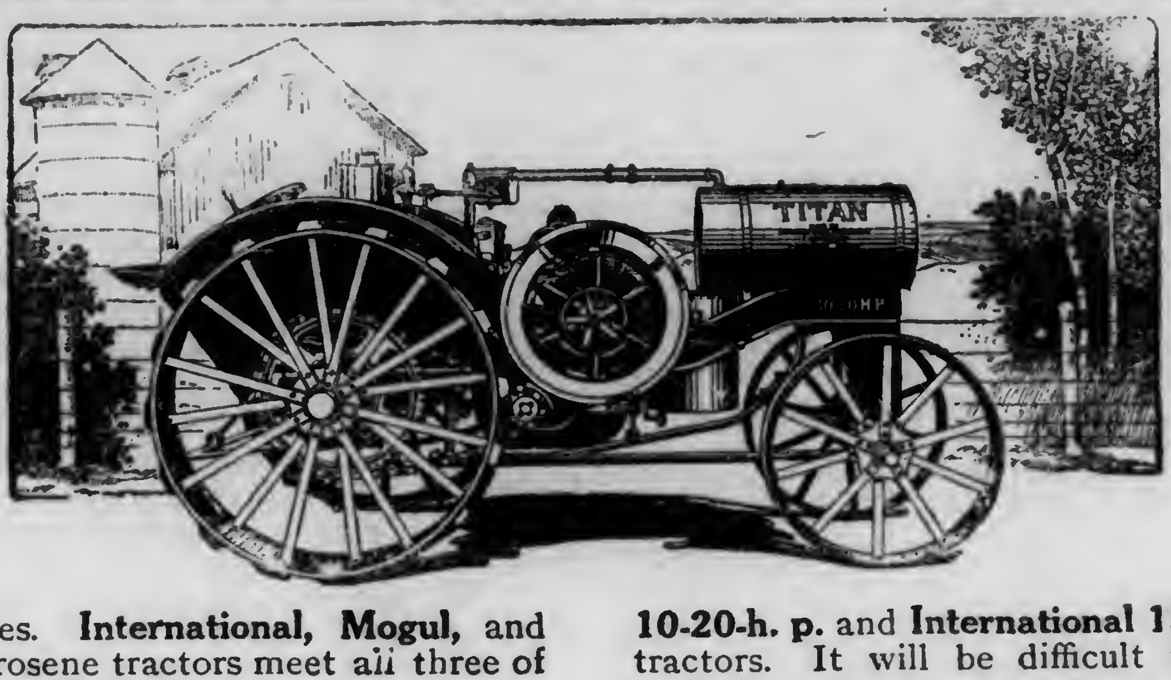
If you have not kept farm accounts before, now is a good time to look forward to beginning with the New Year.



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Your Feeding Problems

By Prof. Fred Rasmussen

Cottonseed Meal or Cottonseed Feed, Which?

The cotton crop of the South yields about two pounds of seed to every pound of lint, or approximately from 5,000,000 to 7,000,000 tons as a by-product. A ton of the cottonseed will yield approximately 841 pounds of hulls, 732 pounds of cake or meal and 280 pounds of crude oil. The cottonseed cake or meal is the residue of the cottonseed after the oil has been removed by means of hydraulic presses. These cakes, about two feet long, one inch thick and one foot wide, are either ground fine and sold as meal or broken into pieces the size of peas or nuts, or sold whole as cakes, in the latter form especially for export.

Cottonseed meal is classified as follows: (1) Choice cottonseed, at least 41 percent of crude protein. (2) Prime cottonseed, at least 38.6 percent of crude protein. (3) Good cottonseed meal, at least 36 percent of crude protein. (4) Cottonseed feed, a mixture of cottonseed meal and cottonseed hulls containing less that 36 percent of crude protein. As the proportion of hulls is increased, the percent of crude protein is decreased. It may vary from 20 to 36 percent. Cottonseed hulls have less digestible nutrient than oat straw and less feeding value than corn stover. Cottonseed hulls are also unpalatable. In the South, cottonseed hulls are used extensively for roughage. Hulls similar to those fed as roughage in the South make up a large share of cottonseed feed, and are often shipped in bags into the Eastern sections where there is an abundance of corn stover and oat straw.

Gamboges Vellum Majesty, Grand Champion Jersey Bull at 1917 Nat. Dairy Show, Owned By M. D. Munn, Minn.

The shipping of cottonseed feed containing a large portion of hulls into sections having plenty of roughage is a waste of transportation facilities; it is a waste of labor and the farmer who buys this feed is nearly always paying a great deal more for the actual nutrient purchased than when buying high grade cottonseed meal or other high protein feed.

Here is an actual illustration. An inquirer asked: "I can buy cottonseed meal at $3.10 per 100 pounds and cottonseed feed at $2.25 per 100 pounds. Which is the cheaper?" By appearance alone it is impossible to distinguish good cottonseed meal from finely ground cottonseed feed, and the only way to compare their relative value is on the basis of the crude protein content. When paying $2.25 for 100 pounds of 20 percent cottonseed feed, the cost per pound of crude protein is 11¼ cents, and when buying 100 pounds of 38-percent cottonseed meal at $3.10, the cost is only 7¾ cents per pound; a difference of 3.5 cents per pound. Or, in other words, the cottonseed feed should sell for $1.55 per hundred to furnish crude protein at the same cost as in the cottonseed meal at $3.10. It is not to be expected that the low grade produced can sell as cheap correspondingly as the high grade material, because the cost of handling and transportation is the same for 100 pounds of the low grade as for the high grade, and therefore increases the cost of these items per pound of crude protein.

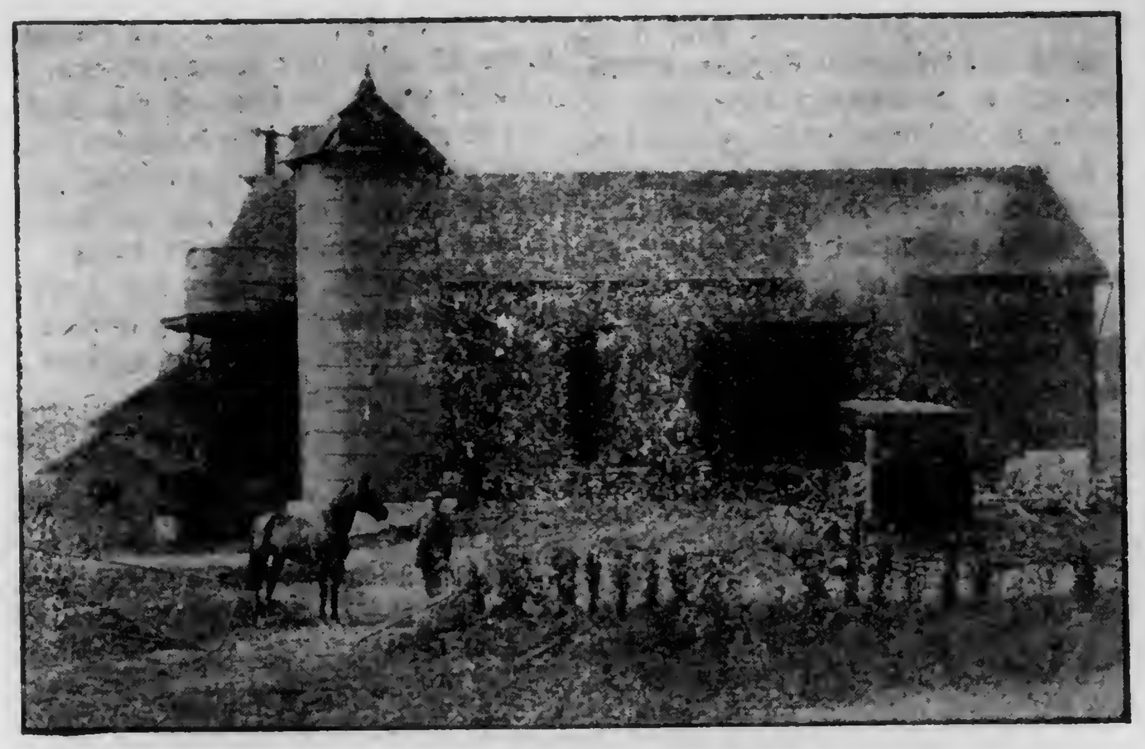
As it is not always possible to separate completely the hulls from certain kinds of seed from the kernel, there will be a small amount of cottonseed feed on the market, but it should be paid for in proportion to its value, based upon the protein it contains. Also, in these days of scarcity of labor and scarcity of transportation facilities it should be sold near the place of manufacture instead of being hauled out into remote country places in the eastern part of the United States. Remember to purchase cottonseed meal and cottonseed feed on the basis of its content as shown by the guarantee tag and not by the price per hundred. Invariably, the high grade cottonseed meal is the cheaper.

Dairy Ration

Kindly give me a balanced ration for my Holstein and Jerseys. I have clover, timothy, red top and June grass all mixed as hay. I have lots of ear corn which I expect to have ground for meal and also I have 500 pounds of cottonseed meal. I am feeding now with a commercial feed because I could not have my corn ground.—M. K., Andes, N. Y.

As no mention is made of silage it is assumed silage is not available. Of mixed hay, a cow when no other roughage is fed, will consume from 1.6 to 2 pounds per 100 pounds of live weight. Jersey cows would consume from 16 to 18 pounds daily and Holsteins from 24 to 26 pounds daily. If cows are fed hay three times daily or more often, they will consume in excess of this amount. If plenty of hay is available, under the present conditions it would be desirable to get them to consume as much as possible. The following would be suitable mixtures: (1) 150 pounds corn and cob; 100 pounds gluten and 100 pounds cottonseed meal. If gluten is not available, (2) 100 pounds corn and cob and 100 pounds cottonseed meal (not less than 38 percent curde protein).

To a Jersey cow feed one pound of this grain mixture for every four pounds of milk. To a Holstein, feed one pound of grain for every 4½ pounds of milk. This difference is made because it takes more feed to produce one pound of Jersey milk than one pound of Holstein milk, on account of the higher percent of solids contained in the Jersey milk.



Baling Hay On James M. Hutchinson Farm, Chester Co., Pa.

CO-OPERATIVE BULL ASSOCIATIONS

Co-operative bull associations are promising activities in livestock circles. They are formed by farmers for the joint ownership, use and exchange of high-class, pure-bred bulls. In addition, they may encourage careful selections of cows and calves, introduce better methods of feeding, help their members market dairy stock and dairy products, intelligently fight contagious diseases of cattle, and in other ways assist in lifting the dairy business to a higher level. Incidentally, the educational value of such an organization is great.

The history of the co-operative bull association shows that it is especially adapted to small herds where a valuable bull for each herd would constitute too large a percentage of the total investment. Thus the organization enables even the owners of small herds to unite in the purchase of one good bull and each to own a share in a registered sire of high quality. Altho still in its infancy, the co-operative bull association movement promises eventually to become a great factor in the improvement of our dairy cattle.

In the United States, the first co-operative bull association of which record exists was organized in 1908 by the Michigan Agricultural College. Eight years later there were 32 active bull associations in this country, with a total membership of 650, owning about 120 pure-bred bulls. The typical co-operative bull association is composed of 15 to 30 farmers, and jointly owns five bulls, divides its territory into five "breeding blocks," and assigns one bull to each block. As many as 50 to 60 cows may belong to the farmers in each block, and the bull in the block should be kept on a farm conveniently situated. The blocks are numbered from one to five, and to prevent inbreeding each bull is moved to the next block every two years.

A concrete example of the success of the movement is shown in the case of the Co-operative Holstein Bull Association at Roland, Iowa. The association is composed of 16 farmers and is organized into five blocks. The farms are so situated that the bulls are at no great distance from the farm of any member. Before the association was formed, each farmer had an average investment of $92 in a scrub bull. These bulls were disposed of and when the association was formed the five pure-bred bulls were bought at $240 each, or an average of $75 for each member. A larger membership would reduce expenses still further.

One hundred and fifty farmers in Maryland, Michigan, and Minnesota, when questioned regarding the value of co-operative bull associations, estimated that the use of sires belonging to the organization increased the value of the offspring in the first generation from 30 to 80 percent, with an average of 65 percent. The investment is small and the chance for herd improvement so great that the net returns greatly exceed the small original investment.

There appears to be no fundamental weakness in co-operative bull associations. Instead of spreading abortion, tuberculosis or other communicable disease, the results so far seem to indicate the reverse. For example, the Roland, Iowa, association will not allow any one of its members to get the benefits of the association until the herd has been tested for tuberculosis and all reactors eliminated. One farmer who did not dispose of the reactors after the tuberculin test was applied was refused the use of the bulls until he complied with the rules of the association. The educational work of each association makes the members alert to prevent the introduction and spread of diseases of any kind. The well-managed bull association requires that the cattle of each member shall be tested for tuberculosis and take every known precaution to prevent the introduction of infectious abortion.

In order to avoid mistakes in organization and operation, including selection of bulls, the farmers who propose organizing an association should communicate with the local county agent, the state agricultural

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KRAUSE
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HIGH PROTEIN
DAIRY FEED
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Used by itself or in combination with home grown products, it is a high-grade, big-yield dairy feed on which your herd will thrive and produce to its limit without danger. Safe—sure—profitable. Write at once for sample of KRAUSE DAIRY FEED and handy pocket record book **Free.** Give name of your dealer.

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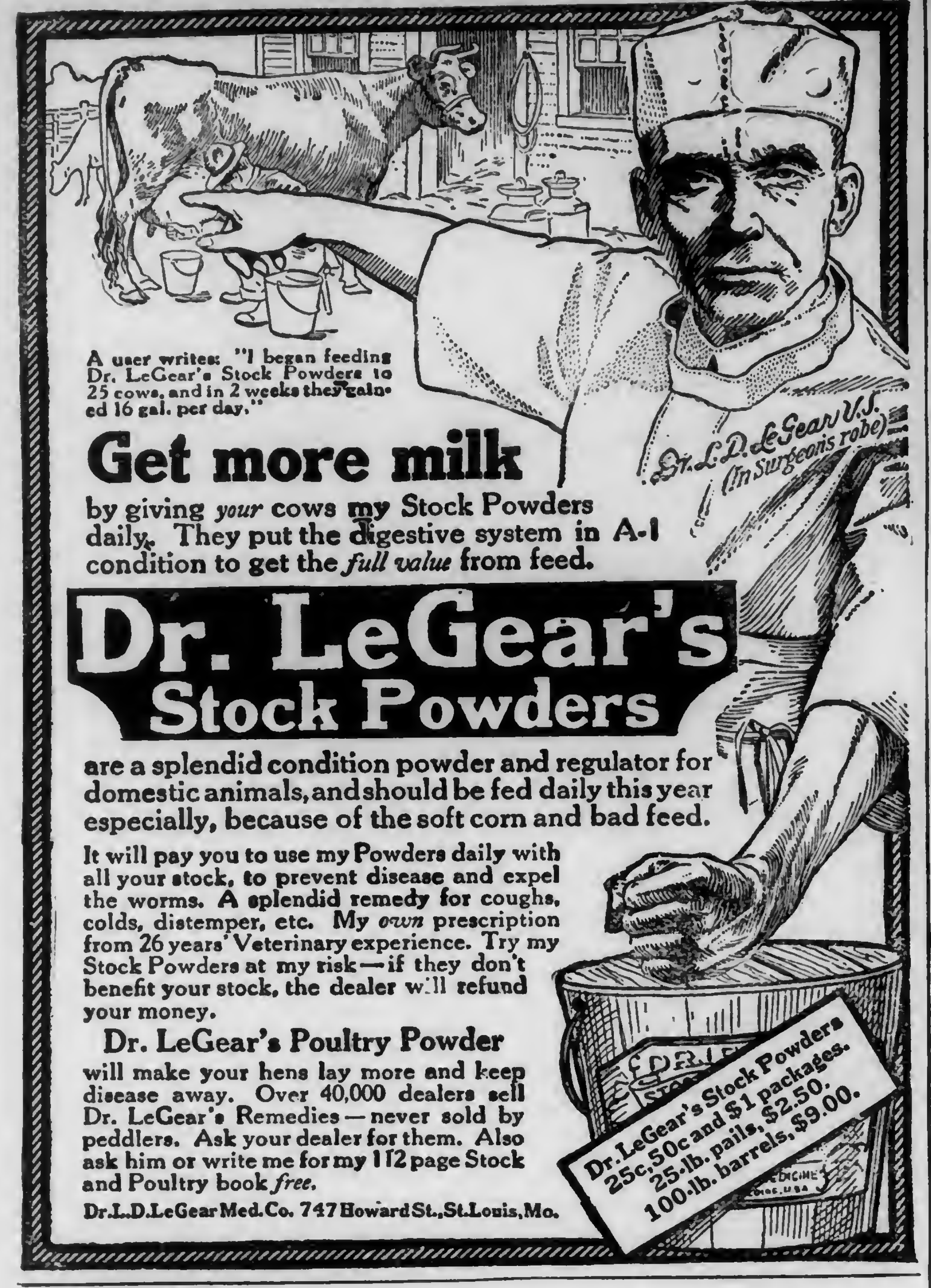
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Dr. LeGear's Stock Powders 25c, 50c and $1 packages. 25-lb. pails, $2.50. 100-lb. barrels, $9.00.

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are a splendid condition powder and regulator for domestic animals, and should be fed daily this year especially, because of the soft corn and bad feed.

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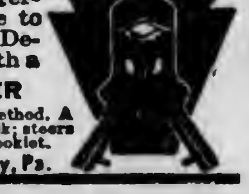

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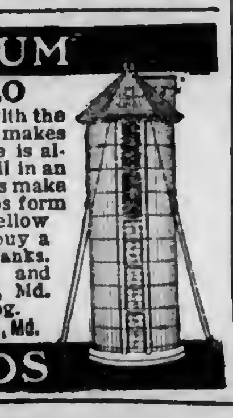

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More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.

Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Company, Dept. 98 Waukegan, Ill.

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college, or the Dairy Division of the U. S. Department of agriculture.

TEST ASSOCIATION BOOSTS DAIRYING

Allegheny County Records

The second year's work of the Montour Valley, Allegheny Co., Pa., Cow-testing Association closed in November 1917. Twenty-six herds completed the test for the year. The results shown by the records and butterfat tests and the high cost of feed sent 101 of the 525 cows tested to the butcher. To replace these cows many others have been bought. The interest in purebred cattle is now in full swing in this section.

Thru the co-operation of the Oakdale Bank, 13 members have secured 10 head of registered Holstein cattle for foundation stock for future herds. These cattle have official records of their production and were selected in Livingston County, Michigan, by a committee composed of Messrs. L. C. Hays, W. P. McJunkin, N. S. Grubbs and C. R. Hill. Nine of the members in the vicinity of Oakdale have organized a breeders' association known as the Oakdale Holstein Breeders' Association. They have secured a bull for community breeding whose dam's record of 33 pounds of butter and 556 pounds of milk in seven days is only excelled by one or two in Western Pennsylvania. The bull, Moonlight Cornucopia Sir Colantha, is a prize winner.

More recent pure-bred purchases include that of W. C. O'Reilly, Jr., of 11 head of Holstein cows. These cows all have high A. R. O. records and are in calf to a 33-pound sire. John P. Scott also purchased six pure-bred Holstein cattle in Washington County, Pa. The Guernseys, too, are receiving their share of attention, Mr. J. Hays Bell having purchased two young purebred heifers at Newark, Ohio. The dam of one heifer has the remarkable three-year-old record of 10,156 pounds of milk with almost 700 pounds of butter in one year.

The high quality of this foundation stock, the natural suitability of this section for dairying and the increasing enthusiasm for pure-bred cattle among the members of this association indicate that herds of unexcelled production will soon be developed here. The five herds producing the highest amount of milk this year are as follows:

Owner	No of Cows	Pounds Milk	Pounds Butter-fat
Glass Bros	24	8635	282.9
Donaldson & Wilson	23	7905	314.3
O. J. Neal	22	7762	284.7
J. P. Scott & Sons	35	7682	264.4
Smith & Smiley	.15	7630	254.0

The five highest in butterfat.

Owner	Cows	Pounds Fat	Pounds Milk
Donaldson & Wilson	23	314.3	7905
Isaac Wyke	15	307.6	6186
J. Hays Bell	11	298.0	5659
John W. Bell	17	291.4	6676
Glass Bros	24	282.9	8635

A remarkable record was made by a grade Holstein two-year-old heifer owned by John W. Bell. She has produced 9,474 pounds of milk and two calves in 11 months. A successful year this year will put her very near the highest producer of any age in the Association. Another two-year-old, a registered Holstein owned by L. J. Stewart & Sons, produced 7,921 pounds of milk in the year.

Forty-five cows have produced over 300 pounds of fat. Just one cow, a grade Holstein owned by John W. Bell produced over the 400 pounds mark; she gave 429.1 pounds of fat from 8,668 pounds of milk.

In the year ending October 1, 1916, the average selling price of milk for the association was $2.32 per cwt., or 20 cents per gallon. This year the average selling price for the year has been $2.90 per cwt., or 25 cents a gallon, less two cents a gallon freight to Pittsburgh. The selling price of milk has increased only 25 percent while for the last six months of the year feed costs have increased over 80 percent and the cost of labor has increased equally as much, and cannot be secured at any price. As the dairymen's families are putting in longer hours to do the work that was done with the help of one or more hired men, the price of milk should continue to remain in keeping with the cost of feeds.

The members of the association have reorganized for next year with 23 of the old members continuing to improve their herds.—C. R. Hill, Official Tester.

Owner	Pounds Milk	Pounds Fat	Feed Cost	Profit above feed cost
Donaldson & Wilson	11,782	340.9	$ 75.11	$236.25
Glass Bros.	10,709	317.5	88.07	203.88
Mrs. E. J. Bell	10,408	336.9	73.39	207.16
Donaldson & Wilson	10,379	309.4	68.70	187.21
O. J. Neal	10,363	328.9	73.05	190.96
Donaldson & Wilson	10,203	339.5	71.85	196.96
John P. Scott & Sons	10,166	318.5	102.31	191.48
Smith & Smiley	9,944	309.2	74.78	184.36
O. J. Neal	9,709	306.8	73.83	178.68
Smith & Smiley	9,529	304.3	70.88	177.00

IN THE NEW YORK MILK FIELD

Echoes From the January Price Announcement

According to the discussion of the Federal Milk Commission we are to have $3.47 for 3 percent milk in the up-state district for the New York market for the month of January. To this will be added four cents a point on higher tests. There has been, during December, a falling off of production, due to less grain being fed to milk cows and to some cows being dried off or sold that would have been producing some milk had the price warranted it. For that month we got about $3 for 3 percent test. The present price may tend to let a little more grain go to the cows, but the price will not be regarded as a money maker.

If the milk is forthcoming, that is apparently all the dealers, the consumers and the food control want, as none of those care whether or not the farmer makes any money. That is not their job. They want the milk and are bound, if they do not make a mistake in estimating, to make a price to get it. There they will stop. My idea is that they have made a shrewd guess, and that they will get what is really needed. What will be the effect on production next winter I am unable to say. That is a matter that they do not seem to consider, but it is one that needs constant attention, especially by the food administration, and I am afraid that they may be cutting rather too closely to the line. Dairy farmers are likely to produce less milk next winter, if I am a good guesser.

The food administration should take note of the tendency. There seems no likelihood of a close of the war in 1918. Milk will be needed next winter. The present winter seems likely to be taken care of in a fairly good manner, altho the production will be less than a profitable price might have made it. The fact that the dealers have been allowed to charge 17 and 18 cents a quart will tend to reduce consumption materially, and lower the vitality of the average city dweller thereby. Authorities do not seem to be looking far enough ahead. Possibly they think to increase production by enthusiasm, somewhat after the plan of the potato campaign of last spring.

So much is said about the decrease in cattle in the warring countries and the consequent demand for dairy products that there seems to be hope to increase supplies by that means. To some extent this will succeed, but I am not sure that it will become effective by another winter.

The government wants to keep food prices down as much as possible regardless of fairness to the farmers. This statement is not unpatriotic, for the man who calls attention to trouble ahead in time to avoid it is doing a patriotic duty. Get a nearer view of the necessary costs of distribution and it will help the nation, if additional steps are taken to keep costs at a fair point. Either the government (city, state or nation) should see to it that milk is placed at all available points in the city at 10 and 11 cents, or the farmers' organization will have to do it. The League is helping in that somewhat, I think, but evidently more ought to be done in some way.

Cost Hearings

Evidence presented at public hearings was of a strong character, showing real facts as they are found on farms. Dr. Warren, of Cornell, presented statistics which he has collected on a large number of dairy farms in actual operation, and as a result he made the cost of producing milk, figuring somewhat after the fashion of the business man, as $4.23 per hundred pounds for the entire year, under the present cost of feeds and labor.

In order to make the situation clear, I will give some of the items mentioned by one farmer in Otsego County while on the witness stand. His figures were for November only, and were for his herd of 20 cows as follows: Grain feed, $100.80; hay, $67.50; silage, $43.78; bedding $16; labor (240 hours), $48; horse labor, $12; use of building and equipment, $15; interest on cows, $2.66; depreciation, $33.34; bull, $4.16 miscellaneous, $5.66. This gave a total of $361.99. There was a credit on manure, calves and feed sacks of $61.08. As there was produced a little over 6,000 pounds of milk, the cost of producing same was $5.10 per hundred pounds. The price he received was $3.34. The average production of this herd for the year was 5,465 pounds per cow, or something over the average herd production. The witness further testified that his costs for production for the entire year were $3.10 per hundred; for the year 1916, $1.87 and for 1915, $1.3

—H. H. L.

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Get the Champion-Toledo Plug designed to serve your kind of motor (your dealer or garage man knows which one) and you have assured maximum efficiency and durability.

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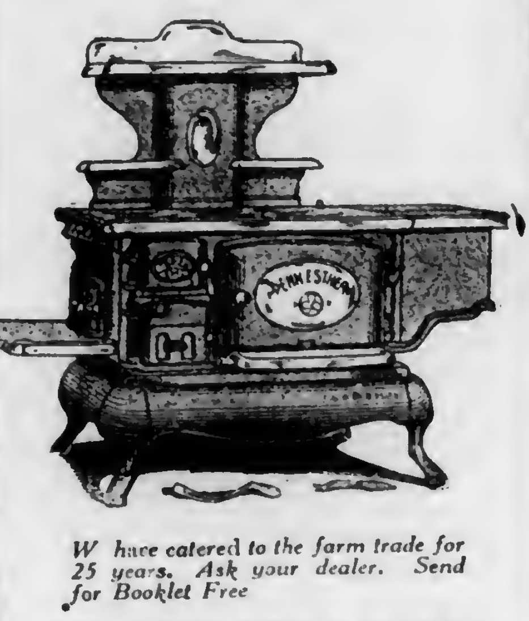
THE PENNESTHER

Range will meet all the requirements of the "Pennsylvania Farmer" satisfactorily.



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As a preventive of disease, the occasional use of Kow-Kure will pay big returns in increased vitality and improved milk yield. Used before and after calving, Kow-Kure will prevent Milk Fever and Retained Afterbirth, and enable the system to resist the other diseases which frequently start at this period.

If you have a cow that is not yielding as she should, something is wrong with her organs of production. Try Kow-Kure and note the prompt improvement in appearance and yield.

Sold by druggists and feed dealers; 55c and $1.10 packages. Send for free treatise, "The Home Cow Doctor."

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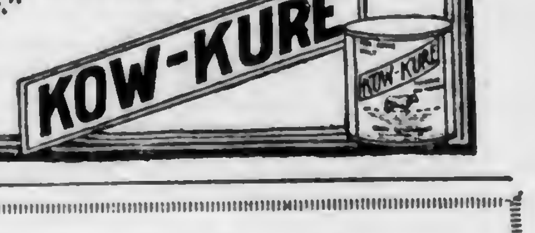

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Live Stock

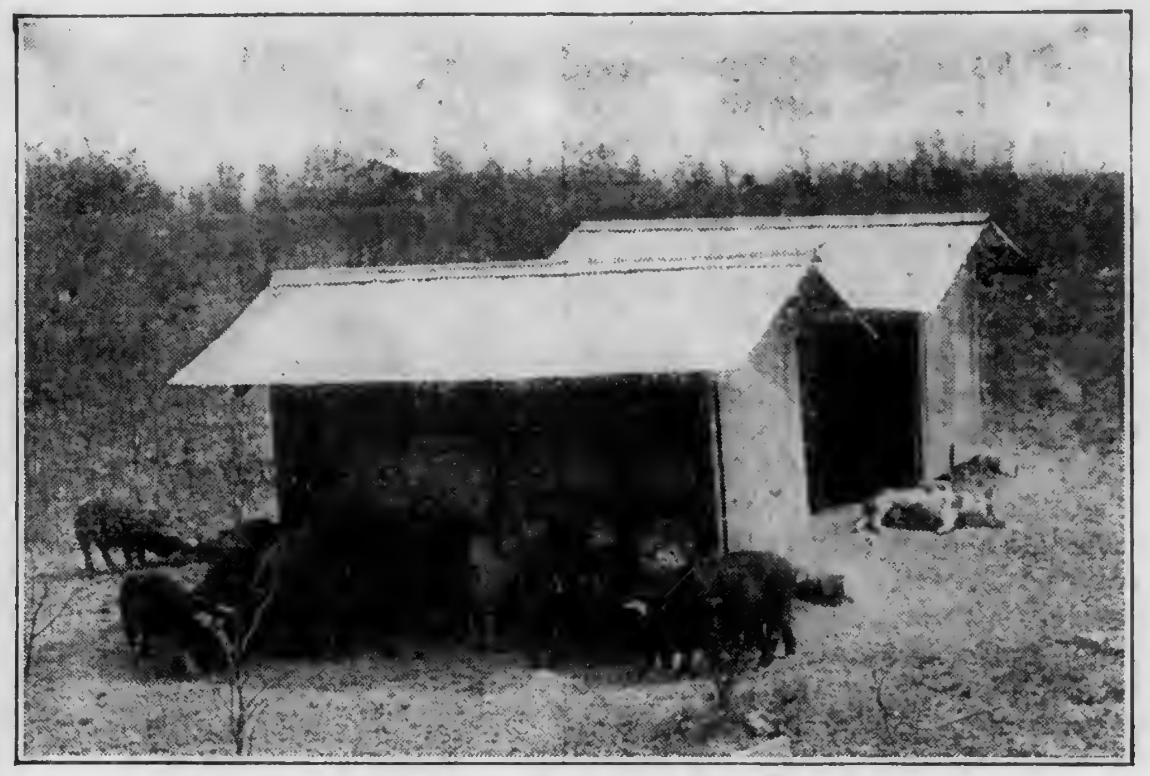
WILL IT PAY TO INCREASE LIVE STOCK?

Every farmer is wondering whether or not, under present conditions of abnormal feed prices and abnormal meat prices, he can afford to increase the live stock population of his farm. E. A. Trowbridge of the Missouri College of Agriculture has made a brief survey of the live stock situation. The following is a summary of this survey.

All the advantages of live stock production in normal times, such as maintenance of soil fertility, equalization of labor, employment of capital and the otherwise unmarketable feed, still exist. These advantages are enhanced by war time. There has been some decrease of live stock per capita in this country during the last five years. While cattle generally have increased at about the same rate as the human population during that period, sheep have actually decreased and hogs have increased only a small percent. The human population has increased eight to ten percent, cattle eight to ten percent, hogs only two to four percent and sheep have decreased seven to eight percent. During this fall an additional hog shortage is evident.

A further shortage of meat animals has been caused by an increase in exports. During 1916 the animal products exports from this country were nearly 100 percent higher than those during 1911. In cases of some specific items the increase in exports is even more than 100 percent. It is likely that exports will be heavy after the war, because for several years Europe will be unable to supply either the food or the animals for home consumption. During the war the United States must export as much meat as can be spared. A review of animal consumption of meat per person indicates, when the prices which obtained during last year were considered, that the supply is not equal to the demand at this time.

Professor Trowbridge offers further considerations of the live stock situation. Animal products constitute a food reserve. Unlike any other perishable products they may be kept over indefinitely or they may be preserved for use at a definite time. Domestic animals can convert into human food those products which otherwise are wasted. Well-directed, properly-managed live stock farming has been made and can be made profitable.



Cheap and Efficient Self Feeders For Hogs

The great factors to be considered in increasing live stock production are increase in numbers and increase in quality. This may be accomplished by: 1. The use of good sires. 2. The use of satisfactory breeding females, which give evidence of being regular breeders and which are increasing rather than depreciating in value. 3. The maintenance of breeding animals in good breeding condition, neither too fat nor too lean, and by the utilization of roughage and forage to the greatest possible extent. 4. By giving special attention to breeding animals at the breeding season and taking special care to see that every breeding female is safely pregnant, and that irregular breeders are eliminated. 5. By saving new-born animals by proper care and attention at parturition.

WINTER CARE OF BROOD SOWS

The sows that will farrow in March and up to the middle of April must be properly cared for if they are to produce good strong, vigorous litters and get these pigs thru successfully to weaning time. They must have exercise. The proper exercise for a brood sow is that which she will take voluntarily and not thru force. They should get their corn ration by hustling for it in the stalk fields and not by getting it fed around the sleeping quarters of feeding floors or in troughs. Feed them ear corn during the winter months and scatter it out in the stalk fields. The manure spreader is a good implement to use in scattering this corn. You can regulate the amount fed so that it will be picked up clean, and you will find next spring that there is not a bit of corn lying around to go to waste.

Protein feeds in the form of shorts, tankage, oil meal, or alfalfa hay should be supplied. Self feeders can be used for these feeds. Sows will eat a larger percentage of alfalfa hay feed in the ground form than when fed in racks unground.

WORMY HOGS NOT PROFITABLE

Hogs become infested with worms by picking up the eggs with the food or in the drinking water. Therefore to lessen the opportunities for the hogs to become infested they should be kept in clean, well-drained lots and should be supplied with fresh, clean drinking water and not allowed to drink from ponds or mud wallows. Fresh slacked lime sprinkled freely over the lots occasionally will help to destroy the worm eggs.

Hogs badly infested with worms should be given 4 grains calomel and 6 grains santonin for each 100-pound hog; or 2½ grains santonin, 1 drachm areca nut, 2 grains calomel, 2 drachms sodium bicarbonate for each 100-pound shoat. These remedies should be fed in a thin slop made of ship-stuff or bran.

The hogs should be dieted for at least 24 hours, then given the slop containing the proper amount of medicine. Make sure that there is plenty of trough room so all hogs can get to the trough without crowding, and so each hog will get his share of the slop. If necessary, repeat in ten days or two weeks.

A good remedy used at the Missouri Experiment Station for preventing worms is 3 pounds glaubers salts, 3 pounds common salt, 4 pounds charcoal, 1 pound sulphur, 3 pounds copperas and 3 pounds sodium bicarbonate. Mix and keep in a self-feeder or trough in a dry place where the hogs can have access to it at all times.

Hogs that are practically free from worms are much hardier than hogs that are badly infested with worms. Being hardier, they are more resistant to other diseases common to the hog. Hogs should be kept free from worms if they are to be most profitable.

SOY-BEAN HAY FOR PIGS

In these days of high-prices concentrated feeds, the farmer must cast about for substitutes for corn and other feeds. Farmers must try new combinations for the promotion of the live stock business. The introduction of the soy-bean into this country has helped remarkably to this end. I started growing soy-beans last season, and find them an excellent substitute for concentrated feeds and a saving in money as well. Up to this time I have used only the soy-bean hay, but I am so pleased with the results obtained from its feeding that I shall harvest seeds next season as well as continue raising hay.

I have used the bean hay particularly for cow and pig feed, and have been much impressed with its value for hogs and little pigs. The complaint since most of the milk goes to the condensery and city markets is that hog raising is out of the question. It is true that milk is a wonderful pig feed, but contrary to the opinion of some, I think with substitutes like soy-beans or soy-bean hay, we can do without milk.

Soy-bean hay in connection with ground corn and oats will make a good balanced feed for the pigs. The protein content of soy-bean hay is about 25 percent, the agricultural experts tell us, and therefore it is a good bone and tissue-building food. Corn will furnish the fat while the combination of all feeds will take care of the needs of the hog.

Soy-bean hay is relished by the pigs and they will eat not only the leaves but the stalks as well, providing, of course, that it has been properly cured in the field. The quality of the pork of a pig fed on soy-bean hay from the start is a great point to be considered. Not only have you a large, healthy and quick-growthy hog, but the flavor of the meat is much sweeter and the texture much finer than from hogs fed in the usual manner. I fed my hay in a bunch at noon and it is a good sight to see all the pigs in the pen gather around the hay, consuming every bit.

The feeding of this kind of hay will not only lower the production costs, but it will make larger and sweeter pork and will indirectly help out in these times of greater needs. Its use is surely a step in advance.—M. J. Ewing, Cecil Co., Md.

FLOCK OF SHEEP WILL PAY

A flock of sheep on every farm, if properly handled, would add to the profits from that farm in the great majority of cases. Prices for sheep and wool at the present time are at an unprecedented level, and continued high prices seem to be indicated.

There were in the United States on January 1, 1917, 48½ million sheep, and a human population running well over 100 million, as compared with 52½ million sheep and a human population of 90 million in 1910, and with 64 million sheep and a human population of around 75 million in 1903. These data make evident a material shortage in sheep, and while present prices are indicative of this shortage as well as an increased demand, an ordinary sized flock of sheep can be handled to excellent advantage on the average farm, and the profits therefrom are worth careful consideration at this time. This is one means of increasing the income from the average farm and at the same time increasing the fertility of the land.—E. A. Trowbridge in Missouri Circular.

OATS INCREASED COST OF HORSE KEEP

Recent investigations by the Missouri College of Agriculture show that a great variation in the cost of keeping farm work horses was caused by the liberal use of oats on some farms. This increased the cost materially. Of the 20 farms with the lowest feed cost per head, 30 percent fed oats with corn in equal, or even greater proportion, while of the 18 farms with the highest feed cost per head, 61 percent used the large proportion of oats. On farms using corn and no oats for grain in the work horse ration, an average cost of $68.79 a head was found as compared with a cost of $71.56 a head on farms where horses were fed oats and corn pound for pound.

SWINE BREEDERS AT TRENTON MEETING

The great value of the hog as a producer of meat will be emphasized at a meeting of the Swine Breeders during Agricultural Week which will be held at Trenton, N. J., January 23, 24, 25. A special meeting of swine breeders will be held on January 25 when addresses will be made by authorities in pork production including Professor W. H. Tomhave of the State College, Pennsylvania, Professor J. M. Hunter of the New Jersey Experiment Station, Dr. J. H. McNeil, of the Bureau of Animal Industry, and others. Methods of feeding, meat cutting, and the control of swine diseases will be fully explained.

On the same day the State Berkshire Breeders' Association, which is the only organized swine breeders' association in the state, will hold its annual meeting primarily for Berkshire breeders but open to the general public. The meeting promises to be of value to every swine feeder, and a help to new feeders.

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The Home Sewing—II

By M. JANE NEWCOMB,

Home Economy Department, Pennsylvania State College

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The first article of this series, published last week, explained how to take measures preliminary to adjusting patterns to individual needs. The article this week deals with:

Adjustment of Patterns

After adjustments have been carefully taken, the pattern should be tested and adjusted to meet individual differences. One difference, often met, is in width of back and width of chest. Some are broad-chested and narrow across the back, while others are just the reverse. For this reason a waist pattern should be carefully tested to make sure the width of chest and back are sufficient before any cutting is done.

Another common variation is in length of waist. If a pattern is too short in length of waist, make a cut across each section half way between the armhole and the waistline and spread the pattern the desired number of inches (Fig. 1). If too long, make a plait across the sections of the pattern in the same position (Fig. 2). In this way the lengthening and shortening can be done without interfering with the fullness at the waistline, or the direction of the under-arm seam. The sleeve pattern may be adjusted in the same way (Fig. 3).

If a skirt pattern needs to be made longer or shorter, it can be done in a similar way, on a line about seven inches below the hip line (Fig. 4). If the skirt pattern is the right size over the hips and not the right size at the waist, it can be easily adjusted. If too small at the waist the line extending from the hip line to waist line can be straightened a little on both sides of each section of the pattern, thus increasing the size at the waist. If too large, each seam can be take in above the hip line (Fig 5).

After the pattern has been tested and the necessary adjustments planned, cut a waist and skirt from lining cambric or muslin, marking notches and perforations to correspond with those on the paper pattern. Pin or baste together and fit carefully to the figure.

A knowledge of the proper location of seams is necessary to fitting. The shoulder seam of the waist should fall along the line extending from the side of the neck along the cord which extends to the highest part of the shoulder bone. Very square or sloping shoulders are hard to fit. Wrinkles often form across the chest (Fig. 6-a), or from neck to armpit as in Fig. 7-a. In case such wrinkles form, the pattern must be changed at neck and shoulders as in Fig. 6-b and Fig. 7-b.

The underarm seams should be directly under the shoulder seam at the armhole, and should fall stright down to the waist line. The side seam of the skirt should be placed a little back of the fullest part of the hip, and should come in line with the underarm seam of the waist.

After the cambric model has been carefully fitted and removed from the figure, run a tracing line along the line of pins where the fitting has been done, then take the lining apart and, with colored thread on the machine, stitch along the corrected lines, also down the center front and along the correct waist line.

Mark "right shoulder" and "left shoulder" on both front and back as in Fig. 8, because shoulders are very seldow alike. Danger of putting the waist together incorrectly will in this way be avoided.

The pattern is now correct, and if used carefully and all fitting lines marked exactly when the cutting of the final waist is done, no fitting of the garment should be necessary.

Note.—The third article in this series, discussing Use of Adjusted Waist Pattern for Underwear and Housedress, will appear in an early issue.—The Editor.

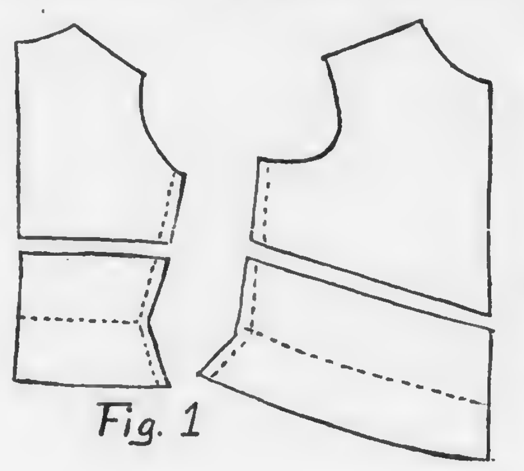
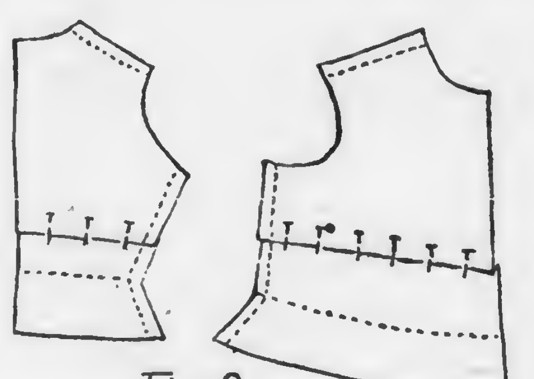


Fig. 1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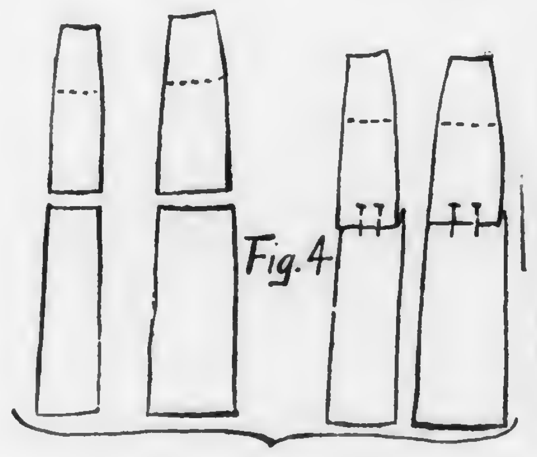
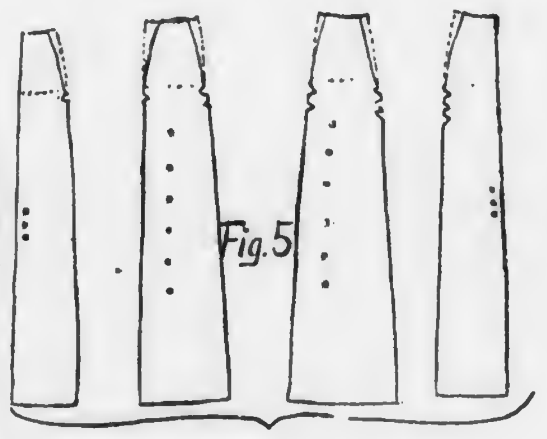
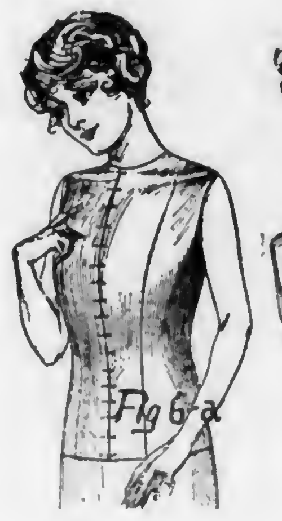
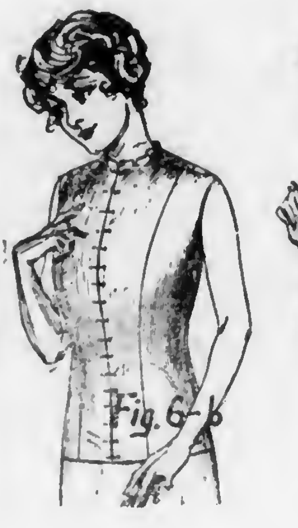
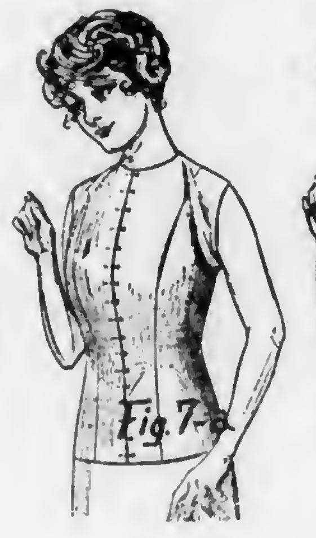
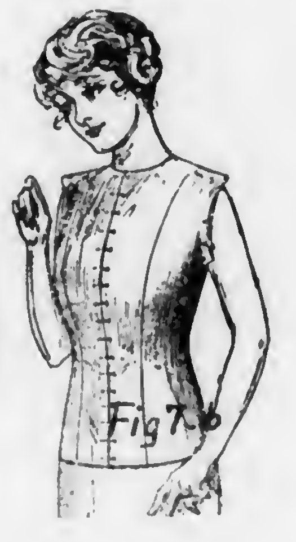












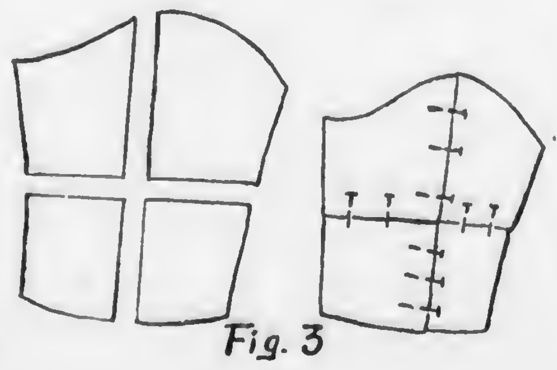


Fig. 3

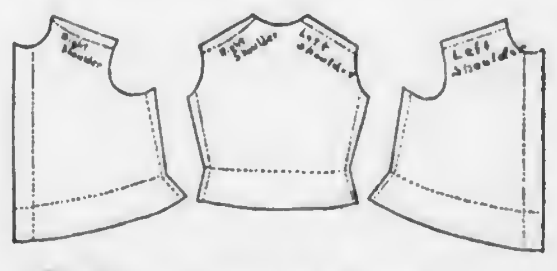


Fig 8—The Corrected Pattern

PENNA. HOME DEMONSTRATION WORK

The Home Economics Extension Service of the Pennsylvania State College gave about 1,200 lectures and demonstrations on canning during the past summer in the various counties of the state. The places selected for holding the meetings were, so far as possible, at points where a wide range of people might be reached. When the emergency arose, the program was necessarily enlarged to meet the need of the time.

At each meeting three subjects were presented: (1) Canning—including thoro discussion of the cold-pack method, emphasizing especially the canning of vegetables; discussion of the precautions to be observed with this method; actual demonstration of the method by canning several jars of vegetables and occasionally fruit. (2) Drying—presentation of the principles involved; fruits and vegetables that it is feasible to dry; types of apparatus that may be made and used; a small home-made dryer was shown to illustrate how any woman might make one. (3) A very brief discussion of the selection of food materials and the planning of meals; a set of printed charts aided in the presenting of this part of the lecture.

Meetings were held in every county of the state except one. The meetings for that county were to have been given the last week of the season. However, owing to the illness of one of the extension workers and to the fact that all of the other members of the force were scheduled for that week, that county could not be taken care of. In counties where there was no farm bureau and extension representative, arrangements were made thru the county chairman of the public safety committee. In all about 1,200 demonstrations were given and approximately 100,000 women reached.

In most instances, there was a local woman in charge of the arrangements for the meeting in her community. The local people provided a place of meeting, the stove, the vegetables to be canned and the jars. The extension worker carried with her the canning equipment, consisting of a small pressure cooker, kettles and other necessary articles. The purpose of having a pressure cooker was merely for ease and convenience in transportation, and to save time both for the women and for the demonstrator.

Corn, for instance, requires the longest time for sterilization of any vegetable. If the wash boiler or water bath is used the time required is three hours. A pressure cooker at 15 to 20 pounds reduces that time two hours and twenty minutes.

The winter program, owing to the emergency, has been planned along food and clothing lines.

Instead of having but one meeting in a place, as for the canning work, a series of lectures and demonstrations is being given, consisting of four meetings. Such subjects have been selected as are of special value at the present time. While the work has been planned to meet the needs of the women at this time of emergency, yet the fundamental principles presented and discussed are good not only in this emergency time but also in normal times.

Four subjects in food and three in clothing are included in the series. The order of giving these in the series is varied to meet the convenience of the extension worker and the local people.

Following is the outline of the program, with a brief explanation to show the character of the work:

I. Grains and Grain Products—lecture and demonstration.

A demonstration in the use of grain products and a discussion of the place and value in the dietary of the grains and grain products; in what way and to what extent grains and grain products other than wheat and wheat products may be used.

II. (a) Meats and Meat Substitutes.

A demonstration in meat substitutes, a discussion of the place and value of meat in the dietary; the foods that serve the same purpose as meat in the body nutrition and the way of using these.

(b) The selection and use of clothing materials illustrated with samples; a demonstration of the tests to aid the homemaker in choosing textile fabrics.

III. (a) Fats and Sugars.

A brief statement of the present problem regarding fats and sugars, with some suggestions as to ways of solving the same.

(b) Foundation Pattern—a demonstration of how to make a fitted lining that may be used in cutting undergarments, simple house dresses and shirtwaists.

IV. (a) Food Requirements and the Menu.

A brief and practical presentation of the fundamental principles that underlie the selection of food materials, and the planning of meals in order to supply the body with the right kind and amount of nutritive material.

(b) Care and Repair of Clothing—practical suggestions as to how the life of garments may be lengthened by the proper care.

Literature on the different subjects has been prepared for distribution.

Several series are arranged for in the various counties and it is hoped that a large number of women will be interested, and that the work will prove helpful.

For detailed information, persons interested should get in touch with their local farm bureau or write to the Agricultural Extension Service, State College, Pa.—Pearl MacDonald.

HOME-GROUND WHEAT BREAD

If clean wheat is available, says the United States Department of Agriculture, it may be ground at home in a coffee mill, and the following economical and nutritious bread made: Over a mixture of 1 tablespoon sugar and 1¼ teaspoons salt in a mixing bowl pour 1¼ cups hot water or skim milk. When the liquid has become lukewarm, add ½ cake dry yeast, softened in lukewarm water, or 1 gill liquid yeast and 1½ cups of home-ground wheat flour. Set over night to rise. In the morning add 1½ cups white flour, beat well, put into greased pan, let rise until the bulk is doubled, and bake.—U. S. D. A.

MILK-VEGETABLE SOUPS

To each 2 cups milk use 1 tablespoon butter, two-thirds cup thoroly cooked vegetable, finely chopped, mashed or put thru a sieve, and salt to taste. Thicken the milk with the flour as for milk gravy and add the other ingredients.

Practically any vegetable except tomatoes may be used with the other ingredients as stated. If tomatoes are used, a little soda should be added to them to prevent the milk from curdling.—U. S. D. A.

TOMATO AND ONION RELISH

We like nothing better for a dinner or a supper dish with potatoes, especially if we also have beans, than onions and tomatoes cooked together. The proportion of tomatoes should exceed the onions somewhat, the tomatoes should be at least partly ripe, and the onions are better if rather strong.—Mrs. E. M. Anderson, Chautauqua Co., N. Y.

KEEP THE CELLAR FROM FREEZING

One cellar is partitioned off with building paper and a blanket placed across the opening from the stairway. On very cold nights when the lamp must be kept burning, the heat is confined in a much smaller space. The vegetables and apples are thus kept from freezing. Its but little trouble to fix the cellar in this way and the paper partition will last two of three years.—J. E. Nye, Erie Co., Pa.

SWEET POTATO SUGGESTIONS

Here are a few simple suggestions for using sweet potatoes:

Sliced Sweet Potatoes With Meat—Boil potatoes, peel and slice. Place these around the roast fifteen minutes before removing the meat from the roaster. Baste the potatoes with the gravy several times. Place roast on platter and surround with potatoes and gravy.

Sweet Potato Trifles.—Take 4 boiled sweet potatoes, 1 cup of milk, 1 teaspoon sugar, ½ teaspoon cinnamon, juice of one lemon. Boil the potatoes and press through a ricer or colander. Mix thoroughly with the other ingredients. Form the mixture into diamond shapes on a baking sheet; and brown in a hot oven. Serve with chicken or turkey.—U. S. D. A.

A REMEDY FOR RATS

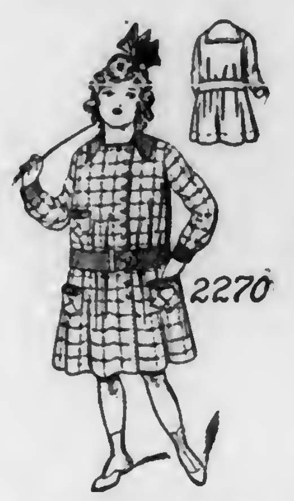
The trouble with rats, so prevalent at this season, may be overcome by mixing about five parts of plaster of Paris, three parts of corn meal and one part of sugar. This is much safer to use than poison and quite effective. The rats eat of the mixture and after drinking water it forms a hard, indigestible lump that soon puts the rat out of the way.

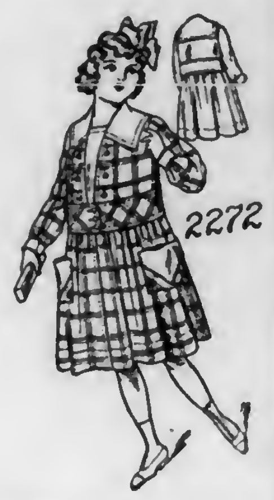
This treatment can be used with safety around hen houses and chicken coops. If the hens or chickens should get some of it, it will do no harm, since they can digest lumps. It is

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

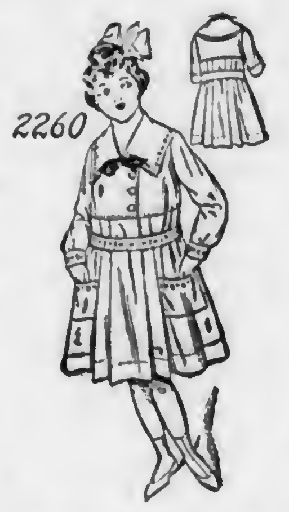
2270—Simple Dress for Girl.—make a good school dress in plaid or checked suiting, in serge, gingham, galatea, corduroy or linen. The waist closes over a shield in front. Smart pockets trim the skirt. The sleeve is in bishop style. Pattern is cut in four sizes: 8, 10, 12 and 14 years. Size 10 requires 4½ yards of 36-inch material. Price, 10 cents.

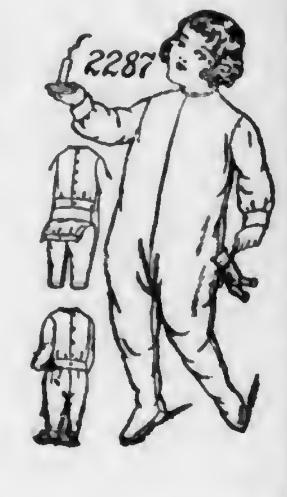




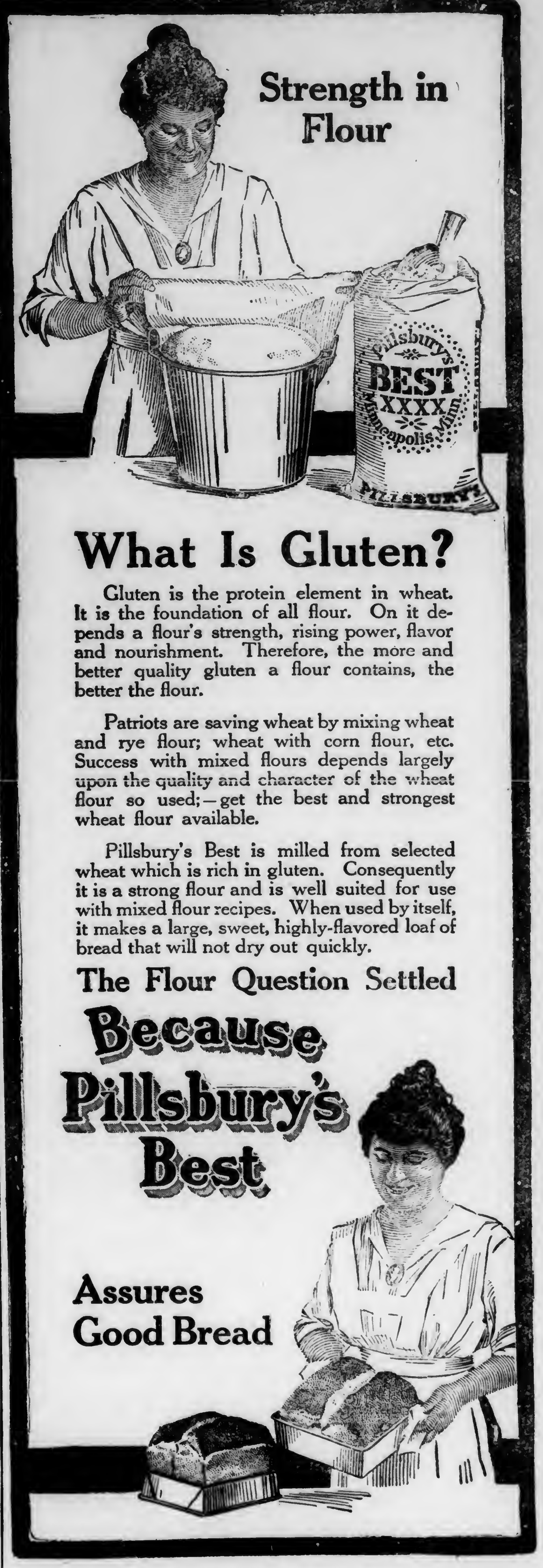
2227—Simple Dress for Girl.—This will also make a good school dress. The right front overlaps the left at the closing. The pockets may be omitted. Pattern is cut in four sizes: 4, 6, 8 and 10 years. Size 8 requires 3⅜ yards of 44-inch material. Price, 10 cents.

2260—Pretty Dress.—The sleeve may be in wrist or elbow length. The skirt is arranged to form a plaited panel in back and front. The pattern is cut in four sizes: 6, 8, 10 and 12 years. Size 8 requires 3⅜ yards of 36-inch material. Price, 10 cents.





2287—Child's Night Drawers.—Suitable for domet or canton flannel, flannelette, cambric, nainsook, or muslin. The garment will be most comfortable. If desired, the foot portions may be omitted. The pattern is cut in five sizes: 4, 6, 8, 10 and 12 years. It requires 3 yards of 36-inch material for a 6-year size. Price, 10 cents.


Strength in Flour

What Is Gluten?

Gluten is the protein element in wheat. It is the foundation of all flour. On it depends a flour's strength, rising power, flavor and nourishment. Therefore, the more and better quality gluten a flour contains, the better the flour.

Patriots are saving wheat by mixing wheat and rye flour; wheat with corn flour, etc. Success with mixed flours depends largely upon the quality and character of the wheat flour so used;—get the best and strongest wheat flour available.

Pillsbury's Best is milled from selected wheat which is rich in gluten. Consequently it is a strong flour and is well suited for use with mixed flour recipes. When used by itself, it makes a large, sweet, highly-flavored loaf of bread that will not dry out quickly.

The Flour Question Settled

Because Pillsbury's Best

Assures Good Bread

Farm Products Prices and Prospects

THE OUTLOOK FOR THE FUTURE

At the inception of 1918 the country is confronted with a meat shortage prospect. The feed bill has advanced out of proportion to enhancement of cattle, hog and sheep values. Beef making during the last half of 1917 was stimulated by several factors, the high summer cattle market being one; assurance by Washington statisticians of a bumper corn crop another; and an appeal by the Food Administration for more meat a third. But the promised corn crop failed to materialize, at least in mature form, and persistent agitation for curtailment of beef consumption demoralized the cattle market during November and December.

At the beginning of the year the fields of frozen corn area is full of steers that were laid in at prices prohibitive of profit and are pressing on the market. After that crop shall been cleaned up the trade will run into a period of scarcity, to be relieved only when grass becomes a factor. Cattle have not made satisfactory gains on frozen corn and when feed lots are emptied they are not refilled. Texas will have no grass beef; hay feeding west of the Missouri River will be of limited volume; and a high March to July market is certain. Western cattle were closely gathered last season and restocking grass in the trans-Missouri area promises to be a serious problem, aged steers having disappeared.

The Coming Hog Crop

A lofty hog market is assured. The 1917 pig crop was below normal and at current cost of feed there is no disposition to carry hogs into the fat-back stage. The new crop has been held back to utilize soft corn, but it is expected to move freely in January and February. High prices will hold back gilts for breeding purposes, but they will be cashed early in the summer, as soon as they can be fattened after weaning their pigs.

Porcine health is good, fortunately, otherwise the market would be on a famine basis. Army requirements for product will be on an enormous scale and the civilian population appears able to buy pork regardless of price while economizing on beef and mutton.

Sheep Outlook

Lower sheep and lamb prices are indicated in 1918, unless disaster overtakes the lamb crop, as was the case last year. There will be less disposition to speculate in unborn lambs and losses sustained by feeders will prevent repetition of the 1917 insanity in that branch of the trade. Every ewe in the country has been bred; flock owners are wintering their property at unprecedented expense in the matter of feed; and it will be logical to expect a large percentage of lambs.

GREAT DEMAND FOR VEGETABLE PLANTS

According to present indications, growers of vegetable plants will have opportunity to do a brisk business next spring if they have a sufficiently large supply of plants. Last year there was an unprecedented demand, and thousands of vegetable plants which were absolutely worthless were sold to the home gardeners and truckers. The unexpected demand caused large numbers of farmers to sow seed for the growing of plants when it was too late, and the plants were forced along in their growth so as to appeal to the eye of the inexperienced grower, to the detriment of their quality. The extension division of the New Jersey State Agricultural College advises plant growers to anticipate the large demand for plants next spring, which is certain to occur in connection with the home garden movement. Seed should be started early enough so that the strong, sturdy plants, the only kind that can produce well, will be available for setting out at the right time.

An Auto Truck Brings More Markets Within Reach

BINDER TWINE UNDER U. S. CONTROL

Under arrangements completed early in December, the U. S. Food Administration will control the binder twine industry of the United States, including the distribution of the entire sisal supply of Yucatan. Binder twine comes under the scope of food control, being necessary equipment for the production of food, especially wheat, which is now such an essential commodity.

Commercial activities, including shipbuilding, have greatly increased the demand for manila hemp, and higher hemp prices have been reflected thruout the entire fibre industry. While unable to assure American farmers low-priced binder twine in 1918, the Food Administration declares that profiteering will not be permitted. Under agreements which all of the binder twine companies in the United States have signed, prices will be based on cost of material, plus cost of manufacture plus only a reasonable profit. To administer binder twine control, the U. S. Food Administration has selected Henry Wolfer, who established the binder twine plant in the Minnesota State Prison, where he was warden for 22 years, and developed its output of twine to the third largest in the world.

WEEKLY MARKET REVIEW

Recovery In Box Apple Values

A steadier tone has prevailed in the jobbing price range of box apples. The presence of large quantities of frozen stock was still a disturbing feature so far as concerned the best grades; but New York has recovered from the sharp decline of last week, and other leading markets reached a more settled and stronger position. Romes extra fancy medium and large sizes ranged generally $2.15@3; and Spitzenburgs $2.25@3. The weakness of the local apple market has been shared by boxed fruit, which sold at $1.06@1.75 for all sizes, extra fancy stock, Romes, Spitzenburgs, etc. Demand for box apples was generally fair to good in leading markets. Barrel apples jobbing values displayed a firmer tone, altho the price range was wide in some markets. New York Baldwins "A" grade 2½" were slow with moderate demand $4.25@5.50, and fancy grade sold at $6@7 in the Cincinnati and Minneapolis markets.

Potatoes Exhibit Firm Price Trend

Selling movement has been very light in the producing sections, owing mainly to cold weather and to the scarcity of heated cars. Prices were generally very firm. At Presque Isle, Maine, there was practically no hauling or loading, but Green Mountains were quoted stronger at $1.97@2.03 per 100-pounds, in bulk. Maine. Green Mountains held firm in New York and Boston at $2.50@2.75, the range including bulk and sacked stock. New York Round Whites ruled about steady in large Eastern markets for $2@2.50 in bulk.

MARKETING A CITY PROBLEM

I have been interested in reading the articles on the investigation by Rex Tugwell, on the marketing of farm products. I live near the town of Berwick, Pa., which is within automobile delivery distance of Wilkes-Barre and Hazleton coal regions. I am also three miles from Berwick which is comprised of about 15,000 persons. After a very careful investigation on the marketing part of the farming game, I have been forced to conclude that the consumer is the man to be educated, and it seemed unfortunate that these articles of yours seemed to be only produced in your paper, which goes to farmers, and not to consumers. Could not city papers be induced to copy these articles?

My investigation showed me the following: The large mass of consumers buy by the quart, and a peck is a large order for them to give. The retailers, usually composed of houses of capital, deliver these small amounts to the consumer and give him credit. Now the most astonishing thing to me was that most of these people who get their pay every two weeks still buy from the retailer who gives them credit, as they don't seem to have any money to buy direct from the farmer. It certainly is a serious proposition to the farmer, and how is it to be helped?

Take, for instance, the present time. In Berwick, the large distributor there is offering 90 cents to $1 to farmers for potatoes. He is selling them to the consumer at $1.75 per bushel, but they are mostly sold at 45 to 50 cents per peck. For the farmer to meet these sales, even at a much less price, he would need to give these parties credit and in selling in such small amounts from house to house it would cost him more than the stuff is worth. If you could possibly arouse the consumers to their actual condition, and what price they are paying for the little credit they get, and induce them to arrange to buy in large volume, and pay their money so that the farmer would bring the goods to the doors, you would do a great work in helping the situation.

I have just learned that in Westfield, N. J., some of the citizens took the matter up themselves, and arranged a plan by which certain farmers could meet certain consumers. I understand that it worked very well. The point I want to make is that the consumer is the man at fault and will have to be educated to help the situation in the least. I do not hesitate to make the following statement: If the farmer could get a reasonable price for his stuff and feel morally certain of this he could then be encouraged to produce double the quantity of vegetables that are produced without increasing the acreage. But for him to sell potatoes at $1 a bushel and see them resold for $1.75 simply because he cannot meet conditions is so discouraging that he spends his time at something else and does not produce what the nation wants badly at this time.—C. R. Woodin, Columbia Co., Pa.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

NOT MORE, BUT BETTER LEADERSHIP

The Adams County Farm Bureau recently held its annual meeting and re-elected officers for the new year. The county agent reports, among other services, to have visited 264 farms in the county and has laid out plans for extensive service during the coming year. Before adjournment the meeting passed a resolution asking an appropriation of $1,009 from the county commissioners to defray expenses for the year. A short time before this meeting the tax notices of the county were distributed, showing an increase in tax rate on all farm property from four to five mills, for the announced purpose of paying a floating debt to the county of $35,000, the existence of which most tax payers were ignorant. The farmers as a rule are willing to be taxed to pay the increase, provided it is faithfully used for the purpose promised. But a large number of the best farmers object to the use of their money for the support of the farm advisor or agent. They say he is of no use to them, and those who want him should pay for him.

After the long and costly experience this state and nation has had in the use of farm talkers, advisers, institutes, and all of what a prominent writer has recently called "infernal information business" and its failure to make any impression on farm production, reasonable men should be ready to stop and think before going farther in this direction. Our early German fathers, in Eastern Pennsylvania, by the strain of their muscles and the sweat of their faces, worked out a system of crop rotation that has never been improved upon by modern teachers. It has been worth millions of money to those who came after them, and is today the basis of the best farming in the country. It is the "custom of their country" and Emerson says "help comes to the farmer thru the custom of the country and the law of 'impera parendo' (succeed by obeying)".

The mind that can gather wisdom from yielding to the inspiration of the lessons of the old is not the prevailing mind at the head of our agricultural affairs. What we need is not more, but higher, leadership. When German agriculture needed help it was found in the knowledge that Liebig and men like him gave to the subject. And her wheat crop rose to a yield of 33 bushels to the acre. In England the same help was found in the experiments of Lawes and Gilbert which were above anything that nation had known before. And the crop of England rose to 30 bushels per acre. In our country we have tried, and are still trying, to "help the farmer" by the increase of salaried teachers and their repetition of farm commonplaces. But it has brought no increase of production of our cereals per acre after 40 years of "singing the old song".

The most humiliating fact in our farm history is this, that the enormous expenditure of money and our kind of teaching has not produced a single man of outstanding ability in the application of science to soil production.

If I go to the Chief of the Bureau of Soils at Washington for advice in soil fertility, he says: "The soil is safe for untold ages to come." When I go to Mr. Hopkins, Chief of Agronomy, University of Illinois, he says: "Whitney's teachings are ridiculed abroad and rejected at home." Then when I come away, what do I know?

We need such ability as Liebig gave to Germany and we ought to begin to establish schools that produce such men. There is more of trifling around in agricultural education just now than characterizes any of our national follies. Not more, but higher, teaching is what the farmer needs; he has already listened too long to the silly out-givings of inexperience.—D. P. Forney, York Co., Pa.

IGNORANCE NOT BLISSFUL

Cost of Crop Production

Magazines of today read by city and urban people and by a few rural folk, semi-agricultural papers also (of which we have too many) read by urban people, are doing much harm to the vocation of the farmer. Whether ignorantly or intentionally they are harming agriculture at a time when the allied nations of the earth are beginning to cry "Agricultural Safety First," just when production should be at its maximum.

For instance, one of these semi-agricultural papers prepared by the pen of a much lauded contributor in estimating the cost of producing an acre of wheat tabulates the item of man and team at $3.50 per day, just about half what teams get in many localities at other work; and he does not even mention who is to feed the team or man. Again, he uses four cents per bushel as the price of threshing and makes no allowance for the teams or extra men or board of either. The fact is that no sane man will now, in the average barn with an average crop of our country, east or west, take care of all the items of threshing wheat at four cents per bushel. So much for the pseudo agricultural estimate.

On page seven, of Colliers Weekly, of December 29th, I read this misleading statement: "Two dollar wheat means an enormous profit for the man who grows it. The six-year average was 87 cents, and on that the farmer of the great wheat belt bought motors and phonographs and prospered generally."

Where is the patriotism of a journal like this that, in a critical time, such as now exists, distorts the facts to readers, more just, but as consumers unable to intelligently make these estimates for themselves? In the first case noted there is positively no excuse. The agricultural paper that publishes such imperfect, half-ripe crop cost estimates should lose from its subscription list every self-respecting farmer. Think of it, a crop estimate without interest on acre investment, team, machinery, wear and

(Continued on Page 29.)

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We cannot prepare any better advertisement for
GOMBAULT'S CAUSTIC BALSAM
than the following voluntary testimonial from a man who stands very high in all business and social circles where he is known:

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The Lawrence-Williams Co.,
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Truly yours, M. J. LAWRENCE.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., January 14, 1918.

A generally firm tone is prevailing in the potato market, with the supplies, which gradually accumulated during the recent cold spell, being gradually reduced day by day. There are now sixty-two cars of potatoes on track in the delivery yards, only a small percentage of which are strictly fancy potatoes, as most of them are showing more or less frost. While Pennsylvania potatoes are selling generally at $2.30@2.60 per cwt, some extra fancy well-graded and selected are finding a ready market at $2.75@3. New York state potatoes are selling from $2.20@2.50 per cwt. Nearby Jersey potatoes are showing little or no change, ranging from 75@90c per ⅝ bushel basket.

Fancy sweet potatoes continue in light supply, and the market rules firm and active. Fancy Jerseys in ⅝ baskets are selling from $1.35@1.50 per ⅝ basket, with No. 2s drawing from $1.10@1.15. Southern sweet potatoes are showing a very wide range in quality, while strictly fancy are selling readily at $2@2.10 per hamper. Some poor stock is finding hard and slow sales at $1@1.25.

Vegetables

The dried bean market is somewhat easier. Supplies are not heavy, but the demand is not quite so active. Marrows are selling at $15.75 per cwt, with pea and medium at $13.75 and red kidney at $14. There are but very few strictly fancy green beans arriving on the market, and prices are ruling extremely high. Fancy is selling promptly at $6@8 per hamper, while poor beans and those showing up badly frosted are very irregular in price, selling on down as low as $1, according to quality and condition. Nearby root stocks of all kinds, such as beets, carrots and parsnips and turnips, are all in very light supply, and high prices are prevailing in all lines. Beets are selling at $3@3.50 per barrel. Carrots are bringing from $3@3.50; parsnips from $3.50@4.25; white turnips from $2.75@3.50. Brussel sprouts are also extremely scarce, and the market is firm and much higher, ranging from 25@28c a quart.

The sharp advance in cabbage of last week, when fancy stock was selling around $70, drew more liberal supplies, and the market is now slightly easier, with prices ranging from $60@65 per ton. Altho some new cabbage is arriving from Florida, it is not a sufficient amount to have any effect on the market. The small amount that is arriving is selling from $2.35@2.50 per hamper. Cucumbers are a very scarce commodity, the hot house stock being practically the only cucumbers on the market, and even these are in very light supply and sell promptly at $1@1.50 per dozen. The celery market generally is weaker, caused by there being too much frozen celery on the market, which arrived during last week's cold spell. While strictly fancy New York state celery is selling at $3@4 per crate and California at $3.50@4.50, frozen celery is very irregular and hard to move at any price, some sales being made as low as $1 per crate. Fancy Pennsylvania celery is in moderate supply and meeting an active demand at 12@18c a bunch. Egg plants are generally very poor, and selling low, prices generally ranging from $2@4 per crate, but strictly fancy, if here would easily draw $5 or better. Horse radish remains about steady at $5@8.50 per barrel, according to size and quality. There has been no Norfolk kale or spinach on the market this week. Lettuce is showing practically no change from last week, with best stock selling at $1.75@2.25 per hamper, with poor and frozen at $1@1.25. Fancy hot house mushrooms are in light supply and the market is firm and a little higher. Prices range from $1.25@1.60 per 3-lb. basket.

While there is very little change to note in prices of onions, the supplies are very much lighter and the prospects are that strictly fancy onions will do better. Sales are now being made mostly at $2.75@2.90 per 100-lb. sack, with some poor stock as low as $2.50. There are but very few peas on the market, and strictly fancy stock when here is drawing high prices. California drums ranging from $8@10 and Florida Hampers from $5@7. Parsley is in good demand and the market is $1 per barrel higher than last week, now ranging from $7@8 per barrel. Good fancy peppers, after having been rather dull and weak for several days, are again in active demand and higher, and now bring from $3@6 per box, being from $1@1.50 per box higher than last week. Shallots are very plentiful and lower, averaging from $3@3.50 per barrel. Squash has been in extremely light supply, and when here has been bringing big prices, some rather ordinary selling at $4@4.50 per crate. Rutabagas are also in light supply and the market is ruling firm and higher, with best selling readily at $1.75@2 per cwt. Tomatoes continue in very light supply and the market rules firm and generally unchanged. Fancy hard ripe 144-size, when here, are selling up to $5 per crate, with fancy green stock from $3.50@4.50. Good choice hard ripe 180-size are selling up to $4, with choice green from $2.50@3.50, while the Gems or 216-size are selling anywhere from $2@2.50 per crate. Hot house tomatoes are also light supply and firm at 20@30c per lb. There is but very little watercress on the market, and good stock is wanted at $3@4.50 per 100 bunches.

Fruits

The offerings of strictly fancy apples are very light and the market on all fancy fruit free of frost is very active and somewhat higher. There are, however, quite a number of frozen apples on the market, which accumulated during the recent cold snap, and these continue to move very hard at low and irregular prices. While the range of values would seem to indicate no change in prices from last week, there are more apples drawing the higher prices, so that averages of sales would total higher. The range is about as follows: Baldwins, $3.50@5.50; Ben Davis, $3@4.25; Black Bens, $3@4.50; Black Twigs, $3.50@5.25; Ganos, $3@4.50; Greenings, $3.50@6.; Kings, $3.50@5.75; Hubbardsons, $3.50@5; Starks, $3.50@5; Spys, $3.50@5.50; Stayman Winesaps, $4@6.25; Twenty Ounce, $4@5; York Imperials, $3.50@5.25; York Stripes, $3.50@5.50; Rome Beauty, $5@6.50; Winesaps, $3.50@5.25; Russet, $4@5. There is quite a number of box apples being sold every day, and these are also firm and active when fancy and free of frost, with sales averaging about as follows: Rome Beauty, $1.50@2; Spitzenberg, $1.75@2.25; Jonathans, $1.50@2; Stayman Winesaps, $1.75@2.25; Delicious, $2@2.50; Ortley, $1.65@2.40; Black Twigs, $1.50@1.85; Pearmain, $1.75@2.15.

While there are still a few Kieffer pears being offered, the market generally is very slow and draggy and prices are lower, best stock now selling at $2.50 per barrel and poorer as low as $1. The season on cranberries is fast drawing to a close, and the market is very firm on the few remaining stocks. Barrels are selling at $16@16.50 for best, with poorer grades at $14@15, while crates are drawing $3.50@5. There are but very few strawberries arriving, but they are mostly poor, and the market is slow at 50@70c per quart for Florida berries; Californias, which are generally very poor, are ranging from 15@35c per pint.

Poultry

The market is ruling firm on fine, heavy dressed fowls, which are in light supply at 26@31c. Chickens are also firm and active, with the most desirable sizes selling at 28@30c and smaller at 25@27c, with the fancy nearby broilers inactive demand at 32@37c. Turkeys are rather slow at 30@34c, altho an occasional strictly fancy lot brings 35c. Ducks are in fair request at 25@30c and geese are selling at 22@25c.

The market is ruling firm on desirable live poultry of all descriptions, altho the demand is not quite so active. Fowls are selling from 26@29c, with large fat fowl wanted. Chickens are also selling at 26@29c, with old roosters at 20@21c. White Pekin ducks are in good demand at 28@30c, with other varieties at 26@28c. Turkeys are slow at 27@28c, and geese at 25@28c.

Eggs

Strictly fancy fresh, new-laid eggs continue very scarce, and the market continues to rule very firm, with supplies not sufficient for the demands. In many instances premiums are being obtained over quotations, which are as follows: Nearby firsts, 64@65c; current receipts, 62@63c; western fresh, 62@64c. Fancy carefully selected and candled eggs are jobbing out at 69@72c per dozen.

LANCASTER PRODUCE

Lancaster, Pa., January 14, 1918.

Butter and eggs, still very scarce here, held tightly to 60c on the market today. The demand was heavy and there was not sufficient of either commodity to meet it. Large quantities of storage eggs are being offered, but are meeting with slim demand. Poultry is also scarce, but there has been little change in any of the prices.

Butter and Eggs.—Creamery butter, 56@58c lb.; country butter, 60c lb.; fresh eggs, 60c dozen; storage eggs, 45c.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1@1.25; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Fruits.—Lima beans, 18c pint; squash, 4@5c each; cauliflower, 15@20c head; egg plant, 5@10c each; sweet potatoes, 30c ½ pk.; potatoes, $1@1.40 bu.; do, 12@20c ½ pk.; new parsnips, 15c ½ pk.; spinach, 20c ½ pk.; pears, 20@25c ½ pk.; apples, 20@30c ½ pk.

Grain Market.—Milling wheat, $2; damp wheat, $1.80; new ear corn, $1.40; rye, $1.65; oats, 65c; No. 1 timothy hay, $25; clover hay, $18; wheat straw, $12; oat straw, $10.

YORK PRODUCE MARKETS

York, Pa., January 14, 1918.

The attendance of farmers was fair at the several markets last week. However, the buying was in limited quantities. Demand seemed good, but produce moved slowly. The potato market is still in the dark. There seems to be positively no demand for tubers since November 1. A farmer said yesterday: "I could have gotten $1.50 in the fall, but I was alone and had 30 acres of corn to handle. Now I cannot get an offer." Apples are selling good in small quantities when of the best quality. A common apple will not bring $1 per bu. Eggs are slow since the holidays. Butter also moves slowly.

Eggs.—58@60c per dozen.

Butter.—Country, 50@54c lb.; separator, 52@55c lb.; milk, 10c qt.

Poultry.—Very light demand. All grades, 18c lb; dressed, 50c@$1 each.

Vegetables.—Potatoes, 12@20c ½ pk.; $1 per bu.; lettuce, 5@10c head; cabbage, 4@12c head; beets, 5c bunch; radishes, 6c bunch; onions, 10@15c box, 25@30c ½ pk.; lima beans, 35c qt.; soup beans, 15@18c pt.; celery, 5@10c a stalk; turnips, 20@25c ½ pk.; cornmeal, 10@12c qt.

Fruit.—Apples, 15@40c ½ pk.; $1@2.50 per bu.

Country Butchering.—Sausage, 30@34c lb.; smoked, 30@36c lb.; pudding, 24@30c lb.; ribs, 30@32c lb.; backbone, 28c lb.; steak, 34@38c lb.; sliced ham, 40@52c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2 per bu.; oats, 90c; rye, $1.65; bran, $2.30@2.50 cwt; middlings, $2.65@3 per cwt.

Wholesale Grain Market. — Wheat, $2.08; corn, $1.60; oats, 65c; rye, $1.40; bran, $44@48 per ton; middlings, $51@57 per ton.

NEW YORK PRODUCE

New York City, Jan. 14, 1918.

Fresh butter is one cent higher and supplies are short. Local trade in cheese is good, and egg market is strong. Dressed poultry firm. Potatoes higher. Light receipts of vegetables.

Butter.—Creamery, extras, (92 score), per pound, 52½c; higher score, 53@53½c; thirds to firsts, 42@52; state dairy, 40@43c; ladles, 36@38c.

Cheese.—Flats, specials, 25@25½c; do., colored, 24½c; prime, 23c.

Eggs.—Fresh gathered extras, 69@70c; extra firsts, 66c; nearby white, fine to fancy, 72@73c; ordinary to good, 65@72c; browns, 70@72c.

Dressed Poultry.—Philadelphia and Long Island broilers, fancy, 38@40c; old roosters, 22c; squabs, $2.75@7.25 per dozen. Spring ducks, per lb., 22@28c; turkeys, fresh killed, 32@33c; capons, 35@40c lb.

Vegetables and Greens.—Beets, bbl., $2.25@4. Onions, per 100-lb. bag, $1@3.50. Potatoes, Jersey, $2@3 per 100 lbs.; state and western, $2.25@3 per 100 lbs. Carrots, $2@4 bbl.

Apples.—McIntosh, $4@8; York Imperial, $4@5.50; Twenty Ounce, $4@5.50; King, $4@6; Baldwin, $3.50@6.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., January 14, 1918.

Beef Cattle.—The market ruled steady under moderate offerings and a fair demand. Difficulties in transportation were interfering very materially with receipts. Steers, best, $13.50; fair to good, $11@12.50; common, $10@11; bulls, $8@10; extra choice higher; cows, fat, per lb., 8@9.50c; extra choice higher; medium, per lb., 6.50@8c; ordinary, per lb., 5@6.50c; calves, exceptional lots, $17@17.50; good to choice, $15.50@16.50; medium, $12@13; common, $10@11; Tennessee and southern, $8@16.

Sheep and Lambs.—Sheep ruled steady under moderate offerings and a fair demand. Lambs also were steadily held. Sheep—Wethers, extra, $12.50@13; good to choice, $10.50@11.50; medium, $8@9; common, $6@7; ewes, heavy, fat, $10.50@11.50. Lambs—Choice, $18@18.50; do, medium, $16@16.50; inferior, $14@15.

Hogs.—Offerings were moderate, but ample, for the limited requirements of the trade. Prices showed no important change. Quotations for best western, $18.50@18.75.

City Dressed Stock. — Considerable stock was held up in transit by transportation difficulties and prices were steadily held under moderate offerings and a fair demand. Quotations: Steers, 15@21c; heifers, 14@18c; cows, 10@17c; calves, 23@24c; southern and barnyards, 17@19c; country dressed, 20@22c; sheep, 22c; do, extras, 23c; lambs, 26c; do, extras, 27c; hogs, 25c.

LANCASTER LIVE STOCK

Lancaster, Pa., Jan. 14, 1918.

Cattle.—Receipts, 1,230 head, against 750 head last Monday; market active, prices slightly higher.

Good to choice steers, $12@13.50; common to medium, $10@11; extra choice feeders, $9.10@10.50; common to medium feeders, $8.60@9.60; medium to good stockers, $8.40@9.50; common to medium stockers, $7.60@8.30; good to choice fat heifers, $10.30@11.40; good to choice young cows, $9.50@10.40; medium to good cows, $8.30@9.30; bolognas and fair flesh cows, $5.90@6.10; medium to good bologna bulls, $8.40@9.40; fat bulls, $9.90@10.90; good to choice stock bulls, $8.70@9.50; good to choice stock heifers, $8.20@9.10; common to medium, $7.60@8.10; good to choice oxen, $9.30@11; common to medium oxen, $7.10@8.40.

Hogs.—Receipts, 560 head; market active, prices a trifle higher.

Best grades, $18.25; roughs, $15.25@16.25.

NEW YORK LIVE STOCK

New York City, Jan. 18, 1918.

Beeves.—Receipts, 2,660; steady, $8@13.90; bulls, $6.50@10.50; cows, $4.50@9.25.

Calves.—Receipts, 465; firm; veals, $14.90@18; culls, $11@13; barnyard calves, $8@8.50; yearlings, $6@7.50; western, nominal.

Sheep and Lambs.—Receipts, 3,960; firm; sheep, $8@12; culls, $6@7.50; lambs, $18@19.50.

Hogs.—Receipts, 6,580; no trading.

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 14, 1918.

Cattle.—Receipts, 1,000; market strong. Prime steers, $13.50@14.50; shipping steers, $11.75@13.50; butchers, $10.75@12.75; yearlings, $11@13; heifers, $8.50@12; cows, $4.75@10.75; bulls, $6.50@10.75; stockers and feeders, $6.50@9.75; fresh cows and springers, $50@140.

Calves.—Receipts, 600; strong, $7@18.

Hogs.—Receipts, 5,600; strong; heavy, $18.10@18.15; mixed and yorkers, $18@18.10; Light yorkers, $17@17.50; pigs, $17; roughs, $16.50@16.75; stags, $14@15.50.

Sheep and Lambs.—Receipts, 2,000; $13@19.35; yearlings, $12@16.50; wethers, $13@13.25; ewes, $6@12.50; mixed sheep, $12.50@12.75.

PHILADELPHIA HAY AND STRAW

Philadelphia, January 14, 1918.

Baled Hay and Straw.—Receipts, 180 tons of hay and 4 cars of straw. Hay of fine quality ruled firm under light offerings and a fair demand, particularly for No. 1 stock. Straw was firmly held, but quiet. Quotations:

Timothy hay, according to location, No. 1 large bales, $28.50@29; do, small bales, $28.50@29; No. 2, $27@28; No. 3, $24@26; sample, $19@21; no grade, $15@17.

Clover Mixed Hay.—Light mixed, $27@28; No. 1 do, $25.50@26.50; No. 2 do, $22.50@23.50.

Straw.—No. 1 straight rye, $17.50@18; No. 2 do, $16.50@17; No. 1 tangled rye, $16@16.50; No. 2 do, $15@15.50; No. 1 wheat straw, $15.50; No. 2 do, $14@14.50; No. 1 oat straw, $15@15.50; No. 2 do, $14@14.50.

Bran.—Trade was slow and the market was nominally unchanged.

Soft winter bran, in 100-lb. sacks, per ton, nominal; spring bran, in 100-lb. sacks, per ton, $44.50@45.

Wheat.—No. 2 red, $2.25.

Corn.—Nominal.

Oats.—No. 2 white, 93@94c. No. 3, 92½@93c.

NEW YORK HAY AND GRAIN

New York City, January 14, 1918.

Feed.—The situation was unchanged on Saturday. Business was at a standstill and poor wire service was added to the difficulties of trading. Western mills are understood to still be in the market, offering bran for shipment, 30 days, at $40 per ton, and $43 in transit, as well as standard middlings at $45 per ton, but consumers are not interested at these figures. There was no inquiry for city feed. Stocks are understood to be fair, but various restrictions, particularly in regard to shipments, prevent active dealings.

All prices have been withdrawn.

Hay and Straw.—There is no further change in the hay market today. Exceedingly limited supplies at 33d street, most arrivals being spoken for before coming here, and receivers are enabled to name their own prices. In Brooklyn offerings are gradually cleaning up, though there is still a fair supply at Eastern District Terminal and at Bushwick Station, prices there not averaging up to 33d street. Rye straw is very scarce; the few sales reported are making at $20, but demand is light at these high prices.

Hay.—No. 1, large or small bales, $37@38; No. 2, $35@37; fancy, mixed clover, $35@36.

Straw.—No. 1, rye, $19@20.

Wheat.—No. 2, red, $2.25.

Corn.—No. 3, yellow, $1.87 per bushel.

Oats.—No. 2, white, 97½c; No. 3, 96½c.

PHILADELPHIA DAIRY MARKET

Philadelphia, January 14, 1918.

Butter.—There was not much wholesale trading, as usual on Saturday, but receipts were light and prices were firmly maintained on fine goods.

Western, fresh, solid-packed creamery, extra, 52c; higher-scoring goods, 53@54c; extra firsts, 49@50c; sweet creamery, extra, 53c; under grades, 50@52c; held creamery, good to choice, 46@48c; do, ordinary, 43@44c; nearby prints, fancy, 56c; do, average, extra, 53@55c; firsts, 48@50c; seconds, 45@47c; special brands jobbing at 55@59c.

Cheese.—The market ruled firm, but there was little trading.

New York, full cream, fancy, June, 25@25½c; specials higher; do, do, do, fresh made, best, 23@23¼c; do, do, do, fair to good, 22@22½c.

NEW YORK MILK MARKET

New York City, Jan. 14, 1918.

The higher retail price is causing a slight reduction in demand while supply increases. The Borden Company recently absorbed another smaller company. It is felt here that the greater cost of doing business will tend to eliminate the smaller dealers from the business.

The Federal Commission rate for January to the producer of Grade B in the first district is $3.52 a hundred for 3 percent milk; $3.75, or approximately 7.99 cents a quart for 3.6 percent; and $3.92 for 4 percent.

Receipts of milk and cream in 40-quart cans for week ending January 12 were as follows:

Railroad	Milk	Cream
Erie	37,954	1,764
Susquehanna	6,240	31
West Shore	9,360	810
Lackawanna	54,286	1,068
N. Y. Central (long haul)	95,010	1,247
Ontario	37,096	1,779
Lehigh Valley	40,774	531
New Haven	5,120	6
Penns-lvania	9,010	172
Other sources	5,702	152
Totals	300,552	7,560
Same week last year	328,863	9,006

TOBACCO MARKET

Despite the continuation of cold weather, blockaded roads and other impeding conditions, a few deliveries were made, in most instances consisting of but a part of crops. Developments at delivery points were entirely satisfactory to all parties. Growers were naturally well pleased with returns, it requiring but a small load to bring $2@$3. Deliveries will not be extensive until after the passing of the persistent cold weather. The few growers who have not sold are, of course, holding for maximum prices, and, on the other hand, buyers are attempting to decry values, as they always do after the majority of crop has been sold. Growers have been unable to handle the cured plants, owing to so little damp weather. Altho dry by freezing, there is still much sap in stems, which will result in superfluous moisture at the return of moderate weather. Much attention has turned to the growth of another crop, and the interest was never greater. It is encouraging that, according to present ruling, relatively few men are to be taken from the farm for the army.—H. E. Tweed, Jan. 14, 1918.

NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

SYNOPSIS OF PREVIOUS CHAPTERS

Henry de Spain is manager of the stage line running between the rich mines at Spanish Sinks and the little town of Sleepy Cat. In protecting the property of the stage line he is brought into frequent conflicts with the members of Morgan's Gang, with headquarters at Morgan's Gap. The gang regards de Spain as its enemy. De Spain complicates matters by falling in love with Nan Morgan, niece of the leader of the Gang. They became engaged and met as they could on the shale stretches between the Gap and the adjoining town. Their meetings were finally discovered, and old Duke Morgan, Nan's uncle, ordered her not to see de Spain again. Old Duke rode to town for the express purpose of "settling" with de Spain. But de Spain would not fight him. Nan is kept at home, and Gale Morgan presses his attention on her. He has just made an appeal for forgiveness of all past actions.

As Gale advanced, Nan retreated but drew out her hand concealing an object.

"You little vixen," he exclaimed with an oath, "what have you got there?" But he halted at her gesture, and Nan, panting, stood her ground.

"Keep away!" she cried.

"Where did you get that knife?" thundered Gale.

"From one who showed me how to use it on a coward!"

He affected amusement and tried to pass the incident off as a joke. But his dissimulation was more dangerous, she knew, than his brutality, and he left her the prey of more than one alarm and the renewed resolve never to be taken off her guard. That night he came back. He told her uncle, glancing admiringly at Nan as he recounted the story, how she had stood her ground against him in the morning.

Nor did Nan like the way her uncle acted while he listened—and afterward. He talked a good deal about Gale and the way she was treating her cousin. When Nan declared she would never have anything to do with him, her uncle told her with disconcerting bluntness to get all that out of her head, for she was going to marry him. When she protested she never would, Duke told her, with many harsh oaths, that she should never marry de Spain even if he had to kill him or get killed to stop it, and that if she had any sense she would get ready to marry her cousin peaceably, adding, that if she didn't have sense, he would see to it himself that it was provided for her.

His threats left Nan aghast. For two days she thought them all over. Then she dressed to go to town. On her way to the barn her uncle intercepted her. "Where are you going?"

"To Sleepy Cat," returned Nan, regarding him collectedly.

"No, you're not," he announced bluntly.

Nan looked at him in silence. "I don't want you running to town any more to meet de Spain," added Duke, without any attempt to soften his injunction.

"But I've got to go to town once in a while, whether I meet Henry de Spain or not, Uncle Duke."

"What do you have to go for?"

"Why, for mail, supplies—everything."

"Pardaloe can attend to all that."

Nan shook her head. "Whether he can or not, I'm not going to be cut off from going to Sleepy Cat, Uncle Duke—nor from seeing Henry de Spain."

"Meaning to say you won't obey, eh?"

"When I'm going to marry a man it isn't right to forbid me seeing him."

"You're not going to marry him; you're going to marry Gale, and the quicker you make up your mind to it the better."

"You might better tell me I am going to marry Bull Page—I would marry him first. I will never marry Gale Morgan in the living world, and I've told you so more than once."

He regarded his niece a moment wrathfully and, without replying, walked back to the house. Nan, upset but resolute, went on to the barn and asked Pardaloe to saddle her pony. Pardaloe shuffled around in an obliging way, but at the end of some evasion admitted he had orders not to do it. Nan flamed at the information. She disliked Pardaloe anyway, not for any reason she could assign beyond the fact that he had once been a chum of Gale's. But she was too high-spirited to dispute with him, and returned to the house pink with indignation. Going straight to her uncle, she protested against such tyranny. Duke was insensible alike to her pleas and her threats.

But next morning Nan was up at three o'clock. She made her way into the barn before a soul was stirring, and at daybreak was well on her way to Sleepy Cat. She telephoned to de Spain's office from the hospital and went to breakfast. De Spain joined her before she had finished, and when they left the dining-room she explained why she had disappointed him the day before. He heard the story with misgivings.

"I'll tell you how it looks to me, Nan," he said when she had done. "You are like a person that's being bound tighter every day by invisible cords. You don't see them because you are fearless. You are too fearless, Nan," he added, with apprehension reflected in the expression of his face. "I'll tell you what I wish you'd do, and I say it knowing you won't do it," he concluded.

She made light of his fears, twisting his right hand till it was helpless in her two hands and laughing at him. "How do you know I won't do it?"

"Because I've asked you before. This is it: Marry me, now, here, today, and don't take any more chances out there."

"But, Henry," protested Nan, "I can't marry you now and just run away from poor Uncle Duke. If you will just be patient, I'll bring him around to our side."

"Never, Nan."

"Don't be so sure. I know him better than you do, and when he comes for anybody, he comes all at once. Why, it's funny, Henry. Now that I'm picking up courage, you're losing it!"

He shook his head. "I don't like the way things are going."

"Dearie," she urged, "should I be any safer at home if I were your wife than I am as your sweetheart? I don't want to start a horrible family war by running away, and that is just what I certainly should do."

De Spain was unconvinced. But apprehension is short-lived in young hearts. The sun shone, the sky spread a speckless blue over desert and mountain, the day was for them together. They did not promise all of it to themselves at once—they filched its sweetness bit by bit, moment by moment and hour by hour, declaring to each other they must part, and dulling the pain of parting with the anodyne of procrastination. Thus, the whole day went to their castles and dreams. In a retired corner of the cool dining-room at the Mountain House, they lingered together over a long-drawn-out dinner. The better-informed guests by asides indicated their presence to others. They described them as the hardy couple who had first met in a stiff Frontier Day rifle match, which the girl had won. Her defeated rival—the man now most regarded and feared in the mountain country—was the man with the reticent mouth, mild eyes, curious birthmark and with the two little, perplexed wrinkles visible most of the time just between his dark eyebrows, the man listening intently to every syllable that fell from the lips of the trimly bloused, active girl opposite him, leaning forward in her eagerness to tell him things. Her jacket hung over the back of her chair, and she herself was referred to by the more fanciful as queen of the outlaw camp at Music Mountain.

They two were seen together that day about town by many, for the story of their courtship was still veiled in mystery and afforded ground for the widest speculation, while that of their difficulties, and such particulars as de Spain's fruitless efforts to conciliate Duke Morgan and Duke's open threats against de Spain's life were widely known. All these details made the movement and the fate of the young couple the object of keenly curious comment.

In the late afternoon the two rode almost the whole length of Main Street together on their way to the river bridge. Every one knew the horseflesh they bestrode—none cleaner-limbed, hardier or faster in the high country. Those that watched them amble slowly past, laughing and talking, intent only on each other, erect, poised and motionless, as if moulded to their saddles, often spoke of having seen Nan and her lover that day. It was a long time before they were seen riding down Main Street together again.

CHAPTER XXIII

De Spain Worries

They parted that evening under the shadow of Music Mountain. Nan believed she could at least win her Uncle Duke over from any effort of Gale's to coerce her. Her influence over her uncle had never yet failed, and she was firm in the conviction she could gain him to her side, since he had everything to win and nothing to lose by siding against Gale, whom he disliked and distrusted, anyway.

For de Spain there was manifestly nothing to do but doubtfully to let Nan try out her influence. They agreed to meet in Calabasas just as soon as Nan could get away. She hoped, she told him, to bring good news. De Spain arranged his business to wait at Calabasas for her, and was there, after two days, doing little but waiting and listening to McAlpin's stories about the fire and surmises as to strange men that lurked in and about the place. But de Spain, knowing Jeffries was making an independent investigations into the affair, gave no heed to McAlpin's suspicions.

To get away from the barn boss, de Spain took refuge in riding. The season was drawing on toward winter, and rain clouds drifting at intervals down from the mountains made the saddle a less dependable escape from the monotony of Calabasis. Several days passed with no sight of Nan and no word from her. De Spain, as the hours and days went by, scanned the horizon with increasing solicitude. When he woke on the sixth morning, he was resolved to send a scout into the Gap to learn what he could of the situation. The long silence, de Spain knew, portended nothing good. And the vexing feature of his predicament was that he had at hand no trustworthy spy to dispatch for information; to secure one would be a matter of delay. He was schooled, however, to making use of such material as he had at hand, and when he had made up his mind, he sent to the stable for Bull Page.

The shambling barn man, summoned gruffly by McAlpin, hesitated as he appeared at the office door and seemed to regard the situation with suspicion. He looked at de Spain tentatively, as if ready either for the discharge with which he was daily threatened or for a renewal of his earlier, friendly relations with the man who had been queer enough to make a place for him. De Spain set Bull down before him in the stuffy little office.

"Bull," he began with apparent frankness, "I want to know how you like your job."

Wiping his mouth guardedly with his hand to play for time and as an introduction to a carefully worded reply, Bull parried. "Mr. de Spain, I want to ask you just one fair question."

"Go ahead, Bull."

Bull plunged promptly into the suspicion uppermost in his mind. "Has that slat-eyed, flat-headed, sun-sapped sneak of a Scotchman been complaining of my work? *That*, Mr. de Spain," emphasized Bull, leaning forward, "is what I want to know first—is it a fair question?"

"Bull," returned de Spain with corresponding and ceremonial emphasis, "it is a fair question between man and man. I admit it; it *is* a fair question. And I answer, no, Bull. McAlpin has had nothing on the face of the desert to do with my sending for you. And I add this because I know you want to hear it—he says he couldn't complain of your work, because you never do any."

"That man," persisted Bull, reinforced by the hearty tone and not clearly catching the drift of the very last words, "drinks more liquor than I do."

"He must be some tank, Bull."

"And I don't hide it, Mr. de Spain."

"You'd have to crawl under Music Mountain to do that. What I want to know is, do you like your job?"

On this point it was impossible to get an expression from Bull. He felt convinced that de Spain was pressing for an answer only as a preliminary to his discharge. "No matter," interposed the latter, cutting Bull's ramblings short, "drop it, Bull. I want you to do something for me, and I'll pay for it."

Bull, with a palsied smile and a deep, quavering note of gratitude, put up his shaky hand. "Say what. That's all. I've been paid."

"You know you're a sot, Bull."

Bull nodded. "I know it."

"A disgrace to the Maker whose image you were made in."

Bull started, but seemed, on reflection, to consider this a point on which he need not commit himself.

"Bull, I believe there's a man in you yet. Something, at any rate, you couldn't completely kill with whiskey, Bull—what?"

Bull lifted his weak and watery eyes. His whiskey-seamed face brightened into the ghost of a smile. "What I'm going to ask you to do," continued de Spain, "is a man's job. You can get into the Gap without trouble. You are the only man I can put my hand on just now that can. I want you to ride over this morning and hang out around Duke Morgan's place till you can get a chance to see Miss Nan—"

At the mention of her name Bull shook his head a moment in affirmative approval. "She's a queen!" he exclaimed with admiring but pungent expletives. "A queen!"

"I think so, Bull. But she is in troublesome circumstances. You know Nan and I—"

Bull winked in many ways.

"And her Uncle Duke is making us trouble, Bull. I want you to find her, speak with her, and bring word to me as to what the situation is. That doesn't mean you're to get drunk over there—in fact, I don't think anybody over there would give you a drink—"

"Don't believe they would."

"And you are to ride back here with what you can find out just as quick, after you get into the clear, as a horse will bring you."

Bull passed his hand over his mouth with a show of resolution. It indicated that he was pulling himself together. Within half an hour he was on his way to the Gap.

For de Spain hours never dragged as did the hours between his starting and the setting of the sun that night without his return. And the sun set behind Music Mountain in a drift of heavy clouds that brought rain. All evening it fell steadily. At eleven o'clock de Spain had given up hope of seeing his emissary before morning and was sitting alone before the stove in the office when he heard the sound of hoofs. In another moment Bull Page stood at the door.

He was a sorry sight. Soaked to the skin by the steady downpour; rain dripping intermittently from his frayed hat, his ragged beard and tattered coat; shaking with the cold as if gripped by an ague, Bull, picking his staggering steps to the fire and sinking in a heap into a chair, symbolized the uttermost tribute of manhood to the ravages of whiskey. He was not drunk. He had not even been drinking; but his vitality was gone. He tried to speak. It was impossible. His tongue would not frame words, nor his throat utter them. He could only look helplessly at de Spain as de Spain hastily made him stand up on his shaking knees, threw a big blanket around him, sat him down, kicked open the stove drafts and called to McAlpin for more whiskey to steady the wreck of it crouching over the fire.

McAlpin after considerable and reluctant search produced a bottle, and unwilling, for more reasons than one, to trust it to Bull's uncertain possession, brought a dipper. Bull held the dipper while de Spain poured. McAlpin, behind the stove, hopped first on one foot and then on the other as de Spain recklessly continued to pour. When the liquor half filled the cup, McAlpin put out unmistakable distress signals, but Bull, watching the brown stream, his eyes galvanized at the sight, held fast to the handle and made no sign to stop. "Bull!" thundered the barn boss with an emphatic word. "That is Elpaso's bottle. What are you dreaming of, man? Mr. de Spain, you'll kill him. Don't ye see he can't tell ye to stop?"

Bull, with the last flickering spark of vitality still left within him, looked steadily up and winked at de Spain. McAlpin, outraged, stamped out of the room. Steadying the dipper in both hands, Bull with an effort passed one hand at the final moment preliminarily over his mouth, and, raising the bowl, emptied it. The poison electrified him into utterance. "I seen her," he declared, holding his chin well down and in, and speaking in a pardonably proud throat.

"Good, Bull!"

"They've got things tied up for fair over there." He spoke slowly and brokenly. "I never got inside the house till after supper. Toward night I helped Pardaloe put up the stock. He let me into the kitchen after my coaxing for a cup of coffee—he's an ornery, cold-blooded guy, that Pardaloe. Old Duke and Sassoon think the sun rises and sets on the top of his head—funny, ain't it?"

De Spain made no comment. "Whilst I was drinking my coffee—"

"Who gave it to you?"

"Old Bunny, the Mex. Pardaloe goes out to the bunk-house; I sits down to my supper, alone, with Bunny at the stove. All of a sudden who comes a-trippin' in from the front of the house but Nan. I jumped up as strong as I could, but I was too cold and stiff to jump up real strong. She seen me, but didn't pay no attention. I dropped my spoon on the floor. It didn't do no good, neither, so I pushed a hot plate of ham gravy off the table. It hit the dog 'n' he jumped like kingdom come. Old Bunny sails into me, Nan a-watchin', and while Mex was pickin' up and cleanin' up, I sneaks over to the stove and winks at Nan. Say, you oughter seen her look mad at me. She was hot, but I kept a-winkin' and I says to her kind of husky-like: 'Got any letters for Calabasis tonight?' Say, she looked at me as if she'd bore holes into me, but I stood right up and glared back at the little girl. 'Come from there this mornin',' says I, low; 'going back tonight. Some one waiting there for news.'

"By jing! Just as I got the words out o' my mouth who comes a-stalking in but Gale Morgan. The minute he seen me, he lit on me to beat the band—called me everything he could lay his tongue to. I let on I was drunk, but that didn't help. He ordered me off the premises. 'N' the worst of it was, Nan chimed right in and began to scold Bunny for lettin' me in—and leaves the room, quick-like. Bunny put it on Pardaloe, and she and Gale had it, and b' jing, Gale put me out—said he'd pepper me. But wait till I tell y' how she fooled him. It was rainin' like hell, 'n' it looked as if I was booked for a ride through it and hadn't half drunk my second cup of coffee at that. I starts for the barn, when some one in the dark on the porch grabs my arm, spins me around like a top, throws a flasher up into my face, and there was Nan. 'Bull,' she says, 'I'm sorry. I don't want to see you ride out in this with nothing to eat; come this way quick.'

"She took me down cellar from the outside, under the kitchen. When Gale goes out again she flings up the trap-door, speaks to Mex, pulls all the kitchen shades down, locks the doors, and I sets down on the trap-door steps 'n' eats a pipin' hot supper; say! Well, I reckon I drank a couple o' quarts of coffee. 'Bull,' she says, 'I never done you no harm, did I?' 'Never,' says I, 'and I never done you none, neither, did I?' And what's more, I never will do you none.' Then I up and told her. 'Tell him,' says she, 'I can't get hold of a horse, nor a pen, nor a piece of paper—I can't leave the house but what I am watched every minute. They keep track of me day and night. Tell him,' she says, 'I can protect myself; they think they'll break me—make me do what they want me to—marry—but they can't break me, and I'll never do it—tell him that.'

"'But,' says I, 'that ain't the whole case, Miss Nan. What he'll ask me, when he's borin' through me with *his* eyes like the way you're borin' me through with yours, is: When will you see him—when will he see you?'

"She looked worrit for a minit. Then she looks around, grabs up the cover of an empty 'bacco box and a fork and begins a-writing inside." Bull, with as much of a smile as he could call into life from his broken nerves, opened up his blanket, drew carefully from an inside coat pocket an oilskin package, unwrapped from it the flat, square top of a tin tobacco box on which Nan had scratched a message, and handed it triumphantly to de Spain.

He read her words eagerly:

"Wait; don't have trouble. I can stand anything better than bloodshed, Henry. Be patient."

While de Spain, standing close to the lantern, deciphered the brief note, Bull, wrapping his blanket about him with the air of one whose responsibility is well ended, held out his hands toward the blazing stove. De Spain went over the words one by one, and the letters again and again. It was, after all their months of ardent meetings, the first written message he had ever had from Nan. He flamed angrily at the news that she was a prisoner in her own home. But there was much to weigh in her etched words, much to think about concerning her feelings—not alone concerning his own.

He dropped into his chair and, oblivious for a moment of his companion's presence, stared into the fire. When he started from his revery Bull was asleep. De Spain picked him up, carried him in his blanket over to a cot, cut the wet rags off him, and, rolling him in a second blanket, walked out into the barn and ordered up a team and light wagon for Sleepy Cat. The rain fell all night.

CHAPTER XXIV

An Ominous Message

Few men bear suspense well; de Spain took his turn at it very hard. For the first time in his life he found himself braved by men of a type whose defiance he despised—whose lawlessness he ordinarily warred on without compunction—but himself without the freedom that had always been his to act. Every impulse to take the bit in his teeth was met with the same insurmountable obstacle—Nan's feelings—and the unpleasant possibility that might involve him in bloodshed with her kinspeople.

"Patience." He repeated the word to himself a thousand times to deaden his suspense and apprehension. Business affairs took much of his time, but Nan's situation took most of his thought. For the first time he told John Lefever the story of Nan's finding him on Music Mountain, of her aid in his escape, and the sequel of their friendship. Lefever gave it to Bob Scott in Jeffries' office.

"What did I tell you, John?" demanded Bob mildly.

"No matter what you told me," retorted Lefever. "The question is: What's he to do to get Nan away from there without shooting up the Morgans?"

De Spain had gone that morning to Medicine Bend. He got back late and, after a supper at the Mountain House, went directly to his room.

The telephone bell was ringing when he unlocked and threw open his door. Entering the room, he turned on a light, closed the door behind him, and sat down to answer the call.

"Is this Henry de Spain?" came a voice, slowly pronouncing the words over the wire.

"Yes."

"I have a message for you."

"What is it?"

"From Music Mountain."

"Go ahead."

"The message is like this: 'Take me away from here as soon as you can.'"

"From whom is that message?"

"I can't call any names."

"Who are you?"

"I can't tell you that."

"What do you mean?"

"Just what I say. Good-by."

"Hold on. Where are you talking from?"

"About a block from your office."

"Do you think it a fair way to treat a man to—"

"I have to be fair to myself."

"Give me the message again."

"'Take me away from here as soon as you can.'"

"Where does it come from?"

"Music Mountain."

"If you're treating me fair—and I believe you mean to—come over to my room a minute."

"No."

"Let me come to where you are?"

"No."

"Let me wait for you—anywhere?"

"No."

"Do you know me?"

"By sight."

"How did you know I was in town tonight?"

"I saw you get off the train."

"You were looking for me, then?"

"To deliver my message."

"Do you think that message means what it says?"

"I know it does."

"Do you know what it means for me to undertake?"

"I have a pretty stiff idea."

"Did you get it direct from the party who sent it?"

"I can't talk all night. Take it or leave it just where it is."

De Spain heard him close. He closed his own instrument and began feverishly signalling central. "This is 101. Henry de Spain talking," he said briskly. "You just called me. Ten dollars for you, operator, if you can locate that call, quick!"

There was a moment of delay at the central office, then the answer: "It came from 234—Tenison's saloon."

"Give me your name operator. Good. Now give me 22 as quick as the Lord will let you, and ring the neck off the bell."

Lefever answered the call on number 22. The talk was quick and sharp. Messengers were instantly pressed into service from the despatcher's office. Telephone wires hummed, and every man available on the special agent's force was brought into action. Livery stables were covered, the public resorts were put under observation, horsemen clattered up and down the street. Within an incredibly short time the town was rounded up, every outgoing trail watched, and search was under way for any one from Morgan's Gap, and especially for the sender of the telephone message.

De Spain, after instructing Lefever, hastened to Tenison's. His

rapid questioning of the few habitués of the place and the bartender elicited only the information that a man had used the telephone booth within a few minutes. Nobody knew him or, if they did know him, refused to describe him in any but vague terms. He had come in by the front door and slipped out probably by the rear door—at all events, unnoticed by those questioned. By a series of eliminating inquiries, de Spain made out only that the man was not a Morgan. Outside, Bob Scott in the saddle waited with a lead horse. The two men rode straight and hard for the river bridge. They roused an old hunter who lived in a nearby hut, on the town side, and asked whether any horseman had crossed the bridge. The hunter admitted gruffly that he *had* heard a horse's hoof recently on the bridge. Within how long? The hunter, after taking a full precious minute to decide, said thirty minutes; moreover, he insisted that the horseman he had heard had ridden into town, and not out.

Skeptical of the correctness of the information, Scott and de Spain clattered out on the Sinks. Their horseflesh was good and they felt they could overtake any man not suspecting pursuit. The sky was overcast, and speed was their only resource. After two miles of riding, the pursuers reined up on a ridge, and Scott, springing from the saddle, listened for sounds. He rose from the ground, declaring he could hear the strides of a running horse. Again the two dashed ahead.

The chase was bootless. Whoever rode before them easily eluded pursuit. The next time the scout dropped from his saddle to listen, not the faintest sound rewarded his attention. De Spain was impatient. "He could easily slip us," Scott explained, "by leaving the trail for a minute while we rode past—if he knows his business—and I guess he does."

"If the old man was right, that man could have ridden in town and out, too, within half to three-quarters of an hour," said de Spain. "But how could he have got out without being heard?"

"Maybe," suggested Scott, "he forded the river."

"Could he do it?"

"Its a man's job," returned Scott, reflecting, "but it could be done."

"If a man thought it necessary."

"If he knew you by sight," responded Scott unmoved, "he might have thought it necessary."

Undeterred by his failure to overtake the fugitive, de Spain rode rapidly back to town to look for other clews. Nothing further was found to throw light on the message or messenger. No one had been found anywhere in town from Morgan's Gap; whoever had taken a chance in delivering the message had escaped undetected.

Even after the search had been abandoned the significance of the incident remained to be weighed. De Spain was much upset. A conference with Scott, whose judgment in any affair was marked by good sense, and with Lefever, who, like a woman, reached by intuition a conclusion at which Scott or de Spain arrived by process of thought, only revealed the fact that all three, as Lefever confessed, were nonplussed.

"It's one of two things," declared Lefever, whose eyes were never dulled by late hours. "Either they've sent this to lure you into the Gap and 'get' you, or else—and that's a great big 'or else'—she needs you. Henry, did that message—I mean the way it was worded—sound like Nan Morgan?"

De Spain could hardly answer. "It did, and it didn't," he said finally. "But—" his companions saw during the pause by which his lips expressed the resolve he had finally reached that he was not likely to be turned from it—"I am going to act just as if the word came from Nan and she does need me."

More than one scheme for getting quickly into touch with Nan was proposed and rejected within the next ten minutes. And when Lefever, after conferring with Scott, put up to de Spain a proposal that the three should ride into the Gap together and demand Nan at the hands of Duke Morgan, de Spain had reached another conclusion.

"I know you are willing to take more than your share, John, of any game I play. In the first place it isn't right to take you and Bob in where I am going on my own personal affair. And I know Nan wouldn't enjoy the prospect of an all-around fight on her account. Fighting is a horror to that girl. I've got her feelings to think about as well as my own. I've decided what to do, John. I'm going in alone."

"You're going in alone!"

"Tonight. Now, I'll tell you what I'd like you to do if you want to: ride with me and wait till morning, outside El Capitan. If you don't hear from me by ten o'clock, ride back to Calabasas and notify Jeffries to look for a new manager."

"On the contrary, if we don't hear from you by ten o'clock, Henry, we will blaze our way in and drag out your body." Lefever put up his hand to cut off any rejoinder. "Don't discuss it. What happens after ten o'clock tomorrow morning, if we don't hear from you before that, can't possibly be of any interest to you or make any difference." He paused, but de Spain saw that he was not done. When he resumed, he spoke in a tone different from that which de Spain usually associated with him. "Henry, when I was a youngster and going to Sunday-school, my old Aunt Lou often told me a story about a pitcher that used to go to the well. And she told me it went many, many times, safe and sound; but my Aunt Lou told me, further, the pitcher got so used to going to the well safe and sound that it finally went once too many times, just once too often, and got smashed all to thunder. Aunt Lou didn't say it exactly in that way—but such was the substance of the moral.

"You've pulled a good many tough games in this country, Henry. No man knows better than I that you never pulled one for the looks of the thing or to make people talk—or that you ever took a chance you didn't feel you had to take. But, it isn't humanly possible you can keep this up for all time; it *can't* go on forever. The pitcher goes to the well once too often, Henry; there comes a time when it doesn't come back.

"Understand—I'm not saying this to attempt to dissuade you from the worst job you ever started in on. I know your mind is made up. You won't listen to me; you won't listen to Scott; and I'm too good an Indian not to know where I get off, or not to do what I'm told. But this is what I have been thinking of a long, long time; and this what I feel I ought to say, here and now."

The two men were sitting in de Spain's room. De Spain was staring through the broad south window at the white-capped peaks of the distant range. He was silent for a time. "I believe you're right, John," he said after a while. "I know you are. In this case I am tied up more than I've ever been tied before; but I've got to see it through as best I can, and take what comes without whining. My mind is made up and, strange as it may sound to you, I feel that I *am* coming back. Not but what I know its due me, John. Not but what I expect to get it sometime. And maybe I'm wrong now; but I don't feel as if its coming till I've given all the protection to that girl that a man can give to a woman."

CHAPTER XXV

A Surprising Slip

Scott was called by Lefever to conclude in secret the final arrangements.

Uncle Amos Says: "Tom will know that we are doing all we can for him and those other boys 'over there' when I tell him that we are gettin' ready to make the old farm hum next year. With Tom at the front, it makes our own part of the job more important and more satisfyin'".

The ground about the quaking asp grove, and nearest El Capitan, afforded the best concealment close to the Gap. And to this point Scott was directed to bring what men he could before daybreak the following morning.

"It's a short notice to get many men together—of the kind we want," admitted Lefever. "You'll have to skirmish some between now and midnight. What do you think you can do?"

Scott had already made up a tentative list. He named four: first, Farrell Kennedy, who was in town, and said nobody should go if he didn't; Frank Elpaso, the Texan; the Englishman, Tommie Meggeson; and Wickwire, if he could be located—any one of them, Lefever knew, could give an account of himself under all circumstances.

While Scott was getting his men together, de Spain, accompanied by Lefever, was riding toward Music Mountain. Scott had urged on them but one parting caution—not to leave the aspens until rain began falling. When he spoke there was not a cloud in the sky. "It's going to rain tonight, just the same," predicted Scott. "Don't leave the trees till it gets going. Those Gap scouts will get under cover and be hunting for a drink the minute it gets cold—I know them. You can ride right over their toes, if you'll be patient."

The sun set across the range in a drift of grayish-black, low-lying clouds, which seemed only to await its disappearance to envelop the mountains and empty their moisture on the desert. By the time de Spain and Lefever reached the end of their long ride a misty rain was drifting down from the west. The two men had just ridden into the quaking asps when a man coming out of the Gap almost rode into them. The intruders had halted and were sufficiently hidden to escape notice, had not Lefever's horse indiscreetly coughed. The man from the Gap reined up and called out. Lefever answered.

"It's Bull Page," declared de Spain, after the exchange of a few words, calling to Bull at the same time to come over to the shelter of the trees.

"What's going on in there, Bull?" asked de Spain after Bull had told him that Gale had driven him out, and he was heading for Calabasas.

"You tell," retorted Page. "Looks to me like old Duke's getting ready to die. Gale says he's going to draw his will tonight, and don't want nobody around—got old Judge Druel in there."

De Spain pricked up his ears. "What's that, Druel?" he demanded. Bull repeated his declaration. Lefever broke into violent language at the Sleepy Cat jurist's expense, and ended by declaring that no will should be drawn in the Gap that night by Duke Morgan or anybody else, unless he and Bull were made legatees.

Beyond this nothing could be learned from Bull, who was persuaded without difficulty by Lefever to abandon the idea of riding to Calabasas through the rain, and to spend the night with him in the neighborhood, wherever fancy, the rain, and the wind—which was rising—should dictate.

While the two were talking de Spain tried to slip away, unobserved by Lefever, on his errand. He failed, as he expected to, and after some familiar abuse, rode off alone, fortified by every possible suggestion at the hands of a man to whom the slightest precaution was usually a joke.

(To be Continued.)

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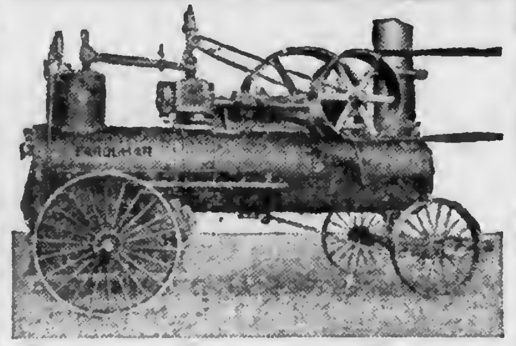

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This school counts on winning from $30 to $45 in prizes in the county contest for home-making and farming. It has raised its averages in school work so that they stand well up in the nineties. It is able also to equip its playground without the aid of the board of Education. Here is the secret of it all. They have a gold mine on that acre of ground, and they know how to get it out. All rural schools have a mine on their grounds, too, but some do not know that it is there. One of the farmers in the district kept telling his neighbors about the gold, and after about three years some of them began to believe him and joined him in digging for it.

This is the way he did it. They formed a Parent-Teacher Association, and in doing that they discovered a wealth of material of which they never dreamed. Here were men and women with tact, talent and a disposition to make the most of their children by the better culture of home and school common sense.

When they began to hold meeting in the school house and tackled the wheezy old pump for a drink and found that a strong man had to take off his coat, and work until the perspiration poured off, they saw at once some of the things that stood in the way of efficient work in that school. The women began to sniff round (as only women can sniff) and they found things that needed cleaning up. The teachers had been doing the best they could with what they had; but they were handicapped by the things that were missing, which men alone would not see. A board of education without a woman on it is like a home without a mother.

These people began to inquire: "What is the use of teaching our children hygiene if you do not let them practice it in school?" Soap paper towels, drinking cups, screened windows, and water containers have come out of this coming-together spirit. A bicycle shed, swings, seesaws, slides and other amusements have been furnished by the patrons. The work of the truant officer is very light in that community, for school is of so much importance there that it is desirable to be in school.

In addition to this, a gardening and home-making contest is held once a year. Local prizes were given for these and other kinds of school work. The pupils are taken once a year to see some historic place, or visit some important industry. The parents visit the school, and the children see the connection between home life and school life.

A school like this is an advantage to the teacher as well as to the community. It not only lightens the load of the teacher but gives greater results. It has brought promotion to two of the teachers recently. One became the Helping Teacher for the county and the other was sought by a district paying a higher salary.

The pupils of this school have been inspired by the co-operation to a degree that they are trying to work out the problem of self control. They have organized just as the parents have done, and they are helping to keep things in proper condition in the school room and on the playground.

The Parent-Teacher Association is arranged in such a way as to divide the work and the responsibility. In addition to the president, secretary and treasurer, there are six departments of work, including an educational department, hygiene department, playground department, program department, social department, and press department. The head of each of these departments is elected at the annual election. Each department head then chooses his helpers to aid him in carrying on the work. This method brings together those who can work together to best advantage. At each meeting the head of the department, or some one he may authorize, gives a short report of what has been done, or the aim for the near future. The program committee arranges for music, recitations etc., while the head of each department is responsible for the speaker once a year. This gives each department an opportunity to have some one speak along the line in which they have the most interest.

Harmony and good feeling prevail in the community, for all are working for the betterment of their school. Efficient work and its results abound in the school, and make work a pleasure. The gold these people are mining is worth more to them than that which comes out of the ground. The feeling prevails that as we contribute of ourselves with our money to the betterment of our school, we make that money do three times the work with one-third of the wear and tear on ourselves, our children and our teachers.

This community is beginning to realize that the crop of boys and girls they are raising is the most valuable crop of all, and they are willing to study the needs of their children as they do the needs of their corn or potatoes, and meet those requirements in a businesslike way. The pioneer in every community who opens up a gold mine that is on that bit of ground dedicated to the education of children will be honored in after years.

BUCKEYE CULTIVATORS

Have special features that make them the most popular Riding and Walking Cultivators on the market. Equipped with either 4, 6 or 8 pin or spring shovels. Easily adjusted for different width rows. Work well under all conditions. Light on both man and team.

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Illustrates and describes many styles suitable for your purpose. Ask your dealer to show you the complete Buckeye line. The simplest, strongest and lightest cultivators on the market. The Buckeye has more good points than any other cultivator and we guarantee it in every respect.

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FREE SAMPLES Wonderful Value Wholesale Prices Profits Divided with customers. Don't fail to investigate these bargains. Recleaned Tested Timothy $3.25 bu., Clover $14 to $16, Alfalfa $8.90, Alsike Clover and Timothy, Sweet Clover and other Grasses and field Seeds at unusually low prices. All sold subject to State or Government Test under an absolute money-back guarantee. We are specialists in grass and field seeds. Located so as to save you money and give quick service. Send today for our big profit-sharing, money-saving Seed Guide which explains all, free. Buy now and save money. Write
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GOOD AS CAN BE GROWN
Prices Below All Others
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Big Catalog FREE.
Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.
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ANIMAL BONE FERTILIZER
ASK YOUR AGENT, OR ADDRESS US. LANCASTER PA.

TIMOTHY $3.15 PER BU. AND UP
116 P. Catalog And Samples FREE
Save money—Buy direct from grower New recleaned Iowa Grown Timothy, free from noxious weeds Guaranteed or money refunded 116-page catalog Free Samples. Low prices on Clover and grass seeds Write before advance.
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SCOTT'S FIELD SEEDS
Our seeds are selected and cleaned to be WEEDLESS and free from dead grains. They will go much farther than ordinary field seeds, nearly always adding enough to the crop to pay for themselves. Samples and catalog including "How to Know Good Seeds" free.
Write today. O. M. SCOTT & SONS CO., Main St., Marysville, O.

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And other Small Fruit.
It is easy to make $300 to $500 per acre on our superior Michigan grown Plants, they grow sure and fast, are big producers. Write to-day for free catalog
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SAMPLE OUR SEED
Three earliest vegetables in cultivation for 10c. One packet each, Robinson's Earliest Tomato, Earliest Round Red Radish, Earliest Lettuce, 10c to new customers. Regular price 30c. CATALOG FREE.
C. N. Robinson & Bro., Dept. 57, Baltimore, Md.

PURE FARM SEEDS
CLOVER, Timothy, Alsike, Alfalfa, Oats and all kinds of PURE FARM SEEDS direct from producer to consumer; free from noxious weed seeds. Ask for samples.
A. C. HOYT & CO., Box P, Fostoria, Ohio.

100 Everbearing Strawberry Plants $1.00 Post Paid
$7.00 per 1000. Catalog of 80 varieties free. Best quality Lowest prices. L. G. TINGLE, Box 77, Pittsville, Md.

FROST-PROOF CABBAGE PLANTS.
Booking orders now for shipment in March or April. 300 by mail, postpaid, $1.25; 1,000 by express, not prepaid, $3.00. DAVID RODWAY, HARTLEY, DEL.

THE BUCKS COUNTY CORN SHOW

The Second Annual Bucks County Corn Show was held at the Doylestown National Bank, December 4-7. The show was held under the auspices of the Doylestown National Bank and under the direction of the Bucks County Farm Bureau. One hundred and twenty-five dollars in prizes was offered by the bank.

To act as feeders for the county show, seventeen local corn shows were held in various parts of the county. At these meetings over 250 ten-acre exhibits were shown. A class for the Grange or Farmers' Club which exhibited the best 100-ear exhibit from ten different farms was made. Thirty dollars in prizes was offered in this class. Classes were also arranged for boys' club work; Sweepstakes prizes; Yellow Dent; White Cap Yellow Dent and White Dent corn.

Two hundred and thirty ten-ear exhibits were sent in by farmers of the county; thirteen organizations competed for the organization prizes; twenty-one boys' club members had completed their summer work and exhibited the corn at the county show.

W. H. Darst, State College, judged the corn on Tuesday, December 4. The W. Atlee Burpee Co. offered a silver cup to the boy who won the first prize in the corn club. Five prizes were awarded in each class and ribbons were given to each prize winner besides the money prizes which he won.

The Corn Show indicated that it was possible to mature White Dent corn in the southern part of the county, but scarcely in the central and northern part. Nineteen exhibits of White Dent corn were shown. It indicated also that White Cap Yellow Dent is the type of corn to be grown in the northern part of the county and in some of the central and southern parts. Furthermore, it was indicated that Yellow Dent corn can be grown to maturity in the northern-central part, central and southern part. This corn show indicated the sections of the county which can mature the different types of corn.

The first prizes in each class were as follows:

White Dent Corn—Walter Collins, Penn's Manor.

Yellow Dent Corn—S. H. Wertz, Warrington.

White Cap Yellow Dent—S. H. Wertz, Warrington.

Sweepstakes in Show—S. H. Wertz, Warrington.

Boys' Club—P. Gross, Doylestown.

Among the Granges

Indiana Co., Pa.—The Indian-Pomona Grange No. 58 met with the Success Grange No. 1656, December 27th. Worthy State Past Master W. F. Hill and State Chaplain G. W. Hatch were present and the code was read by Brother Hatch and explained by Brother Hill. The evening session was held in the court house and the program consisted of songs by the grange, a dialogue by the Success young people and addresses by Brothers W. F. Hill and G. W. Hatch. Brother Hill spoke on the "Relation of the Farmer to the War," and was at his best. His address was good and full of patriotism. Brother Hatch spoke on the "Relation of the Grange to the Public Schools." He urged a radical change in the duties of the county superintendent and better educational facilities for the farmers' children, and this must come thru the grange.

A Prize-Winning Seed Exhibit

Indiana County is forging rapidly ahead in grange work thru the untiring efforts of Brothers G. W. Treese and Teagarden. But there is much indifference yet to overcome. The meeting in the court house had been largely advertised but there were not more than a dozen there that were not at the Pomona. But the patrons are not discouraged.

IGNORANCE NOT BLISSFUL

(Continued from Page 23.)

tear, depreciation, etc. Yes, and the salary of the farmer (manager). Perhaps the manager is to get his pay in revelling in the sweet-scented breezes of stable and field from four A. M. until eight P. M., when he may sit on his veranda and watch the fire bug and hear the whip-poor-will. The supplement of his salary is to go to the spring at the foot of the bluff and take a drink of good pure water. Then he drags his tired frame to bed where he may even be lucky if in his dreams he glides away on life's voyage in a Pierce Arrow while his soul is wrapped in the sweet music of the "Phonograph."

I say down with a lot of false stuff that has been and is being printed about the farmer's business, for ultimately the reader will not only know the truth but, as a consumer, will feel the sting of the lash intended for the man in the furrow. The question of production encircles all classes and reaches back to the non-producer and his table. The cost mark upon food has never been arbitrarily placed by the farmer, but the infallible law of supply and demand has had full sway except when intercepted and distorted by middlemen and profiteers who are the real culprits in the food problem today.—D. H. Watts, Clearfield Co., Pa.

Order Fertilizers Now or You May Have to Do Without Them This Season

The freight congestion is serious. You will help yourselves, us, the railroads, and the Government by giving your order for Fertilizers NOW to your dealer. If all the farmers do this, the dealer can then "bunch" his orders, and be able to order his cars of fertilizers loaded to full capacity. The Government urges that all cars be so loaded.

When the goods arrive haul them home, and put them into your barn until you are ready to use them. If the movement of railroad cars becomes any more serious you may not get a pound of fertilizer at any price.

Our 50 factories and distributing points are so well located geographically as to enable us to get fertilizers to you with minimum amount of hauling.

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Cincinnati, Ohio
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New York City.
Charleston, S. C.
Columbia, S. C.
Jacksonville, Fla.
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V-C Fertilizers

A FIRST-CLASS AUTOMOBILE At a Very Low Price

Our big Winter Reduction Sale is now on. Every auto has been repriced at a big saving—every car is in A-1 condition. Limousines, Coupes, Sedans, Town Cars, Roadsters, Touring Cars and Runabouts—all at a saving. A real car for a little price.

1000 Used Autos $150 up

No matter what car you want we have it, and during January can save you 33 1-3 to 50 per cent. Send for our

Auto Catalog No. A; It's Free and full of valuable information for the man who expects to buy a car and who really wants to save money. Get it.

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WORLD'S LARGEST AUTO DEALERS
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Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof, sanitary and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 141 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

Turn Cutlery Steel Into Your Fields!

Do It Early With Cutaway (CLARK) DISK HARROWS

That's what the disks are made of—a special cutlery steel—forged edge (cut out or solid)—so sharp and sturdy that mother earth crumbles into tiny particles just as you want her to.

Pulverize the soil early this Spring. Get it in the best condition to give the world bigger and better crops—and make it a poor season for Lady Insect and her family.

WRITE FOR THIS BOOK

It's a valuable one to have; tells what you need to know about "The Soil and Its Tillage". With it, we will gladly send our complete Implement Catalog and names of your nearest dealers in CUTAWAY (CLARK) Implements

The Cutaway Harrow Company
639 Main Street, Higganum, Connecticut
Maker of the original CLARK Disk Harrows and Plows.

The Silo Beautiful that Lasts for Ages

Get the beauty and durability of tile in the Lansing "ship-lap" block. Ends overlap — extended shoulders top and bottom—less mortar exposed, better settling of silage—less chance for frost, better looking silo, blocks uniform in shade. Stronger walls. Notched ends on blocks prevent mortar from slipping. Twisted steel reinforcing. Steel hip roof—steel chute—fire proof—adds beauty to the silo. Write for Catalog.

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Also get offer on Climax Silage Cutters and Bidwell Threshers

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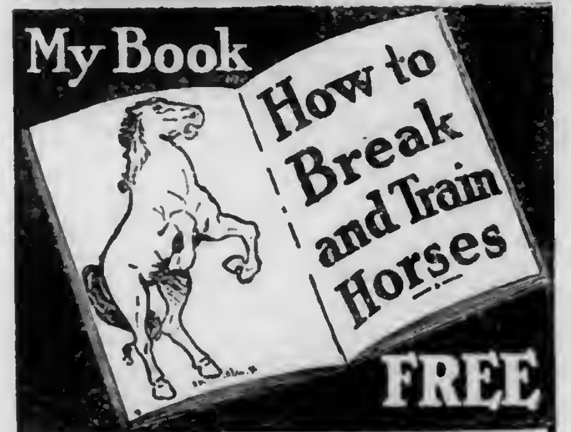
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I can make immediate delivery Now. I give you a 2-year guarantee and a 30-day free road test. Over 250,000 satisfied owners of Split Hickory buggies in the United States. Send and get free buggy book today.

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For Sale, Used and Rebuilt Machinery

22 H. Peerless, steam traction engine, 22 H. Stevens, 22 H. Wood Bros., 22 H. Garr-Scott, 20 H. Baker, 20 H. Huber, 20 H. Rumley, 18 H. Garr-Scott, 18 H. Pitts, 18 H. Huber, 18 H. Nichols and Shepard, 18 H. Russell, 18 H. Baker, 18 H. Wood Bros., 16 H. Pitts, 16 H. Nichols and Shepard, 15 H. Case, 12 H. Case; 30 in. and 32 in. Advance grain threshers, 28 in. and 36 in. Case steel frame grain threshers, 30 in. and 34 in. Pitts, 32 in. Wood Bros., 32 in. Aultman-Taylor; 33 in. Port Huron; 17 x 22 Ann Arbor bailing press; 14 x 18 Whitman, 14 x 18 Ohio. Write us for complete used machinery list. Also for new catalog of Greyhound machinery.

The BANTING MFG. COMPANY
114 Superior St., - TOLEDO, OHIO

TELL the advertiser you saw adv. in Pennsylvania Farmer.

COUNTY NOTES

Adams Co., O., (SE) Jan. 10.—Cold weather continues. The temperature is frequently down to and below zero. The care of live stock and getting of fuel is about all that farmers can do. All roads are covered with ice and some snow. A large amount of good seed corn was selected and stored early by the farmers here. Many farms changing ownership at good prices. Weather is too severe for poultry and not many eggs are gathered now. Much interest taken in poultry here and large amount of cream is sold to creameries.—W. E. Roberts.

McKean Co., Pa., (N) Jan. 5.—Heavy snow fist part of Dec.; extremely cold from the 28th to present time, no sleighing. Cattle are looking well considering grain prices. Much hay is being fed. The present weather is hard on meadows and winter grain. No work can be done, only hauling manure. Considerable lime will be used this year.—R. C. Fuller.

Venango Co., Pa., (NW) Jan. 7.—December was cold and unpleasant; stormy now. Live stock doing as well as could be expected; moderate in price. Very little snow has left crops very much exposed. Butter, 50c; eggs, 60c; potatoes, $1.50; pork (dressed), 20c; chickens (dressed), 30c; hay, $22; straw, $18. The extreme cold weather of the last month has forced suspension of farm work except taking care of stock.—W. J. Pringle.

Lawrence Co., Pa., (W) Jan. 11.—Extreme cold weather prevailed thru December and first of January. A great blizzard from the East on December 8 filled the roads with snow and was followed by gales from the North and West, and zero weather. Outdoor work is entirely suspended. Roads are frozen solid and would be in excellent condition for hauling lime, fertilizers and other supplies, but rail shipments cannot be made. Mills are paying $1.60 for rye, $2.10 for wheat, 90 cents for ear corn, 75 cents for oats and $3 per cwt. for buckwheat. The same mills are selling bran for $2 per cwt.; cottonseed meal, $2.70. All farmers' supplies are high in price and all animals are scarce and dear except horses which are very low. Eggs, 7 cents each; butter, 60 cents lb.; apples, 80 to 90 cents peck; hay, $26 ton; sausage, 40 cents lb.; dressed hogs, 26 cents lb. There is great interest in Red Cross work. The ladies are busy preparing clothing boys from dying from pneu-knitting as they walk along the street. Yet this work is not preventing boys from dieing from pneumonia. Two of our promising boys have died in camp from this disease. There ought to be no more reason for men suffering from this disease in camp than in their own homes. The camps and the supplies need more attention.—J. C. M. Johnston.

Broome Co., N. Y. (SE) Jan. 8.—Ten days of bitter cold with the thermometer down to 30 degrees below at night has caused serious damage to fruits and vegetables in cellars. Shortage of coal is causing much suffering and damage. Binghampton High School has shut down because of lack of fuel. Coal sold only on a prescribed application. Storage butter, 52 cents; fresh, 58 cents. Farmers are getting eight cents per quart for milk. Balanced ration feed sells at $60 per ton. Beans, $8 per bushel; cabbage 2 cents per pound; potatoes, $1.50 per bushel; wheat, $2.32; oats, 92 cents; bushel wheat, $2.32; oats, 92 cents; corn, $2.30; bran, $45 per ton; corn meal, $81. Many farmers are holding auctions and selling off their cattle and turning them off for beef.—C. H.

GRANGE-LABOR CONFERENCE RESOLUTIONS

The following resolutions were adopted at the joint conference of representatives of the Pennsylvania State Grange and the labor organizations of the state, held held at Harrisburg, January 9.

We declare that the interests of workers in cities and on the farms, rightly understood, are substantially the same. We declare that these interests require a permanent channel thru which they may be expressed and subserved. We recommend to the organizations, here represented, the establishment of a joint working alliance. We recommend that a permanent joint committee be appointed by the chairman.

We recommend that a permanent joint committee shall hold meetings once a month, thruout the year, at the call of the chairman, and that the first duty of this committee shall be to prepare a tentative working agreement to be submitted to the organizations represented, for amendment and ratification. We recommend that said committee shall prepare and report to the alliance a plan for the supply of agricultural products direct from the farmer to the consumer.

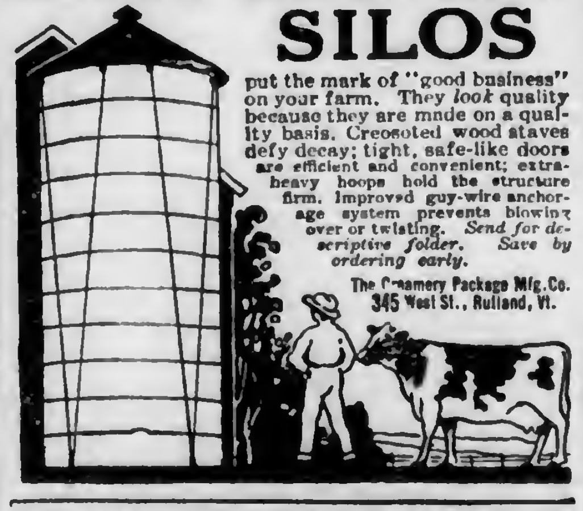
Realizing the paramount importance of abundant, reliable and fairly-priced supply of food, both to our own people and to our allies in the war, we join in demanding that it shall be made possible for the farmers of Pennsylvania and the whole United States to produce the food that is urgently required. We recommend further, in the interest of all, that the farmer be assured of a sufficient supply of skilled farm labor to grow the products required, fair prices for their products when grown, and sufficient fertilizers and other farm necessities at reasonable cost, without extortion To these ends we favor the extension of organization and co-operation among and between all workers.

We recognize that the high cost of living is due not to excessive prices received by farmers, but to excessive prices exacted from consumers, less of half of whose dollar, spent for food, gets back to the farmer who produced it. We recognize that the so-called shortage is really not a shortage of either miners or coal mined, but has been due to poorly-managed transportation. The bituminous miners are, in many cases, only making half time, or less, due to the lack of placed cars and, while the government has fixed the price at the mine, the consumer is still, in many cases, paying prices utterly unreasonable.

We recommend that the Grange be requested to supply to the labor papers, from time to time, articles upon the circumstances and conditions of production so that the consumer may understand the process of production on the farm, and that the labor organizations be requested to furnish articles dealing with the problems of industrial production for use in the Grange official paper.

Where vitally necessary industries are undermanned, we suggest the assignment of drafted or enlisted men, to work under parole at the prevailing rate of wages in the positions where they can serve the nation best, offers a prompt and reasonable remedy to the perilous conditions in these necessary industries. We believe that such parolement would do away with any reason for conscription of labor to which we are opposed.

We recommend that our joint committee present these matters to the Council of National Defense for consideration and co-operation.


GREEN MOUNTAIN SILOS

put the mark of "good business" on your farm. They *look* quality because they are made on a quality basis. Creosoted wood staves defy decay; tight, safe-like doors are efficient and convenient; extra-heavy hoops hold the structure firm. Improved guy-wire anchorage system prevents blowing over or twisting. *Send for descriptive folder. Save by ordering early.*

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KELLY-DUPLEX COMBINATION CUTTER and Grinding Mill

Grinds alfalfa, corn fodder, clover hay, pea vine hay, sheaf oats, kaffir corn, and milo maize in the head, either separately or mixed in varied proportions with corn on the cob, with or without shucks, seed oats, rye, barley, corn and all other grains.

FULLY GUARANTEED

Four plates—a double set, grinding at the same time accounts for its large capacity. This machine has three sets of change feed gears. Perfect regulation, fine, medium or coarse grinding. For capacity, easy running and uniform grinding, the Kelly-Duplex can't be beat. Especially adapted for Gasoline Engines. Write for free catalog.

DUPLEX MILL & MFG. CO., Box 324 Springfield, Ohio

SOUTH DAKOTA will back you in buying a farm and also loan you cheap money for stock and improvements and this where the wealth per farm is greatest of all states. For state bulletins, write Immigration Department, Chas. McCaffree, Commissioner, Capitol 70, Pierre, S. D.

PENNSYLVANIA VEGETABLE GROWERS TO MEET

The Pennsylvania Vegetable Growers will hold their annual convention in Harrisburg, January 22nd to 24th, 1918, in conjunction with the State Horticultural Association of Pennsylvania. Other state organizations holding conventions at the same time are the State Board of Agriculture, the Pennsylvania Breeders' Association, and Pennsylvania Potato Growers' Association. Exhibits of fruit and vegetables and also of corn, potatoes, dairy products, wool, and special exhibits will be held in the Emerson-Brintingham Machinery Building.

The sessions will begin on Tuesday afternoon, January 22. A good program has been prepared containing subjects for discussion on tractors and other motor machines, labor-saving devices, the curb market, marketing, varieties, fertilizer situation, cost of production, the market gardener as a food producer, etc. S. H. Starkey, of Bustleton, Pa., is chairman of the association, and J. R. Bechtel, State College, Pa., secretary.

FARM LABOR AMENDMENT

Congressman Snyder, of the Herkimer District of New York, proposes an amendment to the federal conscription act. The amendment would allow each owner or tenant of 50 to 100 acres of tillable land, one son or worker, and each owner or tenant of 100 or more acres two sons or two workers. Such workers would be returned from training camps to labor on such farms thruout the war or be returned to military service if such work be suspended for any reason except illness. This appears to be the surest solution of the farm labor problem and will restore skilled workers who have enlisted or have been drafted. The places of these men cannot be filled acceptably by unskilled city workers, schoolboys or female help; and they should never have been taken. Here is a chance for farmers to make their needs known. Write to your congressmen, telling them what you think of the Snyder amendment.—F.

TRACTOR SHORT COURSE

Realizing that under present conditions, the gas engine and tractor on the farm must be used to a greater extent than ever before, and that to get the maximum benefit out of these engines they have to be operated by those having knowledge of their construction and design. The Pennsylvania State College will hold a series of short courses in gas engines and tractors of one week each. The primary purpose of these courses is to instruct farmers and any other citizens who are actually operating or assisting in the operation of gas engines and tractors on the farms of Pennsylvania.

In order that those who take the tractor short courses may get the greatest good the authorities will not allow the course to be overcrowded. They deem it advisable to limit the number of men to 20 each week. The expense of the course will amount to railroad fare and hotel bills necessary to reach State College and the cost of room and board while at the College.

The first week of the Short Course was given ending Saturday, January 12. Each week thereafter, a course will be offered, as long as the attendance justifies it; beginning January 21 to 28, etc. Enrollment should be arranged promptly by mail in order that it may not exceed 20 during any one week.

MISSED COPY LIKE MISSING A MEAL

Enclosed find subscription renewal for two years. I would not like to be without Pennsylvania Farmer. Copy for December 8 did not reach us. Missing a copy of your paper is like missing a meal.—Wm. F. Swavely, Coopersburg, Pa.

TYGERT Fertilizers

RIPEN CROPS EARLY

Dealers and Agents Wanted

THE J. E. TYGERT CO.
28D So. Delaware Ave.
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WERTHAN PAYS HIGHEST PRICES FOR EMPTY BAGS

CASH FOR EMPTY BAGS

We pay highest prices and also freight charges. Be sure to get our prices before disposing of your bags. They're worth money to you and we'll pay you best cash price for them as soon as received and assorted. Write us at once stating how many you have.

WERTHAN BAG COMPANY
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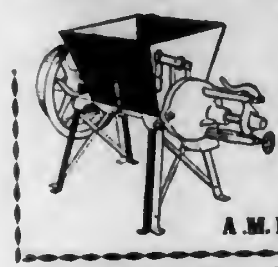
Trenton Bag & Burlap Co.
All Kinds Bags Bought

Fertilizer bags especially. Also feed, bran, and molasses bags. We pay freight and give highest prices. Prompt returns. Send us your old rags and rubber.

TRENTON BAG & BURLAP CO.
Trenton, N. J.
Reference: Mercer Trust Co., Trenton, N.J.


PEERLESS FEED MILL

Double crusher roll machine cut plates. Grinds better quality feed with less power, grinds green ear corn, small grains and alfalfa. Also furnished with cast plates. Sizes 1 1-2 to 20 H. P. Write for prices & catalog.

A. M. Dellinger, Lancaster, Pa.

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Unhealthy Horse.—I have a ten-year-old horse that has fairly good appetite, shows no particular symptoms of sickness, but is dead on foot. I thought he might have worms, but none came from him when I gave him worm dope. I suspect his kidneys may be out of order as he passes water too often and it is rather thick and yellow. When he stands in stable more than one day his legs stock. He is driven just enough to give him exercise. I am anxious to have you prescribe for him as he is valuable. E. M., Towanda, Pa.—Increase his grain ration and give him one dram fluid extract nux vomica, one-half ounce tincture gentian, one-half ounce tincture cinchona and one dram acetate of potash at dose in either feed or drinking water, three times a day.

Mange.—I bought a pup when he was only five weeks old. He is now six months old. Soon after I got him he commenced to dig and scratch himself, but I applied creolin and water which, after a time, seemed to cure him. But under the elbow and briskit the skin is rough and sore. The other part of the body seems to be all right and I would like to have him cured. Was this brought on by feeding him warm milk? B. F. G., Coopersburg, Pa.—No, feeding him milk did not cause his skin disease. You applied one of the proper remedies to the skin. Paint sore parts with tincture Iodine, twice a week, or apply iodine ointment occasionally. Give him two drops Fowler's solution at a dose in feed, three times daily.

Lamenitis.—We have a ten-year-old horse that we recently purchased in the city. The man who owned him stated that he had been sore in both front feet for a long time, but thought if he was kept on a farm he might get well. When walking his fore heels seem to touch ground first. When standing he shifts from one foot to the other, as if in pain. Both fore hoofs are wrinkled more or less, much like the horn of an old cow. Exercise seems to relieve him of some of his soreness. What treatment do you recommend? W. E. M., Jamestown, N. Y.—Clip hair off coronets in front and apply one part cantharides and five parts fresh lard every two weeks and it will help him.

Chronic Indigestion.—I have a ten-year-old cow that is not thriving altho fairly well fed. I have noticed that she bloats some after each meal, but not badly. I feed her ground corn, some bran and good timothy hay. Her stable is not very warm, but her stall is well supplied with good bedding. H. A., Hulls Falls, N. Y.—Doubtless a change of feed would soon help her. If you have clover, alfalfa, good corn fodder, silage or roots, feed her some of those, or what you have on hand. Mix equal parts salt, ginger, gentian, red cinchona and fenugreek, and give her two tablespoonfuls at dose in feed, two or three times a day. She should not be turned outdoors during cold or stormy weather.

Hog Has Sore Ears.—We have hog that will weigh about 150 pounds, troubled with sore ears. I am not certain but suspect they were frozen some ten days ago. The skin cracks open, but sores are not very raw. . C. D., Mayville, N. Y.—Mix one part oxide zinc in five parts vaseline and apply to sore ear twice daily.

Calf With Bunch On Elbow.—We have calf ten weeks old that has hard bunch on upper and back part of elbow joint, but he is not lame. I would like to know how to remove it. M. G., Manor Hill, Pa.—Clip off hair and apply one part iodine and nine parts fresh lard twice a week. Perhaps it will be necessary to open, or cut out bunch, then wound will soon heal.

Dairy Cattle

A COW TESTER WRITES

"I have tested 272 cow months. Of this 110 Holsteins, 47 Jerseys, 57 Shorthorns, 35 Herefords, 7 Red Polls, 13 Angus and 3 mixed. Have had 1 Jersey, 1 Red Poll and 2 Herefords exceed 30 lbs. fat in 30 days. 30 Holsteins have made from 30 to 62 lbs. fat each in 30 days."

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Berkshires October Pigs. Large Litters. EDWIN B. MAULE, COATESVILLE, PA.

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Large Berkshire Swine Registered High Grade. Prices reasonable. Write
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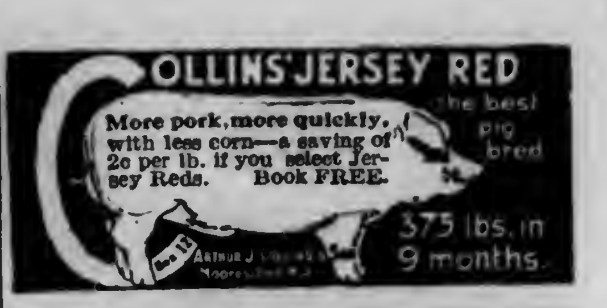

More pork, more quickly, with less corn—a saving of 2c per lb. if you select Jersey Reds. Book FREE.

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Majestic Mammoth, weight 407 lbs., at 7 month, was bred and raised by me. Special: Booking orders for bred sows and gilts. Minimum Prices: Weaned pigs $20 each, bred sows and gilts $1.00 each.

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O. I. C. SWINE Big Type, Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants.
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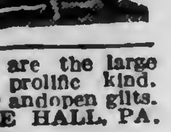
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Make Money RAISING HARES and reduce cost of living. GARLAND ZOOLOGICAL COMPANY, OLDTOWN, MAINE.

Who Wants a Pony?

"DOLLY" Given to George

This is George Edwin Adams of Cayuga County, N. Y. He sent me his name and I sent him "Dolly." "Dolly" took the first premium at the County Fair.

"EARLY BIRD" Given to Edwin

The Pony on the right belongs to Edwin Larson, Worcester County, Mass. Edwin and "Early Bird" like to take their friends out driving.

"TRUSTY" Given to Raymond

The Pony above is "Trusty," that I sent to Raymond Krueger, Washington Co., Minn.

"HEINIE" Given to Clarence

The boy above is Clarence Niemoeller, Bartholomew County, Ind. Clarence sent me his name and I sent him "Heine." Clarence says he would not take $1000 for "Heine."

"Kip" Given to Anna Ruth

Here you see Anna Ruth Miller of Logan County, Ohio, and her new friend "Kip." Anna Ruth says she is glad she sent me her name because "Kip" is the finest Pony in the whole state of Ohio.

"PAT" Given to Flossie

Little Flossie Meredith looks as though she is training for a circus, but she is just having good times with "Pat," the Pony I sent her. Flossie lives in Jasper Co., Iowa.

"MAC" Given to Ruth

It looks as though Ruth and "Mac" were also training for the circus. Ruth says he sticks his nose into a bag of pop-corn whenever he sees a pop-corn stand. Ruth Mead lives in Saline Co., Missouri. She sent in her name and received "Mac."

Over 500 Ponies Given

to Boys and Girls

We have given away over 500 Shetland Ponies to Boys and Girls, all over America.

Now we are going to give away several more ponies—the finest we could buy—and we want every family that takes this paper to stand an equal chance.

Every Boy and Girl Has the Same Chance to Get One of These Ponies

No matter where you live, no matter how young, every Boy and Girl has the same good opportunity to get one of these Ponies without a cent of cost.

If you are a Boy or Girl send in your name. If you are the Father or Mother of a Boy or Girl, send in your child's name. **Remember, no charges** of any kind and nothing to buy. Just send in your name.

Pony Pictures Free

As soon as I hear from you I shall send you at once a number of Pony Pictures showing the Ponies we are giving away, and telling all about them; also pictures of many of the Ponies we have given away and the Boys and Girls to whom they were given. I will also tell you how to get one of these Ponies without paying a cent.

If You Want a Pony—Send Your Name

If you ever want a Pony in your life, don't put off this splendid chance. It may never come again. We have actually given away over 500 Ponies. I am known as the Pony King, because I have given more Ponies to Boys and Girls than any other man in America.

Fill out the coupon in the corner below, or just write your name, address and age on a Postal Card and send it to me. Do it today before you forget it.

The Pony King
570 Webb Bldg., St. Paul, Minn.

Pony Pictures Sent Free

Write Your Name Here

THE PONY KING, 570 Webb Bld., St. Paul, Minn.
Please send me the Free Pony Pictures and enter my name in your Pony Club. I want to get one of the Ponies you are giving away.

My Name is ....

P. O. .... Age..........

State.............................. R. F. D..........

"DAPPLE" Given to Ernest

The Pony on the right is "Dapple," a beautiful little Shetland that I sent to Ernest Heckert, York County, Pa. "Dapple" traveled over 1000 miles to his new home. The picture shows Ernest driving "Dapple" in a Memorial Day parade in the little buggy that I sent with "Dapple."

If you want a Pony like "Dapple" you had better send me your name right away.

(105)

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PENNSYLVANIA FARMER

AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

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Keeping Accounts on the Farm Work

How Cost and Profit Records Help in Planning the Farm System

By W. H. ROTHENBERGER
MONTGOMERY CO., PA.

The farmer is conducting one of the most complicated of our great industries. The results are largely dependent upon his business ability and his power to co-operate with and to control the forces of nature; and they are so variable and uncertain at times that only the most intelligent or favorably situated with regard to markets, labor, etc., are able to make more than a living wage and interest on the money invested. No man in any other business of like size or diversity would think of getting along without keeping a set of accounts. It is just as important for a farmer to know whether oats is a paying crop, whether it is better to feed the corn and hay to the cows than to keep less stock and sell the feed, or which are his unprofitable cows, as it is for the merchant to know his loss because of non-collectable bills, or for the milk retailer to know the cost of distributing milk.

Many different plans have been devised by which the farm records may be kept, some of them being so complicated that it requires a business education to follow out the instructions; others so simple and incomplete that they are of little help. For accounts to be of any use to the farmer, the system must be easy enough so he can keep it, simple enough to require the smallest amount of time to make the entries, but at the same time contain the information necessary to properly conduct and improve his business.

A plan of farm cost accounts has been worked out by Dr. Warren of the New York State College of Agriculture. It shows how much one is making or losing on his business each year, how much one is making or losing on each crop or class of animals each year, how the labor is distributed, how much it costs to use a horse per hour, how many hours he works per day on the average, how much it costs to use a machine per hour, what the different items of expense are in producing a crop or an animal product, where to economize or use better methods to reduce the costs, at what date the different farm operations were performed, how much money is invested in things that bring direct money returns, how much it costs the family to live, what the net profit per hour of labor expended on the different farm enterprises is, the cost of producing a quart of milk, and a great variety of other things of interest and direct monetary value for economically and profitably conducting the farm business. This system is fully described in Farmers' Bulletin 572 of the United States Department of Agriculture, which can be had for the asking by addressing the Secretary of Agriculture, Washington, D. C.

I have used this plan faithfully for two years and found it very useful. It is also simple enough that a farmer of average intelligence can keep such a set of books. It requires not over two minutes a day to make all the necessary entries, but the closing at the end of the year takes quite a lot of time. By making use of some of the figures obtained from this two years' records, such as the number of hours required to produce an acre of the different farm crops, the number of hours required to care for a cow per year, the average cost of using a horse or a machine per hour, etc., I have simplified this system of accounts for my own needs, making it a great deal less complicated but giving me all the information needed.

Records Show That More Horses Than Necessary Are Big Expense.

A note book about 6 inches by 10 inches and containing around 75 pages is of convenient size It can be gotten with a column ruled on the left side of the page for the date and a double column on the right side for the dollars and cents. I keep a separate account of each of the following enterprises: Farm, horses, hens, cows, corn, oats, hay, wheat, equipment, labor, personal, hogs and alfalfa, using two pages which face each other for each account. The left-hand page is called the Debit side, and on this is entered a record of all money expended on that enterprise. The right-hand page is the Credit side and this contains a record of all the products, and their value, produced by this enterprise. The tables on next page illustrate my account with 37 acres of corn.

Besides the actual cash required to buy seed or fertilizer for crops or feed, etc., for the live stock, there are other items of expense which must be charged, such as use of buildings, labor of man, horse and equipment, interest on money invested and insurance, besides the use of land by the crops. These are the most difficult things for the amateur to determine.

About 10 percent of the value of the buildings should be charged to the live stock or crops that occupy them. If a barn is worth $2,500, the cows, horses, hay, oats, wheat, etc., should be charged $250 rent, and this rent should be divided in proportion to the amount and value of space occupied by each.

During the two years which I kept complete accounts, I have found that it took about 180 hours of man labor and 42 hours of horse and equipment labor to care for a cow per year. It also required 54 man-hours to produce an acre of corn, 12 for oats, 8 for hay and 14 for wheat, while it took 64 horse- and equipment-hours for one acre of corn, 22 for oats, 10 for hay and 36 for wheat. These figures are made use of now every year, for it saves the trouble required to keep the labor records which simplifies the accounts just about half. The labor on an acre of corn or of caring for a cow varies very little from year to year. An extra cultivation of corn costs little as compared with the total cost, and where the charges are slightly higher at one place, they may be just that much lower at another. The whole plan of farm accounts must of necessity include a lot of guesses and estimates, so it is much more important to get all the items fairly accurate in general than to waste the time trying to get every entry correct to the cent.

For man labor, each enterprise is charged with 20 cents per hour, 22 cents per hour for horse labor and 10 cents for equipment labor for this year. Contrary to gen-

A Herd is Only as Good as it Does. Only Cost-Records Will Tell What It Does.

eral opinion, I have always found horse labor to be higher per hour than man labor.

Interest must be charged on money invested in each enterprise. This item must not be forgotten in the growing crops. In wheat, for instance, money is invested in labor, seed, fertilizer, etc., nine months before the crop is harvested; so interest must be charged for that time for the money spent in putting out the crop. If live stock is worth less at the end of the year than at the beginning, it must be charged with that much depreciation. If it is worth more, the amount is put on the credit side.

Crops must be charged with the use of land. Where land is worth $100 per acre exclusive of the buildings, the crops would be charged $5 per acre. When fertilizer or manure is applied to a crop, that crop does not remove all the fertility, so in case of fertilizer we charge only 50 percent to the first crop and in the case of manure 40 percent to the first crop; 30 percent to the second, 20 percent to the third and 10 percent to the next.

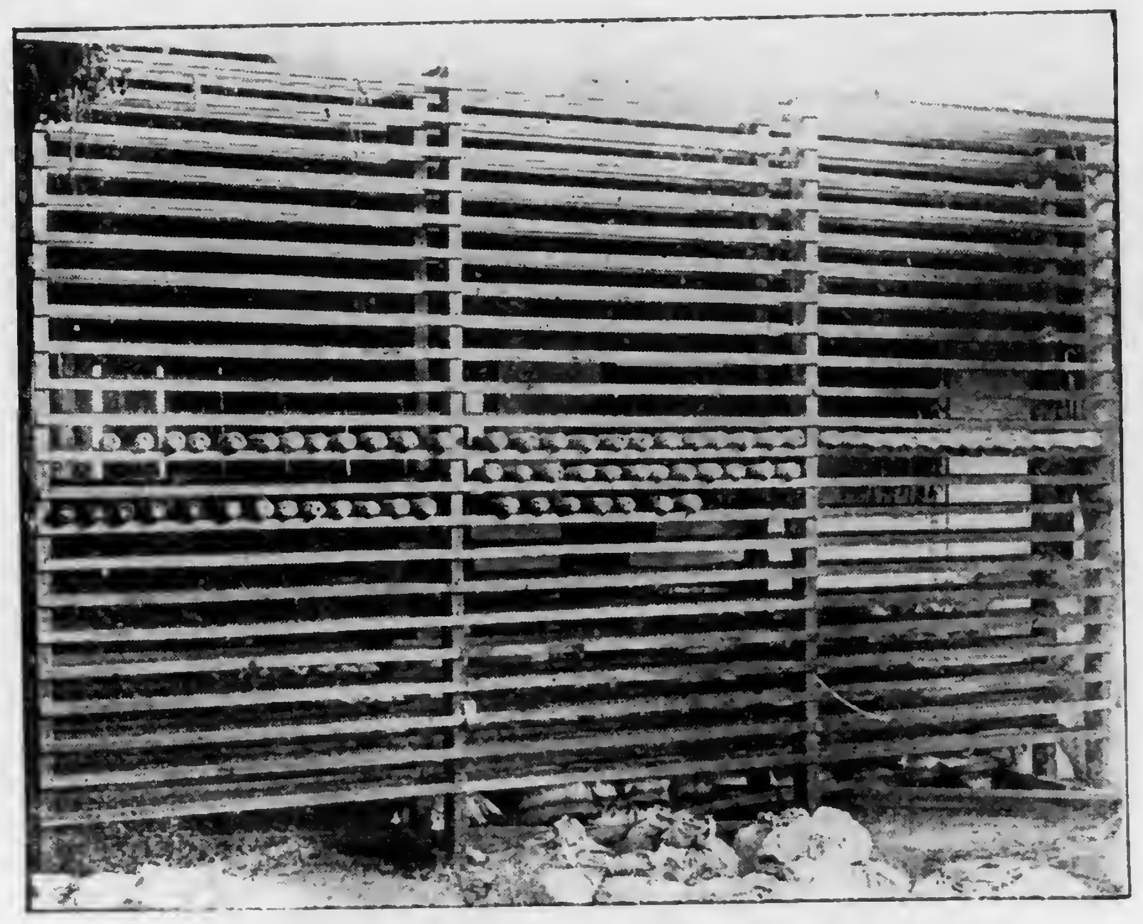
After all the items are entered, the debit and credit pages are each added up and the difference is the balance gain or loss as the case may be. Besides these accounts, I keep a separate record of the milk production of each cow, weighing the milk regularly one day a week and then multiplying it by seven to find the total production per year. Ruled sheets are used with the dates along the left and the names of the cows along the top as illustrated below.

These separate milk records are especially valuable in weeding out the unprofitable cows and for determining which cows' calves to raise. Surely in these times of high cost of production and comparatively low price of milk, one can not afford to keep cows which pay too little board, and, without actually weighing the milk it would be impossible for any farmer with an average-sized herd even to place his cows in order of production, besides being entirely ignorant of the approximate production of each individual. These records also form the basis for determining the amount of grain feed each cow is to receive. We have learned long since that it is not profitable to give each cow the same amount of feed, regardless of the milk flow. At present, my cows receive one pound of grain for three and one-half pounds of milk.

		Nell	Hazel	Violet	Lucy	Bess
Nov. 7.	A. M.	18.2	22.3	23.4	18.3	13.2
	P. M.	17.3	21.2	24.1	19.2	14.3
Nov. 14.	A. M.	19.1	20.8	22.3	20.1	13.8
	P. M.	18.5	21.7	21.0	18.2	15.1

Farm accounts of some sort are as indispensible as the common harrow. Who is to know the cost of producing a quart of milk or a bushel of wheat if the farmer doesn't? In the whole controversy of the price to be paid for milk there have been too few farmers who could furnish actual figures concerning the cost of production to the Tri-State Milk Commission, to the Food Administration and to the newspapers. The sooner the farmer can produce actual figures as to his different operations and scatter them thru the local, the farm and city papers, the sooner will the consumer appreciate the hardships of the producer and become familiar with the small margin of profit or actual loss, as is too often the case. Such records will do much to eliminate the unnecessary middlemen or help curb their extravagant profits where they are a necessity. Then the farmer will be able at least to make a fair living and compete in the labor market by being able to offer enough wage to get back some of the help which has already gone to other more profitable places of employment.

One of the surprises to me at the close of the first year's accounts was the fact that the horses worked less than four hours per day on the average thru the year and stood idle the other twenty. There were seven horses for 165 crop acres, or 23½ acres per horse. I have only six now, and while they have to work pretty hard at times, it means quite a saving when the cost of keeping a horse is over $150 per year.



A Convenient Rack for Drying and Curing Seed Corn

Farm accounts are useful in that they are a pretty complete diary and contain information that one is sometimes very anxious to have later, such as, when you finished sowing wheat, how much clover seed you put to the acre, how much you paid for twine last, what you received for your milk a certain month, what you paid for feed, how much you spent for labor, etc.

Accounts are valuable because they show the gain or loss on each farm enterprise. I know many farmers who grew crops to feed to the cows to make manure to grow more crops, and they haven't the slightest idea whether they are making money on their cows or if it would be more profitable to sell their corn and hay instead of feeding it. Personally, I know that oats is not a profitable crop to grow, altho I grow some because it fits into my rotation so well. But after the first year's accounts were closed I decided to eliminate this crop from the rotation as much as possible. Most farmers in this neighborhood give it full place in their five-year rotation.

Unless one receives a farm thru inheritance, or has a large family who help with the work without pay, or has unusually fortunate soil or market conditions, it seems to me almost impossible to make more than a living on the farm without keeping some system of accounts of the business.

Good Service From Tractor

We have been using on our farm a tractor attachment for a Ford car. By giving the car careful attention we have found this tractor rather successful. The work the attachment requires is more than was intended for this little car, but with good care it will do a lot of farm work. We have used this tractor for mowing hay, hauling in hay, plowing bottom land with a two-bottom plow, pulling binder on rather rough and uneven fields, also pulling scraper on road with fair success.

We have also used a tractor of the creeper or track-laying type with fine success. I think without doubt that this is the style tractor for our Pennsylvania hills. It is very powerful and can travel on any kind of ground. We are pulling out oil wells and any kind of work a team of horses will do. We have had this tractor in places I would be almost afraid to put a good team.—John D. Rynd, Venango Co., Penna.

Spread Straw on Winter Grain.—The best way to use straw is as a bedding in stables, sheds or yards where it gives comfort to live stock and helps to hold and conserve the fertility of the manure, but in case of crop farming without live stock, the straw may be used with good results by spreading it on fields of winter wheat or winter rye. Straw spread on winter grain helps to conserve soil moisture, catches snow, gives winter protection for the crop and is also valuable as a fertilizer when finally mixed with the soil by disking or plowing. The plant-food value of straw is given at $2.50 to $3 per ton.

Straw may be spread on winter grain immediately after seeding before the grain comes up, or later in the fall after the ground freezes. Straw spreaders are now made and successfully used for this purpose. Some manure spreaders are now being equipped with straw spreading attachments. The prospective buyer should investigate this point before buying a new spreader. Care should be taken to spread the straw evenly and thinly in order not to smother the young grain. To prevent drifting of the straw with heavy wind, it is advisable to pack it into the ground with a corrugated roller or subsurface packer.

Manure thrown out into the yard and exposed to heavy rains loses a part of its most valuable fertilizing elements.

ACCOUNT WITH CORN

		Debits					Credits		
1916					1916				
April	7	2 tons fertilizer, 2-8-10	$ 51		December	23	91 bushels sold @ 90 cents	$ 81	90
	8	5 bushels seed @ $1.50	7	50	1917				
	18	Tar and carbolic acid		15	February	9	327 bushel sold @ $1	327	
September	17	75 pounds twine @ 11 cents	8	25			150 bushels for cows @ $1	150	
		Electric current for filling silo	14	65			100 bushels for horses @ $1	100	
		102 loads manure @ $2	204				10 bushels for hogs @ $1	10	
		Use of buildings and silos	62				5 bushels for chickens @ $1	5	
		1,606 hours man labor @ 18 cents	289	08			200 bushels inventory @ $1	200	
		1,928 hours horse labor @ 19 cents	366	32			60 tons ensilage @ $6	360	
		1,928 hours equipment labor @ 8 cents	154	24			34 tons ensilage inventory	204	
		Insurance	1	60			Fodder for cows	40	
		½ year interest on $545.07 @ 5 percent	13	63			Foder for horses	80	
		Balance gain	500	88			Fodder inventory	60	
							Residual manure, 60 percent	122	40
			$1765	80			Residual fertilizer 50 percent	25	50
								$1765	80

Fertilizers: The Farm Supply and Its Use

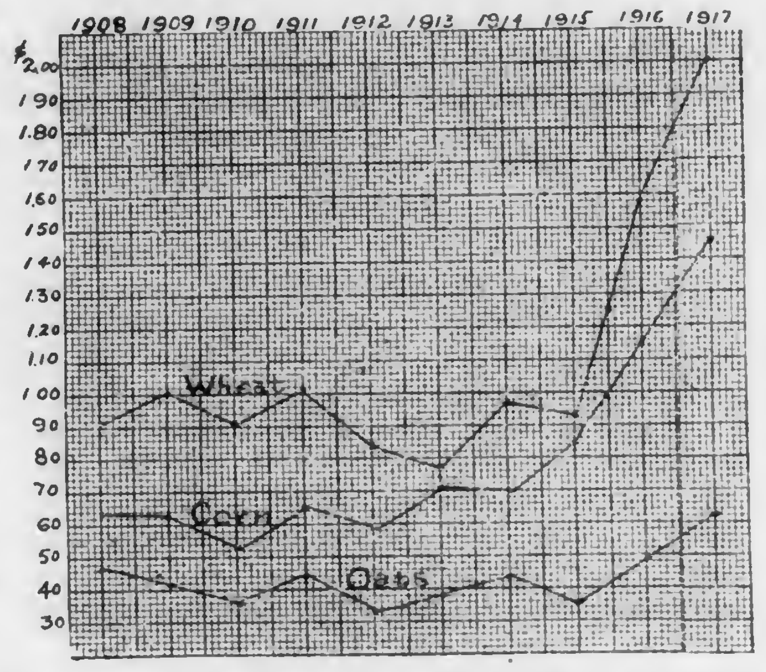
Pointers on How, When and What to Buy---C. C. Hulsart, New Jersey

There are many factors that enter into successful farming, one of which is the supply of fertilizers. The readers of Pennsylvania Farmer will doubtless remember that I have advocated the purchase of raw materials, and mixing at home, claiming a saving by this method of from four to eight dollars per ton. I have followed this practice for twenty years or more with good results. Now under war conditions, the opposite seems to be the case.

I began looking into the market conditions on fertilizing materials early in the fall. I found acid phosphate nearly double in price and raw and steamed bone nearly as bad. It is from these two sources that nearly all of our phosphoric acid is derived. When it came to carriers of ammonia, blood, tankage, and fish are used. I found matters still worse in these—$6.75 to $8 per unit of ammonia was the best prices procurable. Nitrate of soda was $100 per ton. On sulphate of ammonia I had no price, but understand it was on a par with other carriers of nitrogen. Potash was $6 per unit (a unit means 1 percent or 20 pounds per ton). I found upon further investigation that I could purchase my plant food in a mixed fertilizer this season for about the same price per pound of plant food that it would cost me in raw materials, hence I have contracted for my requirements in ready mixed goods for the first time in twenty or more years.

The large manufacturers claim they could not do this had they not bought their raw materials thru the summer months when prices were a little easier. They also say that when the present supply is exhausted prices will have to advance. Too many farmers wait until time to use fertilizers before ordering their supply. Some do even worse than that—they go to their local dealer for a few bags as needed. Either practice is bad and should be discontinued. Every farmer who intends using fertilizers on his land should see to it at once that sufficient fertilizers are ordered for his needs.

Now comes the question what to order. Usually these goods are bought because recommended by a brother farmer, or because that particular brand could be bought at a less price per ton than some other, regardless of the plant food contained therein. In purchasing a supply of fertilizers for all needs in advance of the time to use them it is well to be governed by these well-known facts: First, that nearly all soils on the Atlantic seaboard and adjacent thereto are deficient in soluble phosphoric acid. Second, that soluble phosphoric acid is needed as a food for all forms of bacteria, and it must be in ample supply thru the soil when seeds are forming and from there on until maturity. Hence, any and all cereal crops must have an ample supply of soluble and available phosphoric acid. Many of the root crops, too, make extravagant demands on the soil for this plant food. With these facts in mind the farmer should not have any difficulty in choosing, so far as this ingredient is concerned.



The Average Farm Price of Wheat, Corn and Oats on Nov. 1, for 10 Years.

In carriers of nitrogen, it should be known that the function of this element is to make leaf and stem growth, and that a healthy and vigorous leaf and stem growth is necessary to a maximum yield, especially in such crops as cabbage, lettuce and the vine crops. These crops need it not only to help them make strong and healthy growth but to give to the edible part appearance, flavor, succulence and palatability. Hence, a fertilizer for such crops should carry higher percentages of nitrogen (often listed as ammonia in commercial fertilizers), or subsequent applications of nitrate of soda during the growing season should be made.

The writer's method is to use a fertilizer high in phosphoric acid, say about 10 percent. with probably 3 percent ammonia. This would be all right in most cases for the seed-bearing crops as it is; but I supplement this fertilizer with nitrate of soda for all crops needing greater quantities of nitrogen. In quantity, I am governed by the requirements of that particular plant and the kind of the soil in which the crop is growing.

As to the element of potash in a fertilizer, the past season's experiments have shown that it will pay to use two percent of potash on potatoes and tomatoes. With potash at $6 per unit it behooves us to be conservative. With the price of fertilizing materials more than double that formerly paid and farm help almost nil, it looks as tho we farmers would have to be careful how we launch forward during the coming spring. Even with our best thought and effort put into our business, we know that each pound of food produced is going to cost more to produce than ever before. Hence, save money on your fertilizers by buying early.

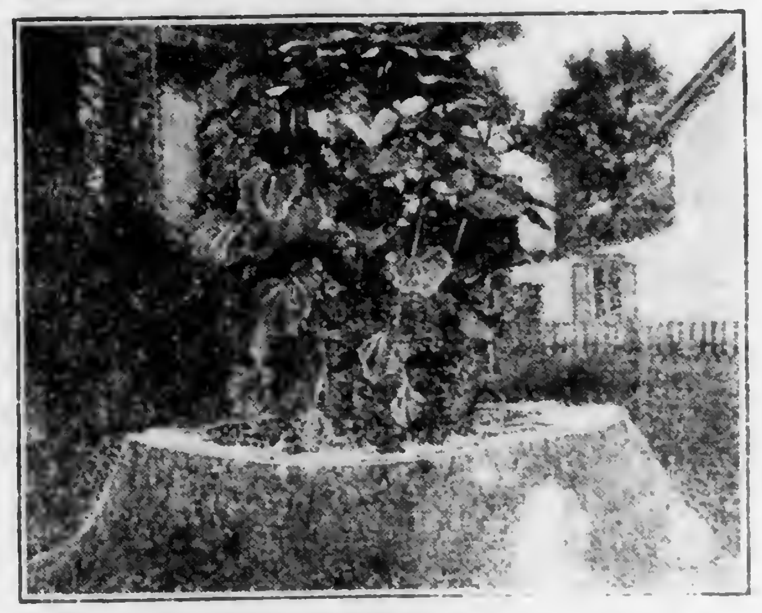
Maple Sugar Making on the Farm

Farmers, let those of us who have the resources help to win the war by making some sugar of our own. Where there are maple trees and where a few days can be spared during the muddy days of spring the work is easily accomplished and exceedingly enjoyable to those who find pleasure in woodcraft.

Maple sugar is highly concentrated, one pound being equal in sweetness and nutrition to three or four of commercial beet sugar. Maple sugar is in great demand for convalescents. Its wholesomeness is derived from a combination of mineral substances such as lime, potash, magnesia, and iron, along with vegetable acids. A barrel of maple sap when evaporated will yield from four to twelve or fifteen pounds of sugar. The first settlers learned how to evaporate the sap by watching the Indians. The primitive men chopped holes in the trees, drained the sap into hollowed logs, and used earthen vessels for heating it. This crude equipment was improved by using spouts in holes bored in the trees, and copper or iron kettles for evaporating. Later, tin buckets replaced hollowed logs known as sugar troughs. In the maple sugar districts of the northern states it is common to see a boy starting down across the meadow to the big woods with a sled loaded with kettles and buckets. He also has an axe and an auger, and somewhere there is possibly a bucket filled with bacon, eggs, and potatoes that he will cook in the open fire. You couldn't buy that boy out with a principality. If he has about three kettles to string on a long green pole and enough vessels to catch the sap at forty or fifty trees he will tell you he has a plant that will make him a month's salary equal to the School Ma'am's provided he doesn't donate the output to Dad for winter board. He knows just how to roll a big green log up against the kettles so the wind will not blow the blaze out from under them and how to throw some fat meat into the sap to keep it from boiling over. He boils down two or three kettles of sap in a day and then late at night goes up across the meadow whistling or listening to the "Who-o-o--who-who-whoo" of a distant owl. He is carrying home two or three gallons of syrup for his mother to sugar-off in a skillet or iron kettle on the stove. He takes it to her for finishing because she knows just how to drop an egg into the syrup to gather to the top, where it can be skimmed off, the particles of bark, ashes, etc. It is also a matter of care to not scorch the syrup when it becomes thick enough so that it will granulate when stirred with a spoon or ladle.

It is not a loss for any boy to make sugar in this way for a year or two but then he sort of outgrows the whole job. Uncle Sam down at Washington knows, so some day "Farmer's Bulletin No. 252" comes in the mail. If any boy interested in sugar making has not been remembered he should write to the U. S. Department of Agriculture, Bureau of Forestry, Washington, D. C., for the above bulletin.

The writer is acquainted with a number of boys who outgrew their first outfit. Now they have a rough board shed about 12x12 feet square, and an evaporator with a capacity of about a barrel an hour. One boy fires the furnace while the other winds thru the woods with a horse in a sled loaded with old milk cans or a barrel to be filled with sap. When it is necessary, the fire is kept up all night. The sap runs from the storage tank into one corner of the evaporating pan regulated by a float, and the syrup is run into gallon cans from the opposite corner.



Sun Flower Seed Found A Welcome in Heart of Stump.

If sugar instead of syrup is wanted, a special machine can be bought, or the syrup can be stirred by hand in an iron kettle or pan on a stove. After it becomes grainy it can be poured into any kind of mouds to harden.

The first cost of buckets, covers, and metal spiles made to fit together is soon returned. With them a small hole is bored in the wood of the tree, the buckets are hung up where they are safe and level, and the lids keep out rain, insects, and leaves. Buckets and lids should be painted on the outside. The first cost of this kind of equipment, including the evaporator, can be kept down to fifty cents per tree. A grate in the furnace enables the burning of either coal or wood. Tapping is usually done on the south side of the tree. The rough, loose bark should be scraped away and the hole bored not deeper than two inches. Some men of experience tap only one inch deep, as the sap flows almost entirely in the outer rings of tree growth.

A boy in a sugar camp never needs a watch. He tramps thru the woods, chops wood, breathes wood smoke and the aroma from the boiling sap until he is hungry, works as long again and still it is not meal time but a watch wouldn't keep him from eating. I know of boys almost four score years young who are still, and always will be, sugar campers. That is where their hearts are and a safe place for the heart of any boy is the sugar camp. Let us not overlook any kind of a camp that will make for efficiency in our land.—William J. Watts, Clearfield Co., Pa.

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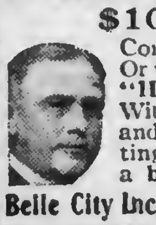

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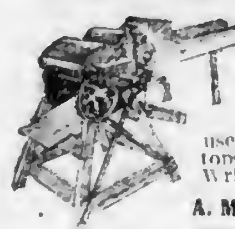

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Successful Incubator Operation

Some Important Points in Artificial Incubation

Location

A well ventilated cellar or basement makes the best place in which to operate an incubator and get the best results. It is much easier to maintain an even heat in the incubator and bring off a full hatch if the room temperature does not change suddenly, and a cellar is usually best for this reason. Some cellars are poorly ventilated. They are too deep in the ground, too damp or possibly too dry and conditions are far from being ideal for hatching. A clean room in any part of the house or in an out-building will be much better in this case. Choose a convenient place where the incubator will be undisturbed, where the sun will not shine on it at any time during the day, where the ventilation can be readily controlled and you may be sure you have the best location.

Temperature of Room

The ideal room temperature for the average incubator seems to be around 50 degrees. Many good incubators on the market will hatch successfully in a room where the temperature is down to freezing. A heated room is not advisable, except where the incubator temperature cannot be kept up without it in very cold weather, because heated air is usually dried out and not as pure as it should be when it enters the egg chamber. Correct ventilation, the right temperature and proper moisture conditions at various stages of a hatch are the three essential "mechanical" factors in incubation and the importance of selecting the best possible location for the incubator is to give most favorable conditions outside of the machine to control the air, the heat and the moisture within. If more attention were given to the proper location of the incubator, there would be fewer disappointments; more normal hatches in number of chicks produced and more husky chicks that could be raised to a profitable maturity.

The warmer the room temperature becomes as the hatching season advances, the more ventilation can be allowed in the room, but it should never be entirely shut off even in the coldest weather. Provision should be made, therefore, to adequately care for the room ventilation problem. It is of much more importance than most people think. A simple frame like a window screen, covered with coarse muslin, strong cheese cloth, or bran bagging set in the windows will allow fresh air to enter the room without making a draft on the incubator. In a room where several machines are operated and in deep cellars it is well to provide some means of ventilation that will care for the poor air which settles to the floor.

Setting Up

Being satisfied that the room ventilation is the best that you can provide, everything is in readiness for the incubator. A new machine should be carefully uncrated and assembled as directed in the printed instruction sheet which each manufacturer sends self with the function of each part. In position and in good condition, the machine should then be leveled carefully. A higher corner or high side will be hotter and even heat over all the eggs will not be possible. If necessary, block the incubator carefully so that it will stand firmly and not jar the eggs during the hatch. Some of the Mammoth incubators require a certain slight tip to the whole machine to meet the requirements of their hot water system, but directions are given in each case.

An experienced operator should carefully read the instructions for operating to thoroly familiarize himself with the function of each part. In fact, many incubator owners who claim experience would profit by re-reading manufacturers' instructions to avoid many of the abuses which are frequently practiced. The operation of modern incubators is comparatively simple and readily understood, and yet few are to be run just alike because of differing principles. To attempt detailed instructions here would be inadvisable but an outline of important features will not come amiss.

Adjusting

When starting the incubator, screw down the adjusting nut on the regulator to guard against overheating at the start and breaking the thermometer. If your thermometer is not new, or you doubt in the least that it is correct, test it with a clinic thermometer from 100 degrees to 105 degrees, and be sure to make allowances for any variations in regulating and running your machine.

Always wait before putting the eggs into the incubator until you are sure the regulation is correct. Once carefully adjusted before starting a hatch, very little attention to the regulator is required.

Too many make the common mistake of turning the adjusting nut up or down if there is a slight variation in temperature. Many of the most succesful operators never touch the regulator, except to test it between hatches to be sure that nothing has accidently dropped into a working joint or bearing to prevent the free action of the parts. If you find the temperature too high or too low, try to make the correction by turning the wick up or down in the case of lamp-heated incubators or making corresponding changes in the amount of fire where other kinds of heat are used.

Vigorous Well-Bred Stock Produce Good Hatching Eggs.

Care During Hatch

On lamp-heated incubators a new wick should be used with each hatch. If the oil-reservoir is of the ordinary type it should be filled daily and preferably in the afternoon so that that there will always be enough oil to last until morning. Never fill the lamp bowl entirely full. Expansion of the oil when warmed will make it overflow. All lamp fixtures should be wiped clean and dry daily. There will rarely be any trouble with ill-smelling or smoky lamps if the burner is kept perfectly clean each day. Start with a medium-sized fire or lamp flame, and make your adjustments with such. The heat control can then be more easily handled from the start to finish.

After the incubator has run at least 12 to 24 hours without any needed adjustments, it is ready for the eggs. When they are put in, the temperature will drop and not return to the prescribed heat for several hours while the eggs are warming up. More mistakes are made in changing adjustments on the regulator the first day than at any other time. Later we shall go into greater detail about eggs and what takes place in incubation, but be it said now that the first week of the hatch is really the most critical period in the whole process, and greater care is advisable then than at any other particular time. Do not be alarmed if the temperature should vary a degree, or even two, either way from time to time. If the average temperature is maintained, results will be quite as good as tho the thermometer showed no variation whatever. In fact, some experienced men prefer slight variations.

Turning and Cooling

Never open the door to cool or turn the eggs until the third or fourth day. From then on until about the eighteenth day the eggs should be turned at least twice daily. The length of cooling depends upon the room temperature, the period of the hatch and the condition of the eggs Attention to instructions and close observation will add to your experience all that is necessary to become quite expert in handling the cooling operation.

Moisture

A fertile egg will be warmer than an infertile one after the first week or so. If the thermometer is on or near an infertile or dead germ egg, it will not register correctly. This is one reason why testing the eggs is generally advised once or twice during the hatch to remove those which do not contain a live chick embryo. There are many differences of opinion on the moisture needed during the hatch. Some machines require more moisture than others, and some hatch successfully without added moisture under average conditions. It is safe to say that more poor hatches result from unsufficient moisture than from too much. In many cases the best and easiest way to supply moisture is to keep the floor of the room well sprinkled, thus allowing the air to become more moist before it enters the egg chamber. It is seldom possible to get too much moisture when this practice is followed. When it is not practical to wet the floor, pails or pans of water may be set near the machine, the eggs may be sprinkled with warm water, or a shallow pan of water may be set into the incubator beneath the egg tray. The necessity for moisture is not to add water to the eggs, but to prevent too rapid evaporation of their normal water content. At the end of the first nine or ten days, the eggs should not dry normally down so that the air cell in the large end of the egg is bigger than the size of a silver quarter dollar. This can be determined by testing the eggs.

Ventilation

The varying types of incubators, each with their different ventilation systems, prevent any discussion of this feature. Experts have worked it out for each kind on the market and manufacturers' instructions are usually explicit. The growing chick needs much less "fresh air" during the first half of incubation than the last half. After the tenth or eleventh day the amount of ventilation can be increased gradually, but quite rapidly, until the last of the hatch.

The Hatch

Do not be in too big a hurry to remove chicks from the incubator. Let the hatch finish off and the last chicks dry before opening the door. If your incubator has a nursery tray, it is best to test it before the chicks hatch. In very cold weather the drop in temperature from the egg tray to the nursery is too much and chicks will be chilled if the nursery is used unless it is raised.

If during the hatch you should have an accident—the lamp go out and the temperature drop, or something happen so that the eggs are overheated, or should you have left them out to cool too long, do not throw away your eggs until you are convinced that you cannot get a hatch. Many good hatches have come in spite of these accidents and it is foolish to count your losses too quickly! This does not mean that the best results can be obtained without thoughtful attention to the simple care of your artificial hatcher. Three important factors govern the success of hatching: The Hatcher, The Eggs, and The Operator. Do your part!

BREED CHARACTERISTICS

The Egg Breeds

The breeds of the laying class, with the exception of the Minorca, are relatively small, very energetic and lively, mature early and are easily kept in good laying condition. The Minorca is of larger size and modified somewhat in the other particulars mentioned, yet has more the character of the laying class than of any other.

Meat Breeds

In the meat breeds there is not the same uniformity of type that is found in the laying breeds. The Brahma is most popular because it is at the same time the largest and the most rugged in constitution. The Dorking excels in quality of meat but is generally considered somewhat lacking in hardiness. The Cornish is rather hard-meated but being very short-feathered has its special place as a large meat-producing fowl in southerly sections where the more heavily feathered Brahma does not stand the summers well.

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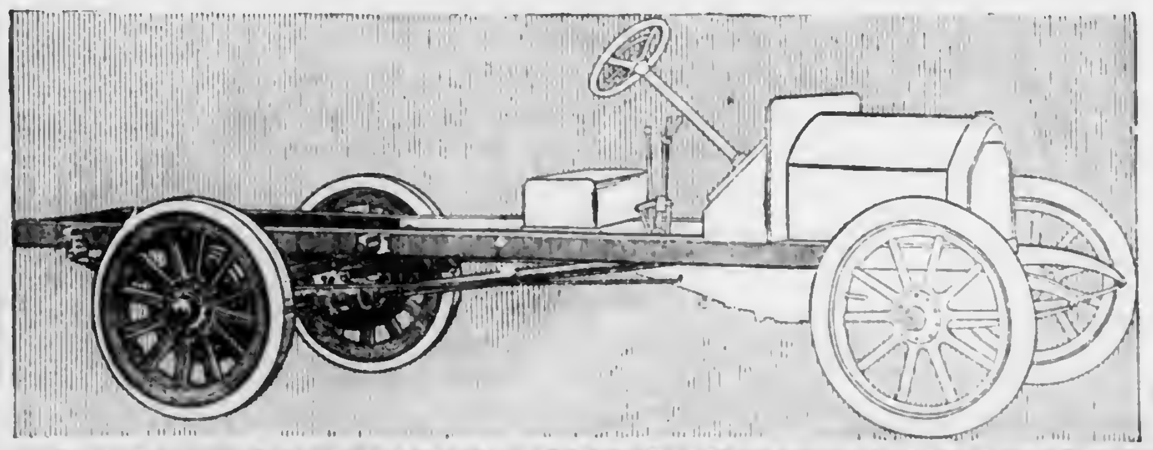

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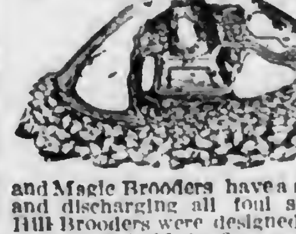

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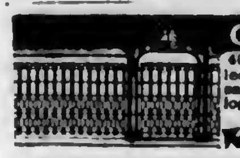

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PHILADELPHIA, PA., JANUARY 26, 1918.

CURTAILED MARKETS

Because of the Fuel Administrator's order closing all business on Mondays for the next ten weeks it will be necessary for us to drop many of our regular market reports. Our reports are taken from the Monday markets, as these furnish the best index to the markets of the week. With no markets on Monday, it would be necessary to go back to those of the previous Saturday, which would be of little use to our readers. Until business gets back to normal we can publish reports on only such markets as are not affected by the fuel order.

* * *

Seed Corn

Farmers in many sections of the East will be confronted with a serious problem in securing good seed corn next spring. The early frosts destroyed the crop before maturity in large areas last fall, and in those sections there is practically no corn fit for seed. Satisfactory seed corn cannot be imported from long distances. Seed must be acclimated to give even fair returns the first year, whether moved North or South. Those sections having no need of their own must look for their supply as near home as possible, or to sections in which soil and climatic conditions are as nearly like home conditions as possible. Do not wait until too late before getting your supply. Get it early and store it well to make sure of its vitality when needed. If you are in one of the favored localities and have a supply of corn fit for seed, investigate the seed market before selling. Good seed corn is certain to bring a premium on the market in the spring. Your county agent should be able to find a market for you.

* * *

Unbecoming Official Tactics

One naturally questions the boasted patriotism of some men in high places, when, in spite of high-sounding phrases, they take advantage of official opportunity to display men. The methods shown by some of the investigating committees indicate the spirit to be more personal and partisan than patriotic. While many may be disappointed in their expectations as to the effects of the work of the food control administration, there is nothing in its endeavors that warrants the unmanly attacks of Senator Reed upon Herbert Hoover. The history and integrity of the food administrator are recognized by the people to be sincere, and while prices may not have fallen as some expected there is no doubt but what the activities of profiteers and food gamblers have been curbed and that prices are lower and more stable than they would have been without his work. The sinister motives of his detractors will react upon their own heads.

* * *

Another Hand-Picked Governor?

Again we read that the political leaders are trying to decide among themselves who shall be the nominees for governor of Pennsylvania. Such news is a burlesque upon the intelligence of the people, especially at a time when every one is called upon to make extreme sacrifices in the cause of democracy. The chief qualification mentioned by the bosses is "acceptability", meaning that the selected man shall be able to unite the factions of the party. At least one of those mentioned attempts to qualify by straddling the big questions before the people and says that so far as the suffrage and prohibitary amendments are concerned he will not be called upon to act, since a governor's signature is not required upon ratification by bills. That's not the kind of man the people are looking for in a governor, but as long as they put up with hand-picked candidates and permit a handful of professional politicians to say who shall be the nominees when they have it in their power to be real citizens, the "dear public" deserves just what it gets.

* * *

Sale of Nitrate

The Federal Department of Agriculture has just announced plan of distribution of the 100,000 tons of nitrate of soda purchased for use of farmers. This material will be sold direct. Farmers are requested to place order with their county agents together with cash at the rate of $75.50 per ton plus freight from seaport. These orders will be received by special shipping agents appointed by the Department and the goods will be consigned to the county agent and the local committee appointed by him. If more orders are received than can be taken care of, all orders will be pro-rated as the supply will permit. Blanks for filing of orders will be provided by the county agents. Where there are no county agents, farmers are requested to make application to the state director of extension of his state. Orders must be filed with these officials not later than February 4, so there is little time to lose.

This is the first effort of this kind to supply materials direct to consumers by a government department. The experiment will be watched with interest. Every precaution will be taken to have the goods get to farmers only. Any violation of this provision should be promptly reported. Farmers of the northern states will question the justice of the order sending the shipments to southern ports only. The Department announces that shipments will be made to Charleston, S. C., Wilmington, N. C., Savannah, Ga., Norfolk, Va., and Baltimore, Md. The latter is the most northern port, and as the farmers must pay freight from the port of entry, the northern farmers must bear the additional expense. A part of the shipment coming to Philadelphia, New York, or Boston would have equalized the price to all farmers.

* * *

Farmer and Labor Alliance

A recent conference between representatives of the Pennsylvania Federation of Labor and the Pennsylvania State Grange resulted in plans for at least a temporary alliance of these two bodies. A declaration of principles and recommendations was adopted, as reported on page 30 of last week's issue. A joint committee has been appointed to prepare a tentative working agreement between the two bodies and to prepare a plan for the supply of agricultural products direct from the farmer to the consumer. It is understood that this committee will meet early in February at which time a report of further plans may be expected.

An alliance between the grange and the labor unions appears like a radical departure from past standards of both bodies. But when it is considered that the grange is the largest and most representative organization of farm producers and the federation of labor unions is the most representative organization of consumers, the basis for alliance is readily recognized. There are points upon which these two bodies have differed in the past and there would appear to be some upon which they will have trouble to unite in the future. But on the great question of marketing of food supplies, their interests are the same.

Both producers and consumers have suffered and are suffering from a system of marketing that is conceded to be wasteful and expensive. The farmers have long sought a remedy but their efforts have been in vain largely because of a lack of sympathetic and intelligent co-operation of the city consumers. The first purpose of the alliance, according to announcement, is to develop such co-operation. The plan of operation is yet to be determined by the joint committee, but it is probable that an effort will be made to correct evils in the present marketing machinery and adapt that machinery to the economic needs of the two most interested classes. The increasing cost of food supplies in the cities without a commensurate return to the farmers to encourage production creates a condition that must be remedied soon. An early remedy is more likely to result if the two most interested classes apply themselves to its development than if left to hoped-for legislation.

It is intimated in some quarters that such an alliance may have a dangerous political influence. So long as the alliance applies itself to the local field there is little to fear and much to hope for.

* * *

Income Tax

The lowering of the incomes subject to income tax this year will bring many farmers within the provisions of that law. Every unmarried person having a net income of $1,000 or more, and every married person having a net income of $2,000 or more in 1917 is subject to tax. There are certain exceptions named in the law, but anyone having incomes as defined must report to the Collector of Internal Revenue of his district before March 1, 1918, under penalty of fine. The exceptions for farmers are rather numerous and complicated, but blanks will be furnished by the Collector which will enable every farmer to file report. These reports must be made before the date named. Penalties are severe and no one can afford to be negligent. Agents of the Internal Revenue department will be in every agricultural county at some time during January, February and March, and blanks and full information may be secured from such agent. Ask your postmaster or your banker where and when the agent is coming and have your record of receipts ready.

* * *

Next Back-to-the-Farm Movement

It will be remembered that during the years just preceding the war we read a great deal about an alleged back-to-the-farm movement. We have no statistics showing the number of people who actually gave up other work to become farmers, but the unrest in the cities, the rising cost of living and growing shortage of some foodstuffs indicated the need of increased production and reduced consumption. It is safe to say, however, that comparatively few people went to the country and became sure-enough farmers. The transition is hard to make and the number of successes is few.

The gravest concern now is, will the countless thousands who have left the farm since the war began go back after it is over? The army has drawn thousands from the farms. Many of these will not—can not—go back at the close. Still others will, in all probability, be incapacitated. But more than these will be the number of men who have entered other lines of production for greater wage—shipping, ship-building, manufacturing, etc. We may reasonably expect that a great many of these will remain away to continue their newly-learned trade or profession.

The movement has all been in one direction—away from the farm. All will not go back. The proportionate number of farmers will be thus still further reduced while the number of consumers is increased. Will the industrial activities be great enough to maintain such a condition in prosperity, and will the farms be manned sufficiently to produce the necessary food supply? Because of this shifting it is safe to prophesy that wages will go down while the price of farm products will remain high. We say this in no exultant spirit, but simply state the results of the workings of the law of cause and effect. At that time it will be still more necessary (and may we say more possible?) for the producers and consumers to co-operate in the business of food distribution by eliminating circuitous and costly systems.

NEW YORK LETTER

State College on War Basis.—Residents of the state will be given free training in operating tractors at Cornell College of Agriculture from February 18 to March 9. Early enrollment is advised as the class will be limited to 24 in number. Testimony of practical farmers shows that special knowledge of this kind is necessary for best results with tractors. Two lectures a day will be given followed by 3-hour practice periods spent in either shop or field, with evening sessions for study, reciting, etc.

Seed Corn Injured.—Cayuga County's farm agent finds that the germinating qualities of the home-grown seed corn have been seriously injured by the extreme cold, as the corn had a high moisture content, owing to the late season with most of the corn stored out of doors. Immediate tests for germinating ability is advised and proper curing and careful indoor storing in a dry warm place is urged for future uses. It is reported that there is an abundance of high-testing seed corn to be had in Long Island and Pennsylvania and the federal authorities have promised help in distributing seed as needed, if application is made promptly.

Farmers' Week at Ithaca.—Farmers' Week at the State College begins February 11. The keynote of the meeting is the war situation as it affects the farmer. The college aims to emphasize the point that farming is as essential as "arming". The main features of the program will deal with the labor situation, the raising of more and better legumes, seed selection, and help in getting good seed, dairy improvement thru feeding and selection, and the betterment of poultry thru breeding and feeding. Every one within a day's journey of the college should avail themselves of this excellent service if at all interested in crop production or animal husbandry.

Would Force Women to Wear Overalls.—The State Industrial Commission recommends the compulsory wearing of overalls by women workers in factories, or the forfeiture of compensation if injuries are received. Proper covering of the hair by such workers was also recommended as necessary to safety in machine work. The state labor law may be amended to meet this requirement.

To License Relief Solicitors.—To prevent misapplication of funds, a bill is to be introduced at Albany for the licensing of all war relief solicitors. It would make soliciting without a license a misdemeanor punishable by $1,000 fine, imprisonment of 3 years or both.

Dairymen's League Enters Pleas.—Five of the indicted members of the Dairymen's League are held in $1,000 bail each and have entered pleas of not guilty to the charge of conspiracy to control milk prices. Two members have not yet appeared: H. J. Culver, of Amenia, N. Y., and H. J. Kershaw, of Sherburne, directors. The indicted officers include R. D. Cooper, President; F. H. Thompson, Vice-President; Albert Manning, Secretary; Louis M. Hardin, treasurer, and J. E. Miller, member of executive committee. The district attorney of New York alleges that the League spent $40,000 in field work in trying to corner the milk supply and makes much of the League's resisting the efforts of the milk dealers to destroy the League.

Milk Companies Sold.—The Borden Condensed Milk Company is buying several smaller companies who have felt the stress of present conditions, a recent purchase being the Rushmore Milk Company of Brooklyn.

Pea Seed Expensive.—Pea growers of the western section of the state are obliged to pay $12 a bushel for next year's seed. The same seed could have been bought early for $5.50. Last year's seed cost $4 per bushel.

Boys of State to Form Regiments.—Ninteen regiments including over 25,000 boys under 18 years of age are to be formed at once thruout the state in compliance with the new military training law. Cadet commissioned and non-commissioned officers will be appointed. Training quarters have been arranged for in most of the large cities of the state and training has been under way for several weeks.

Separate Highways for Horses and Autos.—The State Association of Horsemen in annual session at Syracuse demand a separate construction for the use of horse-drawn vehicles for the safety of both horse owners and motor drivers. The State Grange and other agricultural organizations have long recommended this as the hard smooth surface of the present modern roads is highly unsafe.

Unemployed Males.—Assemblyman Martin, of Oneida, is to introduce a bill at Albany patterned on a bill in successful operation in Maryland. It calls for the registering by the county clerk of each county of all unemployed males of the county, the list to be certified by the Governor who will send such men to other sections of the state to be employed as conditions demand.

Sidetracked Live Stock Frozen.—One hundred forty-three dead hogs were taken from a sidetracked live stock train in Corning during the recent severe weather, and others were eating their fellows and had to be released. Such cruelty and loss of valuable food cannot be too strongly condemned, and stringent legislation covering the ground should be passed at once.—F.

NEW JERSEY FARM NOTES

Experiment Station Report. — The annual report of Dr. Jacob G. Lipman, Director of the State Agricultural Experiment Station, has just been published. Regarding the research activities, particular mention is made of the following: Preparation of available phosphate by means of composting raw rock phosphate with sulphur; a study of methods of making available the potash in greensand marl; fertilizer experiments with potatoes; variety studies of soybeans; experiments on soil improvement by means of legumes and other green manure crops; the fertilization of fruit trees; the control of insects injurious to vegetables, fruit, potatoes and other food crops; the study of tomato production in co-operation with the Joseph Campbell Soup Company; feeding experiments with dairy cows and swine; the control of hog cholera; feeding and breeding experiments with poultry; the introduction of improved varieties of corn and small grains; the development of new types of peaches by crossing and selection, and numerous other problems of immediate or more remote importance.

Legislative.—A plea for the elimination of partisanship in the work of the present session of the legislature has been made by Governor Edge in a special message to the lawmakers. He says there should be neither a majority nor a minority, but an "American Majority", which should control the activities of this war session. The first of the administration bills to pass were two relating to the war. One of the measures exempts New Jersey soldiers and sailors from poll tax and in the figuring up of their personal property for the purposes of taxation the sum of $500 is to be deducted from the total amount on which the tax is based. Another bill established the various Home Guard organizations of the state as a state militia reserve.

For Enforced Employment. — Speaker of the House Wolverton has introduced a drastic war measure which provides that every man between the ages of 18 and 50 must be constantly engaged in some occupation for at least 36 hours a week. A fine of $100 or three months imprisonment is the penalty for violating this proposed statute. The provisions of the bill are to become effective whenever the Governor determines such employment to be necessary and essential for the protection and welfare of the state and United States. The Department of Labor is charged with the duty of providing employment for those not occupied. Other new measures provide for a State Constabulary; public defenders in counties of the state for those unable to employ lawyers; enlarging the Public Utility Commission from three to five members; providing for school teachers on election boards and use of schools as polling places; enabling married women, whose husbands are at war, to be employed as school teachers, if they are trained for this work and formerly pursued it.

The Delaware Bridge.—During the past week the House Judiciary Committee gave hearings on the three bills which have been introduced designed to launch the projects of a bridge across the Delaware River connecting Camden with Philadelphia and vehicular tunnel under the Hudson linking Jersey City with New York City. A commission of eight members is proposed to supervise the plans and another direct state tax of one mill on the dollar on all real and personal property in the state is to be levied to pay New Jersey shares of the cost, about $12,000,000.

A Farm Census.—The State Board of Education has approved the plans of the State Commissioner of Education Kendall to carry out the request of the Federal agricultural authorities looking toward a census in New Jersey of farm crops and labor. This work has been done in thirty-six states by the older boys of the schools and Dr. Kendall hopes to have it carried out in the same way in New Jersey, if he can obtain the money for the necessary expenses.

Must Pasteurize Milk.—The State Department of Health wants to be notified by any person or firm which has discontinued pasteurizing milk or cream because of the scarcity of coal. The department says certain creamerymen in the state have stopped altogether, and certain others have failed to heat milk or cream to a temperature of 142 or to 145 degrees Fahrenheit and in other ways not complied with the regulations for pasteurization.—L.

TO DEAL WITH FARM PROBLEMS

To co-operate effectively in the farm labor problem with the U. S. Department of Labor, state councils of defense, state commissioners of agriculture and labor, and other official state and local agencies, the Department of Agriculture has divided the country into four farm labor divisions: (1) New England and Northeastern states, (2) Southern states, (3) Northern Central states, and (4) Western states.

The farmer in need of labor is advised to proceed as follows: He should report his need to his county agent or to a member of the community farm help committee. If possible, his need will be supplied from lists of men available in the county. If local labor is inadequate, the county agent or committee will report to the state farm labor specialist, who, in co-operation with the state officials, will draw on the nearest available labor within the state.

A farmer who does not know the name of his county agent or those on the community committee should make known his need to his state farm specialist, as follows:

Delaware and Maryland, W. M. Hillegeist, 506 Stewart Bldg., Baltimore. New Jersey, Frank App, Agricultural College, New Brunswick. New York, J. W. Robson, Agricultural College, Ithaca. Pennsylvania, R. W. Meyer, Seventh Floor, Finance Bldg, Philadelphia.

CORNELL TRACTOR SCHOOL

Residents of New York State who will be actually concerned with the care and operation of farm tractors or trucks during the coming season will be given a course of training at the New York State College of Agriculture for three weeks from February 18 to March 9, 1918. The college advises early enrollment since the number will be limited to 24. For full particulars, address Department of Rural Engineering, Ithaca, N. Y.

FARMERS' WEEK AT CORNELL

Farmers' Week at Cornell this year comes February 11 to 16, inclusive. The key note of the meeting is the war situation as it affects the farmer. The program will have as its main features the handling of the labor situation, the raising of more and better legumes, seed selection and help in getting good seed, dairy improvement thru feeding and selection, betterment of poultry thru breeding and feeding, control of plant diseases and insect enemies, drainage problems which offer opportunities for immediate solution, etc.

POTATO ORGANIZATION

A Lehigh County, Pa., Potato Growers' Association has been formed for the purpose of standardizing varieties and grades of potatoes. To localize the work, local branches will be organized in various sections thruout the potato belt. Considerable freeze damage which lowers the available potato output, also danger of frosted and defective seed, with shortage of skilled farm labor indicates that the production cannot be increased.—P. S. Fenstermacher.

NEW JERSEY FARMERS' INSTITUTES

Most of the New Jersey farmers' institutes this season were held during the months of November, December and January. Only three are scheduled for February. The extension division of the State Agricultural College recently announced that the following would be held: Thursday, February 7, New Monmouth, Monmouth County; Friday, February 8, Woodstown, Salem County; Saturday, February 9, Salem, Salem County.

PENNSYLVANIA FARMERS' INSTITUTES

First Section.—York County, Fawn Grove, Jan. 28-29; New Freedom, Jan. 30-31; Dover, Feb. 1-2; Hellam, Feb. 1-2. Speakers, Wm. M. Patton, L. W. Lighty, Paul R. Guldin and J. L. King.

Second Section.—Somerset County, Meyersdale, Jan. 28-29; Somerset, Jan. 30-31; Davidsville, Feb. 1-2. Speakers, J. Stuart Group, E. L. Phillips and F. H. Fassett.

Third Section. — Clarion County, Rimersburg, Jan. 28-29; Limestone, Jan. 30-31; Fryburg, Feb. 1-2. Speakers, Sheldon W. Funk, J. Aldus Herr and Robert S. Seeds.

Fourth Section. — Tioga County, Elkland, Jan. 28-29; Nelson, Jan. 30-31; Mitchell's Mills, Feb. 1-2. Speakers, J. T. Campbell, Dr. John N. Rosenberger and Carl B. Thomas.

Fifth Section.—Wyoming County, Tunkhannock, Jan. 29-30; Old Grove Church, Jan. 31, Feb. 1-2. Speakers, D. H. Watts, Theo. W. Mittman, H. E. Chace and Eugenia G. Benn.

To help save wool for soldiers' uniforms every effort should be made this year to make new clothes from old.

FARM MEETING CALENDAR

New York State Grange, Syracuse, N. Y., Feb. 5-8.
New York Farmers' Week, Ithaca, N. Y., Feb. 11-16.
New York State Potato Association, Ithaca, N. Y., Feb. 12-13.

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Getting Most From the Dairy

How Records Helped in Building up the Herd

By HUGH FERGUS, BUTLER CO., PA.

As I explained in the two previous articles that appeared in this paper and in my article last week, we were fortunate in being able to buy the most and best part of our dairy herd from one man. Two valuable lessons were impressed on me from dealing with this man. One was the fact that he kept records of his herd along the line of production for each individual, which has resulted in his having one of the best grade herds of cows in this section. Another good feature about this man was the fact that before selling a cow he told all the facts he knew about the cow before he sold her. I learned this to my sorrow in the case of one cow, Blanche, whose record for a part of a year appears in the table. He told me that this cow was no good. I questioned his judgment in my mind and thought she was a good cow, or at least gave promise of being one, so I bought her. I kept her eight months and found he had told me the truth, so she went to the butcher.

Billy White—Purebred Guernsey Bull

Probably the most profitable thing we have done since we came here has been in the weighing of the milk of each cow daily, testing a sample of it once a month, and keeping a complete record of the value of the product, cost of feed and profit or loss. Until this summer, when we joined a cow-testing association, we did all the bookkeeping ourselves. Below is a complete record of each cow we owned our first year:

Name of Cow	Months in Test	Lbs. Milk	Test	Value of Product	Cost of Feed	Profit
Lady	12	8,185	3.8	$123.67	$67.71	$55.96
Jessie	12	3,762	6.2	101.55	60.19	41.36
Alice	12	5,250	5.4	123.14	65.80	57.34
Bess	12	3,847	5.7	63.26	44.63	18.63
Beauty	12	5,486	5.2	119.40	60.61	58.89
Roany	3	2,924	3.4	35.48	13.32	19.22
Goldie	12	6,826	4.6	128.41	65.98	62.33
Star	12	5,084	4.8	101.24	61.17	40.07
Daisy	12	5,740	5.5	133.65	69.22	64.43
Stella	12	4,688	5.7	108.82	62.62	46.20
Bess	12	3.847	5.7	93.84	55.56	38.28
Reddy	10	4,065	4.6	71.46	47.84	23.62
Flossie	9	3,166	5.2	63.67	47.64	16.03
Sue	9	2,275	4.7	44.17	42.20	1.97
Spot	9	3,994	4.6	74.05	46.29	27.76
Julia	5	1,791	5.3	36.00	21.98	14.01
Blanche	8	2,429	5.2	55.03	40.99	14.04
Betty	7	3,198	5.2	75.02	43.06	31.96
Dot	7	2,198	6.4	62.81	39.30	23.51
Lucy	7	2,572	5.1	57.56	41.07	16.49
Average per cow		5,016	4.98	$103.44	$62.29	$37.30

Under the "steer feeding method" of keeping them where they got all the exercise they wanted and I believe with no better care otherwise the cows I bought on their records, with one or two exceptions produced anywhere from 500 to 1,500 pounds more of milk than they had given for their former owner who kept them tied during the winter months.

From our experience in weighing the milk daily and in the testing of the cows many valuable lessons were learned, also dollars returned for the weighing. Probably the most important lesson was the feeding. By the use of the scales one can tell a whole lot quicker when a cow is off feed, shrinking in her milk, is getting too much or too little feed for the amount of her milk and in innumerable other ways that pay for the weighing. One little thing happened during the first part of this year that paid for the scales and a lot of the "little extra" time spent in weighing. Each month when the creamery gives us our cream check, instead of showing the amount of milk we were credited with daily they showed only the monthly total. One month this seemed to me much too small as compared with what our milk sheet showed. So I took my sheet to the manager of the creamery and in going over their sheet used in the receiving room found that the weigher had neglected to mark down the milk for one day. The manager rectified the mistake which amounted to over nine dollars.

Another thing the sheet showed was the value of spraying the cows during the fly season both summers.

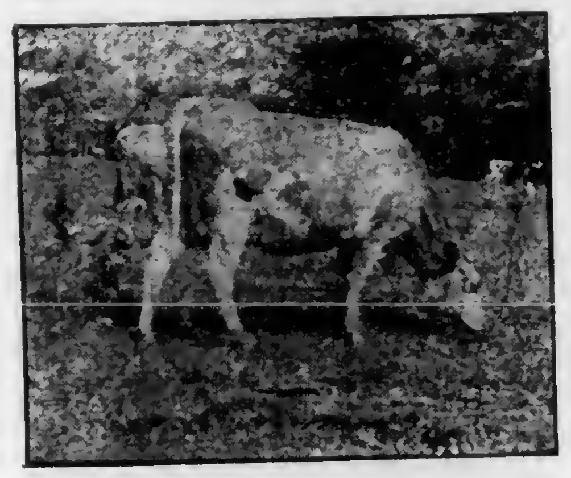
Daisy—Better Than She Looks

On days I happened to miss spraying, the cows would have to fight flies that day with the result that in the evening the herd would show a shrinkage of about 25 pounds. In the spring I noticed too that there would be only a very few warbles on the backs of the herd.

How Records Help

Besides, of course, helping to find the number of pounds of butterfat produced by a cow, the testing is also an aid in feeding. This is a point I think is often overlooked in market milk sections where they say a cow-testing association will do them no good for they care nothing about the test. Take the case of individuals in our own herd. Jessie and Dot are both young cows and about the fattest cows in the herd. If one were to look at the milk and judge it by looks alone, it does not look as rich as several of the other cows in our herd. So if I did not know their tests the chances are that they would either have been sold long ago or else have been fed the same grain ration for milk produced as other cows in the herd, when because of their high test they actually need more.

Another case where testing showed me where I was badly fooled was on a cow: One day in May I was in a neighbor's barn to see a fresh cow he had recently bought. This cow (Grace) being a grade Guernsey (and I a Guernsey enthusiast) made me think her about one of the nicest looking cows I had ever seen. I asked him if he wanted to sell her. He said he did not; but I persisted until he finally said that if I wanted her I would have to pay $90 for her. I bought her and thought I was getting such a good cow that I took her picture as soon as I got her home and thought I could use her picture in this article as an example of one of my best cows instead of as an example of a poor one. She did not disappoint me in the amount of milk she started to give which was over 40 pounds daily. It looked so yellow and rich that I told my wife that I thought it would test at least five percent, and I thought I was conservative in saying that. After she had been fresh ten days I tested her and she tested 3.2 percent. That was quite a disappointment but I consoled myself with the thought that she might be a little "off" for that one day only. The next month she tested 3.3 percent and other months she remained the same low tester. One month she even went down to 2.3 percent but always kept the rich looking color. Six months after she came fresh she was giving less than a gallon a day of that "adulterated lime water" so I sold her to the butcher for $30 and was glad to get rid of her for that.



Margaret-Purebred Guernsey Heifer

Just a little further about the cows to show that after all the record is the only real way in which to tell the worth of a cow. Lady was the first cow we bought when we came here. I bought her and her calf for $65 when she was fresh, from a man who did not believe in heavy feeding. The cow was so weak from lack of nourishment that she could hardly stand, and if I had not been a little green at cow buying then I would not have taken her at all. As it was, after I had her a month I tried to sell her for $60 and spent fifty cents for an advertisement in two different papers. No one came to buy so I kept her and her record shows what she did. With a better start she is doing a lot better this lactation period and will give close to 10,000 pounds of milk.

I bought Daisy, my best cow, the same day, at the same price, and from the same man from whom I bought Bess. I bought three others in addition and Daisy was the last one of the five bought, and it was only because her owner did not know the date of freshening of another cow that we took Daisy instead. My judgment in this case I have found since was not so bad, for every time we have a visitor to our farm we ask him to guess on the best cow for butterfat and never yet was Dairy picked first and she did well if she was picked after five or six guesses. Some of these men are good cow judges, too, for among them are Professor Rasmussen, of State College; Mr. Rawl, chief of the U. S. Dairy Division; Mr. Rabild, who has charge of all dairy farming extension work with the U. S. Dairy Division; and Professor Washburn, of the University of Minnesota. I hope these men, if they see this, will pardon the use of their names but I think it well illustrates the point that no man can tell his best from his worst cows until he has a record of them.

Thanks more to our record work than anything else, we have been among the patrons receiving the ten highest checks at our creamery every month since we came here, and three of those eighteen times we have received the highest check. From present indications, too, our average production per cow will be over 50 pounds of butterfat more per cow for our second year than for our first.

Starting Purebreds

When we came here we bought two purebred Guernsey heifers and a bull calf. This spring, since we were having no bad luck and were getting along well, we decided to get two more for we think the sooner we get a purebred herd the quicker we will pay for our farm. First I went to the bank to see whether I could get the money and on being

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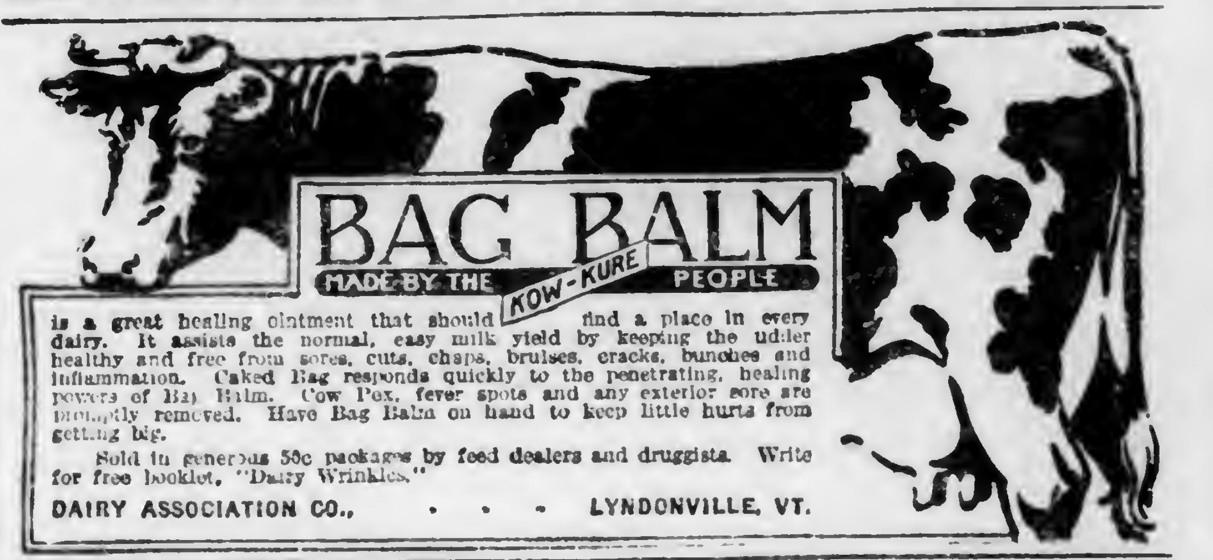

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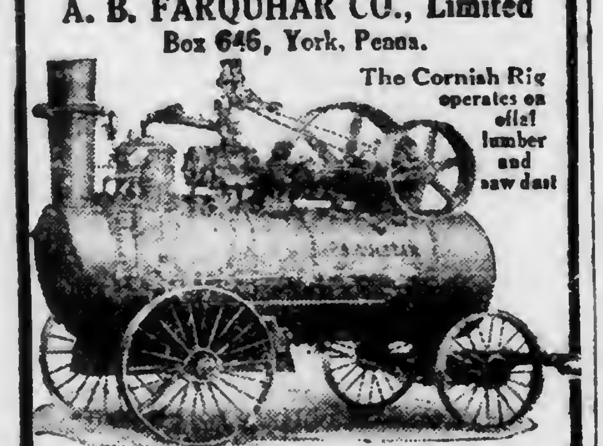
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assured I could, I bought two more heifers. One is a full sister to "Margaret", my oldest heifer, and the other a three-fourths sister to her. To add to our cup of purebred joy, Margaret came fresh in September and dropped a heifer calf and since I started this article, two weeks ago, Rose, my other heifer purchased last year, dropped another heifer so we now have six females. We considered ourselves all the more fortunate over Margaret's calf, for out of 15 calves born previous to this one sired by the same bull, 12 were bulls. From their production thus far I do not believe we will have to sell either of these heifers for "boarders", for during her first full month Margaret produced 31 pounds of butterfat and Rose promises to do equally as well.

Summary

These articles have been rather lengthy ones, giving our experiences in buying and planning our farm and our later experiences in our farm activities thus far, but I have tried to show a lot of our mistakes and a few of the things we have learned from experience with the hope that they may be of value to others who, like ourselves, are limited financially.

It is not likely that another article from me will appear giving our further experiences unless there is a demand for it, or unless the editor of this paper thinks best. So a summary of our experiences might not be out of place: 1. Buy as good a farm as you can find that is not in the class known as "run down". 2. Whatever the line of farming you are going to follow, be sure of a good market for your cash products. 3. If going into the livestock farming, get the best stock possible. 4. In making your first payment on your farm, do not use too much of your capital but keep enough for your stock and the machinery and tools you are sure to need. 5. If moving into a section new to you, it is well to use the varieties of farm crops that are already doing well in that section.

From The Milk Field

Organization Notes and Comments

Milk Prices in Different Centers

The January price of milk in the Pittsburgh section has been set by the Federal Food Administration at $3.40 per cwt. for 3.5 percent milk. This is 20 cents below the price established in the Philadelphia market, the difference being reported due to local conditions. The Cleveland market is reported somewhat lower than the Pittsburgh price. In the Baltimore market the farmers are to receive a price of 35 cents per gallon as the base, with variations according to test. It will be difficult to account for the variations in these prices in the different locations. It is presumed that the officials in charge found differences in local conditions upon which price differences were based.

Organization Work

The Inter-State Milk Producers' Association is pressing its organization work. Vice-President Allebach recently organized new locals in Juniata, Blair and Huntingdon counties. There is increasing interest in all new territory and the prospects are most favorable for the future.

In The New York Field

Out on the dairy farms of New York and other states where milk starts on its mysterious route to the dweller in the metropolis, the "pot is still boiling" in a most energetic fashion. The reason we had a reduced price for milk in December was because the federal food administration asked it. They asked it because a few dealers said they would advance the retail price if it was not done. We donated a million dollars or so at the behest of the food administration. Did those poor people in the cities, and the government which supplies dairy products to its soldiers and to the allies get it or did the dealers put it aside for a "rainy" day?

Closed Stations

Let us glance back into October a moment. The dealers said there was a surplus of milk and there was. They closed some of their ordinary plants, and in some cases they selected those where the farmers were badly injured thereby. In several such cases the farmers formed associations, subscribed stock and pledged themselves not to again patronize the company that had brought them into trouble. At the same time they were mindful of possible and even probable waste from such action, and being adverse to waste they offered to buy the local plant from the dealer instead of building new. There has been such a case not far from my home and I have been told of several others. In all cases that have come to my notice the dealers have sold rather than to lose outright the value of their property.

The situation is encouraging, but it is fraught with danger. The farmers are not accustomed to handling their new plants and they are liable to make errors in doing so. If they do, the question comes up as to whether the dealer may not get his plant back again after a little time.

Cause of Surplus Milk

The cause of this surplus has not been ventilated greatly until quite recently, and may not be yet to any considerable extent. My information seems to be authentic, that as the dairymen suspected in September, the dealers planned an extensive "strike" or "hold-up" to begin October first. They had an enormous amount of condensed and evaporated milk, cream and even whole milk on hand and in cold storage at that date. It is estimated that the amount was supposed to be sufficient to carry them thru 30 days with what they might be able to pick up during the month. With German efficiency and "cussedness", they had arrangements made which they believed would enable them to tire out the dairymen and smash the Dairymen's League. It was this accumulation of stock that made the surplus in October according to present information. The reason the program was not carried out, so it is stated, is the fact that the federal food administraion refused to permit it.

If this story is true, then dairymen have the food administration to thank. Let us hope that the administration thru its future commission rulings will be fair with us and make it possible for dairy farmers to continue to feed the public.—H. H. L.

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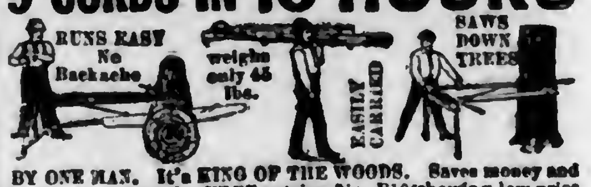

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New York State Fruit Growers' Association Meets

The High Spots in Successful Orcharding

President W. P. Rogers, in his annual address at the meeting of the New York State Fruit Growers' Association, held at Exposition Park in Rochester, January 9-11th, advocated the federation of all the agricultural societies of the state, and spoke in favor of the new state federation of farmers' and fruit growers' organizations that has been formed in this state, of which S. L. Strivings, of Castile, is president, and Seth J. T. Bush, of Morton, secretary. The merging of the two state fruit growers associations, the Western New York Horticultural Society and New York State Fruit Growers' Association, into one big society was advocated by President Rogers, who said he was told in Washington that farmers ought to get together.

Worth-While Spraying

"Worth-while Spraying in War Time," was the subject of a discussion by Professor P. J. Parrott, of the Geneva Experiment station. A questionnaire was recently sent by Professor Parrott to a large number of representative apple growers to ascertain their opinions and plans with respect to spraying during the coming season. Of these, six growers plan for two sprayings, three for three sprayings, six for four sprayings and fifteen for five sprayings. Twenty-eight growers out of thirty do not intend to make any changes in methods or materials. Twenty-seven growers prefer paste and three growers powdered arsenate of lead. Twenty-three growers report probably less care as regards pruning, cultivation and spraying, and seven growers report proper care of orchards if labor is available.

This summary indicates that the spraying of orchards during the coming year is conditioned on the ability of fruit growers to secure competent help. A successful orchardist from the Hudson River Valley writes: "The situation with respect to labor looks pretty serious. However, we must spray our orchards if we are going to get results, and I believe all commercial growers will make every effort to do so. Cultivation and pruning may be neglected to a certain extent, but spraying must be done or we shall have to go out of business."

A letter from an extensive fruit grower in Western New York says: "Many of the local growers seem to have about decided, if labor situation is as bad next season as it promises now, to spray their orchards if possible; to cultivate as much as possible, and let the rest go. It is reported that several of the larger growers among our neighbors are planning to hire no help next season. They will plan to handle what crops they can with their own labor and let the rest of the farm grow hay or weeds."

The purport of nearly all the reports, said Professor Parrott, is that no matter what other orchard operations are neglected, spraying will be carried on as usual as far as circumstances permit. Our most successful growers have expressed their determination to spray and the problem that confronts them is how to get maximum results with minimum expenditure of money and effort. Intelligent spraying has proven very profitable. There is no apparent reason why it should not continue to be remunerative even in war time, since the prices for apples are higher in proportion than the increased cost of spraying supplies.

Avoid preparations of unknown merit. Have spraying machine thoroly repaired and in good working order before spraying season begins. The cost of labor has reached a point where it is necessary to make one's energy go as far as it will. If a new or a larger machine will do more work in less time, the purchase of a new spraying outfit may be advisable. Economize in time and labor by employing efficient loading and spraying devices. A "spray gun" may oftentimes take the place of a man and do more effective work, besides being more economical.

New Varities

A practical paper on "The Fruit Growers' Attitude Toward New Varieties" was given by Professor U. P. Hedrick, of the Geneva Experiment Station. The New York Experiment Station is testing 2,067 varieties of fruit, according to Professor Hedrick. It is probable that the station has tested 4,000 varieties during the past ten years. During this time special attention has been called to 49 varieties of fruit that, on the station grounds, were pre-eminently meritorious and have been recommended for culture in New York state. Among these are the Deacon Jones, Delicious, Opalescent, Perfect and King David apples; the Lucy Duke pear; Arp Beauty, Francis, Miss Lola, Edgmont, Niagara, Rochester, J. H. Hale and Pearson peaches; Imperial, Epineuse, Middleburg, Pearl, Tennant, French Damson, Late Muscatelle and Mirable plums; Schmidt, Abesse d'Oignies, Lambert and Reine Hortense cherries; Berckmans, Delago, Eclipse, Secretary, Ricks and Empire State grapes; June, Plum Farmer, Black Pearl, Marldon, Herbert and Empire raspberries; Poorman, Industry and Chautauqua gooseberries; Perfection, Diploma and Chautauqua currants; Prolific, Chesapeake, Indiana, Barrymore, Amanda and Good Luck strawberries.

Why these new varieties have not been better received and why fruit growers are so little interested in new varieties were questions that received much attention in Professor Hedrick's discussion. "Nurserymen," he said, "are largely to blame for the distrust of new varieties. They customarily describe the merits of their novelties in glowing terms but do not trouble themselves to illuminate by word or picture the faults of their introductions. Absolute confidence in these one-sided descriptions have been so often a source of disappointment to fruit growers that they, having been defrauded, assume a hostile attitude towards all new varieties. On the other hand the fruit grower errs in expecting too much from new varieties. He fails to realize that there is no all-round variety of any fruit; that no sort grows equally well in all soils and climates; and that a new variety cannot serve all purposes equally well. The nurseryman's description may fit the variety in one orchard but not in another."

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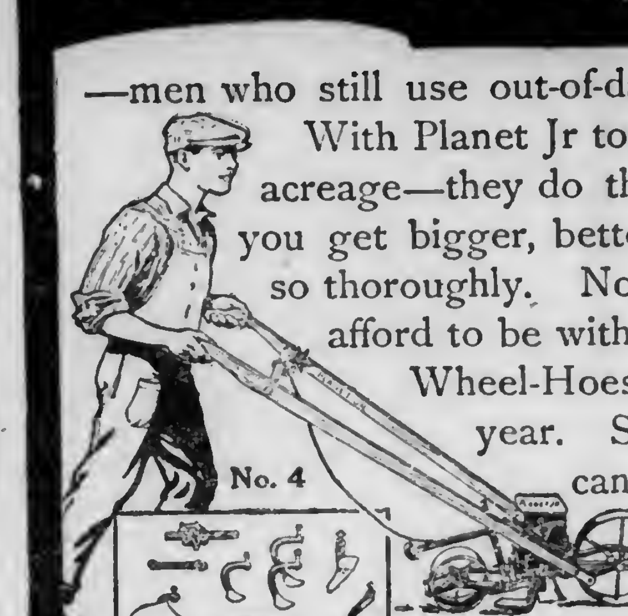

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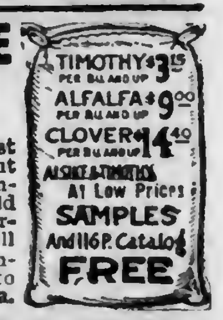
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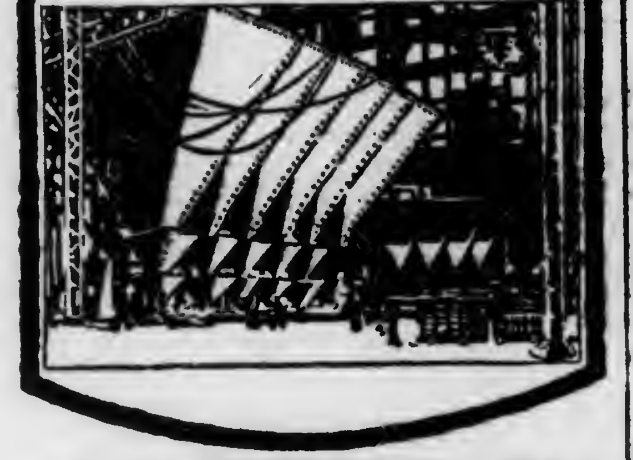

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Better-Quality Varieties

It was Professor Hedrick's belief that all of the fruits grown in this climate have been improved during the past decade by the introduction of sorts that are earlier or later, higher in quality, handsomer, hardier or more productive, or that keep or ship better than the sorts whose place they are expected to fill, and a new fruit that fulfills any of these conditions better than an old variety and is up to the mark in other characteristics can hardly fail to be profitable in commercial plantations. In the business of fruit growing a multitude of varieties is needed for a multitude of consumers. Dessert and culinary requirements are not met by the niggardly assortment which commercial fruit growers are now putting on the markets. Too close a specialization on Baldwins, Bartlets, Elbertas, Bradshaws, Montmorencies and Concords cannot but cut the total sales of fruits. A greater variety from which to choose would increase purchases among those who now buy little fruit.

Central Packing Houses

Some interesting facts in regard to central house packing, based on his experience and observation, were brought out by Professor R. W. Rees, of the Cornell College of Agriculture. A large percentage of these central packing houses are operated on a co-operative basis. In some localities the fruit is packed by joint stock companies and is sold by the packers on a commission basis. A large number of cold storage houses also do the grading and packing. The central packing house idea has reached its greatest development in the Pacific Northwest and in the Annapolis Valley, Nova Scotia. In the Northwest in 1917 forty percent of the fruit was packed in central packing houses. In the Annapolis Valley, where apples are packed in barrels under similar conditions to those in our Eastern states, years ago conditions were bad and growers received little for their fruit. Now, practically all the apples in the valley are packed in central packing houses. Central packing houses and co-operative marketing go hand in hand. The growers would not have been able to build up great co-operative marketing organizations in this country had it not been for the central packing house. The central packing house has done much more than state grading laws to improve the quality of the fruit and standardize the pack.

Professor Rees says a greater argument for the centralized packing house than increased prices for the fruit, is economy in labor. As prospects are good for a big crop of apples in 1918 and an inevitable labor shortage in prospect, he believes that growers should take up the central packing house question as a means of reducing labor in packing. He has found that it is easier to get laborers to come to the central packing house than to the orchard. The location of these houses should be on railway siding, central for the community and accessible to labor. The buildings should be equipped with a good artificial lighting system, as well as natural lighting, as it is usually cloudy and dark in late fall when apples are packed.

Packing and Grading Laws

"The Federal Packing and Grading Law" was discussed by H. C. Hetzel, office of Markets, Washington, D. C. After visiting 300 orchardists in twenty-four states, studying all phases of handling apples, and securing the opinions of many growers, and investigating state grading laws, he has found that apple grading laws are in demand, that ninety percent of the growers visited favored such legislation, that there is a need for apple grading laws, and that a national law would be better than the several state laws. There are grading laws in thirteen states but in only three states is the law enforced. This diversity of requirements is a disadvantage to the growers, the dealers and the consumers.

Effects of Pruning

Professor W. H. Chandler, of Ithaca, gave an address on pruning. In pruning to shape the tree, the effect of a system of training, adopted when the tree is growing may not be known in a climate like that of New York for fifty years even if the same system be followed during the life of the tree. For this reason, says Professor Chandler, our knowledge concerning the best methods of pruning is very meager. Concerning the immediate effects of cutting away parts of the tree top in pruning we can speak with more certainty. It is common knowledge that cutting away part of the top of the tree during the dormant season increases the vigor of growth during the following season of adjacent twigs that are left. The new shoots will be longer, and growth will continue later in the season. It is also true that this new growth is generally stockier. In spite of this increase in vigor the effect of pruning is to reduce the total amount of growth. Altho the growth following pruning is more vigorous, there are fewer growing points. In case of two trees, one severely pruned and the other unpruned, the unpruned tree will be larger than the pruned tree by more than the amount of growth that has been removed from the pruned tree. The explanation of this is that the pruning by removing buds that would open into leaves, reduces the foliage. In our pruning experiments we have found a marked reduction in the total surface of those trees that have been pruned with any degree of severity.

"Not only does pruning reduce the size of the tree, but even more markedly it reduces the fruitfulness during the early years of the life of the tree," says Professor Chandler. "While it is true that any amount of pruning on young trees reduces the fruitfulness, we cannot be too sure with reference of old trees. Some evidence indicates that pruning actually stimulates better fruitfulness in the old trees."

Favor Prohibition

The New York state fruit growers went on record in favor of war time prohibition and unanimously adopted a resolution asking President Wilson to close the breweries and thereby stop the unnecessary waste of labor, coal and sugar used in the making of beer. A resolution was adopted aimed at correcting abuses in car distribution so that every shipper may receive his just share of cars. A resolution requiring every commission merchant to keep a record of the names and addresses of persons buying fruit from them and report them back to the shipper was voted down.

N. Y. Associations Combine

An important matter that came before the meeting was a resolution favoring the merger of the New York State Fruit Growers' Association with the Western New York Horticultural Society, which was unanimously passed, and a committee was appointed to confer with a similar committee from the Western New York Horticultural Society to arrange the details of the merger.

The Exhibit

The exhibition of fruit was small in quantity, but of exceptionally high quality. The large exhibition building was filled with orchard machinery, nursery exhibits, and other farm equipment. There was the largest showing of dusting machines ever made in the state, showing that there is a steadily growing interest in these machines. Great improvements, however, were seen in the many liquid sprayers on exhibition.—R.

Peninsula Horticultural Society Meets

The thirty-first annual meeting of the Peninsula Horticultural Society was held at Cambridge, Md., January 8-10, 1918. The extremely cold weather which preceded the days of the convention prevented as large attendance as expected, and tied up all the fruit intended for the exhibit in the storage plant in Philadelphia. This was a great disappointment as a great deal of effort had been made to have a good horticultural exhibit. However, the meeting was satisfactory and the splendid program was carried out almost as arranged.

On Tuesday evening Samuel Fraser, of Geneseo, N. Y., spoke on "Some Lessons from 1917." He called attention to some of the effects upon farm prices which are produced by the law which prevents the storing of farm products by dealers, and the elimination of speculative action. Altho not so intended, this condition tends to bear down the price to farmers and makes movement of crops slow and uncertain. Prices to farmers have been lower since November 1, the date the ruling went into effect. He expressed the belief that farmers must assume the business of distribution of their products since the practice of leaving this business entirely to a different and unsympathetic set of men has proven an absolute failure.

Mr. Fraser, in referring to the statement made by Herbert Hoover that he could not meet the farmers because they were not organized, said that the greatest need today was organization. If agriculturists are only a mob as compared with organized industries, it is time we got busy. The farmer must quit trusting in outside helps to foster his business and learn, thru co-operation, to solve his own problems.

Prof. C. A. McCue, of Delaware Experiment Station, spoke on the results of the ten-year experiments in fertilizing peaches. If the results on the soil at this station indicate a general truth there has been much taught which is not correct. For instance, according to Prof McCue, phosphoric acid produced less effect or profit, when applied either alone or in combination, than either of the other two elements. And likewise,

the contrary result of the effects of nitrogen in nitrate of soda was astonishing. The plots receiving annual applications of nitrate of soda alone and in combination with potash produced the greatest net profits. Double and triple applications produced corresponding gains. The trees made greater growth, had greener foliage and the fruit was larger and more numerous. On the other hand, the fruit did not ripen as early, or develop as much color. The nitrogen seemed also to intensify the tendency to alternate bearing, especially when applied excessively. Prof. McCue said that sunshine appeared to be the chief factor in producing color, and that the dense foliage in the luxuriant trees prevented sufficient light to fully color the fruit. The keeping quality was not materially affected.

In speaking on Peach Growing in New Jersey, Prof. A. J. Farley, of the New Jersey Experiment Station, said that in his opinion New Jersey had over-planted in Carmen peaches. The Hiley is now being planted largely and the J. H. Hale is growing in favor. The motor truck as a means of reaching the markets is being adopted rapidly. He stated that his observations indicated that farmers who were not too exclusively specialists had less difficulty in meeting the labor problem since continuous employment could be given and large amounts of extra labor did not have to be provided, something which was almost impossible in these times. He stated that mechanical graders are coming into use rapidly in New Jersey.

The results of last year's experiments with dusting versus spraying with self-boiled lime-sulphur for the control of peach scab showed that the dust was equally effective. While the cost of material is greater, there is a great saving of time and labor and that dusting will probably grow in favor with extensive orchardists.

Mr. Horace Roberts, of New Jersey, next spoke on Improving Old Farms. Mr. Roberts, besides being an extensive fruit grower, has made a specialty of buying rundown farms and improving them by good farming methods. He expressed himself as having been fortunate enough to have been born and raised on a poor farm. For the highest success in farming you do not need the best land to begin on. He has had no trouble in keeping labor in all his extensive operations. Give labor its just deserts, he said, and you will have no trouble. The men who help to improve the value of land, and who help to produce good, profitable crops are entitled to some of the profits as well as living wages.

The first thing he does to a rundown farm is to lime it. Second, drain it if necessary. Third, give thoro cultivation. When a man can raise good hay and corn he can soon raise anything else.

In a talk, Marketing the 1917 Crop of Peaches, Mr. H. C. Richardson, of Delaware, told of his efforts to properly pack the peaches so as to present the best appearance. Auto trucks were largely used. Except for extensive growers, he recommended community grading and packing centers. He pays pickers by the day and proposes to pay a specified wage for a minimum number of baskets next year. All above the minimum will be paid for at so much per basket.

The writer was not able to be present at the remainder of the sessions to hear the able speakers who were yet to appear.

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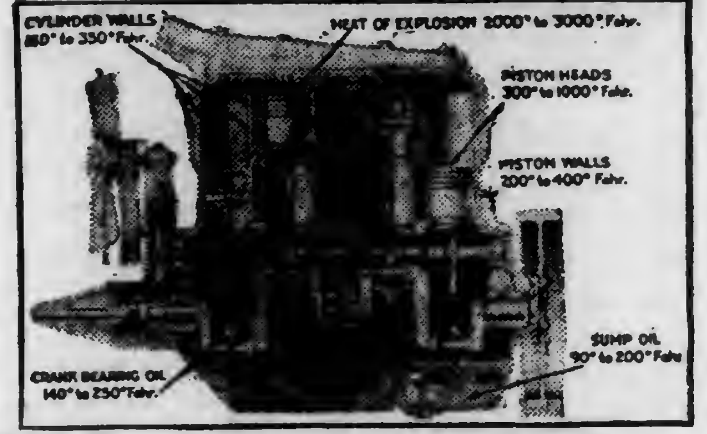
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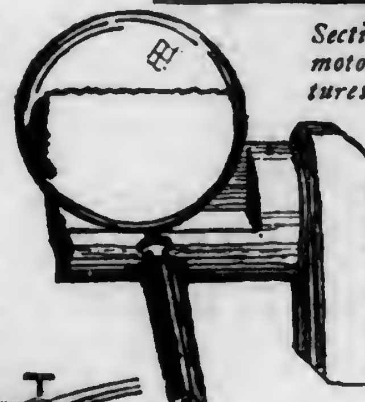
Sectional view of a popular type of motor, showing high operating temperatures that cause rapid destruction of the average automobile oil



Millions of tiny teeth cover the apparently mirror-like surface of a bearing or other working part of an engine. These teeth tear and grind each other unless kept apart by a protecting film of lubricant

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Was your Silo really full when you began winter feeding? The average Silo when filled in a hurried fashion settles about one-fourth. If you'd like to know how the upper fourth of Your Silo can be made to pay $75 to $100 yearly, extra, write for our 1918 catalogue to-day—it's free for the asking.

PAPEC MACHINE CO.
178 Main Street,
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25 Convenient Distributing Points

200 Head Registered Holsteins 200 Head

Dispersion of Three Great Herds

LEON MORE Lacona, N. Y.
STEVENS & MORE Lacona, N. Y.
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Sale will be held Feb. 12th-13th, 1918
Syracuse Sale Pavilion, Syracuse, New York

All animals over six months of age will be tuberculin tested by State Approved Veterinarians.

A great number of A. R. O. Cows bred to fine bulls. Many due to freshen soon after sale time.

Fine Cows Fine Bulls Fine Young Stock

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Liverpool Sale & Pedigree Co., Inc.
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THE SELF-OILING WINDMILL has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.
We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
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WITTE "Kero-Oil" Engines
Immediate Shipment—All Styles—2 to 22 H-P.—No Waiting—Big Factory—Big Output—Prices most favorable. Write for my terms and prices—Cash, Payments or No Money Down.—ED. H. WITTE, Pres.
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I Save You $15 to $200

REMOVAL NOTICE OF I. N. SIMON & SON SEED CO.
The growth of our business has forced us to move from our old location, at 6 N. Front St., to a new and larger store, at 438 Market St., at Philadelphia, Pa.
We shall be glad to welcome our customers at our new store.
Our 1918 catalog is ready for mailing. A postal will bring you a copy.

Send No Money
Fence shipped on approval DIRECT FROM FACTORY.
Write today for prices.
Standard Supply House
42 West Logan Street
Noblesville, Indiana.

Please mention Pennsylvania Farmer when writing to advertisers.

Farm Products Prices and Prospects

PENNSYLVANIA CROP REPORT

The Crop Reporting Board of the Bureau of Crop Estimates of the United States Department of Agriculture makes the following estimates from the reports of its correspondents and agents:

Winter Wheat. — Pennsylvania: The acreage sown this fall is 5 percent more than the estimated acreage sown in the fall of 1916, equivalent to an increase of 73,000 acres, the indicated total acreage sown being 1,530,000 acres, compared with 1,457,000 acres last year.

Condition on December 1 was 85 percent of normal, compared with 91 a year ago and 90 percent, the ten-year average condition on Dec. 1.

Farmers were disposed to show a much larger increase, but found it impossible due to the shortage of farm labor and unfavorable weather during October, in many parts of the state.

The low condition was caused by late seeding, and the growth has been retarded by the cold weather during the latter part of October and November.

Winter Wheat. — United States: The acreage sown this fall was 42,170,000 acres, compared with 40,534,000 acres planted last year.

Condition on December 1 was 79.3 percent of normal, compared with 85.7 last year and 89.3, the ten-year average condition on December 1.

Rye.—Pennsylvania: Acreage sown this fall 283,000 acres, compared with 280,000 acres last year.

Condition on December 1 was 88 percent of normal, compared with 89 a year ago and 91 percent, the ten-year average on December 1.

The growth has been retarded by late seeding and cold weather.

Rye.—United States: The acreage sown in the fall of 1917 was 6,119,000 acres, compared with 4,480,000 acres planted last year.

Condition on December 1 was 84.1 percent of normal, compared with 88.8 last year and 92.2, the ten-year average condition on December 1.—G. L. Morgan, Field Agent.

THE SEED POTATO SITUATION

A recent telegraphic inquiry into the seed potato situation, with reference to the available stocks of varieties suitable for the truck growers of the South, indicates that there is a reasonably good supply in the hands of the northern seed dealers. At the same time it was found that the southern seed dealer who serves as a distributor of northern grown seed had for the most part an ample supply on hand or in sight to meet the requirements of the growers in his territory. It would seem therefore that so far as the supply is concerned the seed situation is in a fairly satisfactory condition. There is, however, another feature to the seed potato situation which is to a large extent what might be termed an unnatural and artificial condition. The condition to which we refer is that of the price which the southern grower is being compelled to pay for his seed stock. The prevailing price at the present time for Triumph seed stock in Texas and other points in the South and Southwest is in the neighborhood of $5 to $5.25 per hundred pounds. In view of the unusually large crop of 1917 it would seem as if such a price as that which has been mentioned has little or no justification. Apparently it is the result of a reflex action on the producer of this seed stock, due to the high prices which prevailed during the 1917 planting season.

The psychological effect of the high prices charged for seed potatoes in 1917 is a difficult one to overcome, and seems to make it possible for the producer or holder of seed stock to ask and secure a much higher price for his holdings than is justified by either the supply or the demand.—William Stuart, Bureau of Plant Industry.

GARDEN SEED PROSPECTS

In the spring of 1917 there was an unusual demand for all kinds of seeds, not only from market gardeners and other commercial growers of vegetables, but also from patriotic citizens and school children for planting small areas to increase food production. It was necessary to modify two or three times during the season the prices quoted in retail and wholesale catalogs early in the season as the seed stocks became exhausted and had to be replenished. With a continuation of the war, it is reasonable to predict that patriotic food production not only will continue, but will even increase, and with the experience acquired from the past, this movement will be of considerable importance in increasing the available supplies of vegetables during the summer and fall of 1918.

The high prices of all staple food crops, together with shortage of labor, increased cost of materials, fertilizers, implements, rent of land, and other factors entering into the production of grain and seed crops will necessarily make vegetable crops more expensive. Contract growers of seeds are finding it hard to place their usual acreage with small growers and it is necessary to offer much higher prices now than formerly. Taking into consideration, therefore, expenses of conducting business, unusual probable demand, higher prices of contract stocks, and probable shortage in supplies in the fall of 1918, it may be that a carry-over of present stocks may be profitable.

General reports indicate that contract conditions for deliveries for the fall of 1918 are in a very unsatisfactory shape. Before the war the larger proportion of the garden beet, mangel, cabbage, radish, spinach and turnip seed used in this country was produced is Europe. In addition to these kinds of seed a large percentage of carrot, celery, onion, parsley and parsnip seed usually has been imported each year. Abnormal labor and other economic conditions in Europe, resulting from the war, and the lack of ships and uncertainties of ocean transportation have virtually reduced or shut off any seed supplies that might be available from Europe. This condition of affairs naturally has tended to stimulate seed production in this country.

California, which has been a large producer of many garden seeds, is finding labor conditions, rent of land and other influences of such nature that it is almost impossible to increase areas for production, and most California growers who were contracting two or three months ago have withdrawn prices and are refusing to take any more contracts. Peas and beans, which are abnormally high, are contracted mainly in the more northern States of the far West, and New York, Michigan and Wisconsin.

In many sections growers are able to contract only a minimum acreage of peas and beans because farmers are receiving such high prices for growing the commercial food sorts. Many thousand acres of high priced peas and beans were put out on contract last year which did not yield their stock seed back to the contract growers. Seed sweet corn supplies possibly are in the worst condition that has ever existed in this country and available stocks for planting commercially are almost impossible to obtain. Many other unfavorable conditions exist in centers which produce other crops.—Seed Reporter.

FOOD CONDITIONS THE WORLD OVER

Australian Wheat Prices

Due chiefly to a shortage of labor at seeding time, the new wheat crop in South Australia is estimated at 26,000,000 bushels as compared with last year's crop of 43,000,000 bushels. Harvesting of the new crop has already commenced.

Official reports received by the United States Food Administration show 120,000,000 bushels of Australia's wheat still in reserve but much is liable to damage from improper storage nor can it be marketed in Europe because of the insufficient ships and the great distance. This condition prevailing in one of the world's most important wheat-growing countries increases the responsibility of the United States for producing a large wheat crop this year.

Depressing Russian Crop Report

Discouraged by low prices and government action on last year's crops, Russian farmers have reduced their activity toward food production. The acreage is less than last year and crop conditions are classed as unfavorable.

French Potato Prices

Scarcity of food in France has resulted in advanced prices for potatoes beginning January 1, 1918, and continuing to the next harvest. Prices to growers range from $2.87 per 100 pounds, for the fourth quality, to $4.76 per 100 pounds for the best quality.

Wholesale dealers are allowed a profit of 92 cents and retailers a profit of $1.84 per 100 pounds of potatoes. Before the war the total retail price paid by consumers ranged from $1.56 to $2.60 per 100 pounds.

Swedish Control of Wool

An official report on wool production in Sweden states that the average wool clip per sheep is 3.3 pounds. The owners are allowed to keep only 2.2 pounds from their entire clip for each member of the family. The remainder must be delivered to the government.

Record Crop Values for U. S.

Values of 1917 crops in the United States based on prices paid farmers have exceeded all previous figures. Final reports also show that the following crops have established new high production records; corn, oats, rye, white potatoes, tobacco, sweet potatoes, beans and onions.

Because of the abundance of the foregoing products, especially corn, potatoes, beans and onions, the U. S. Food Administration is urging their liberal use. An important part of its activities is to keep the public fully informed of the amount of foodstuffs in the country.

SEED CORN SITUATION

Reports from agricultural extension men in twelve states further emphasize the seriousness of the seed corn situation, that was pointed out in the December 1 issue of the Seed Reporter. In general the reports indicate that early frosts in September and freezes in October resulted in much immature corn and later cold weather interfered with proper drying and storage. Shortage of labor also contributed to lessen the supply of seed corn, because much corn had to be left in the fields until cold weather. In some states seed corn selection and inspection, germination tests and special storage have been instituted by the agricultural extension forces in co-operation with the school authorities, councils of defense, commercial organizations and seedmen, and every effort is being made to ascertain the amount of seed corn needed in each county and save every available bushel of corn that is suitable for seed purposes. In spite of all the efforts that have been made and are being made, several of the extension men are much alarmed at the situation and fear that there is certain to be a great shortage of seed corn at planting time.

PRICES OF CORN AND HOGS DURING CIVIL WAR

Since the food administration has decided that the ratio of corn to hogs shall be 13 to 1, or in other words the price of 100 pounds of hogs, live weight, shall equal the price of 13 bushels of shelled corn, it is interesting to note the prices of each—and the ratio—for the period of the Civil War, when no prices were set.

Year	Av. price of Corn, per bu.	Av. price of Hogs per cwt.	Ratio
1861	$ .26	$4.00	14.1
1862	.277	2.78	10.
1863	.453	3.20	7.7
1864	1.06	8.06	7.6
1865	.63	10.50	17.
1866	.42	9.24	22.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

WHO ARE FARMERS' FRIENDS?

There is no end to food for thought during these trying times. In the December 8 issue of Pennsylvania Farmer I see an editorial entitled "Who are the farmers' friends?"

Who are the farmer's friends? Why they are the labor unions when they can use the farmer for their own purposes. They are the manufacturers when the manufacturers need him for personal use. The farmer is the politician's friend thru every campaign until election is over, and a darned old hayseed the day after and until another campaign is waxing warm. The farmer is the friend of our government just now, provided he will agree to raise sufficient food products to feed our people, our soldiers, and our allies, at government-fixed prices, and do it without help to perform the labor, or pay government fixed prices for his help, war prices for fertilizers, and everything else he has to buy; in other words, farm at a loss and be patriotic. The farmer has been exploited ever since business of all kinds, and labor too, has been organized.

Who are the farmer's friends? He has no business friends. The fact is he is not a friend to himself from a broad point of view. Take any community that you will where ten or a dozen farmers dwell. I think it is safe to say not half of them would pull together on any subject or proposition. They meet in the blacksmith shop or general store and discuss any and all problems of the day. Each one has his own solution and the only correct one. Great questions are discussed and settled at one sitting. Nations are made or lost in a day.

The farmer has been alone so long that this attitude is forced upon him. It has become a part of him. He has been fleeced so often, so thoroly and so systematically that he is like the dog hunting for something to eat. All he can find is a bone, but he must be content with that, because big business, labor unions, the middlemen, to say nothing of politicians, all had a meal from that bone before the poor dog found it. Having been used by all other organized industries as a means to a selfish end, can any one blame the farmer for being pessimistic?

Which one of these organizations, labor or manufacturers, should the farmer take as his ally? As a farmer, I say neither one. The farmers are not organized sufficiently strong to hold their own when allied with any strong organization. It would be like holding a few shares of stock in a billion dollar corporation. Big fish always eat the little ones. Both Mr. Pinchot and Mr. Martin, in articles in Pennsylvania Farmer, show the inadvisability of joining the opponents to their arguments, and both give facts; reasons sufficiently strong to tell any thinking farmer to let both alone.

Mr. Pinchot makes one very emphatic statement and rehearses it, too. He says the farmer is a wage earner, not a capitalist. What he receives is wages, not interest on his investment. If that statement be true, every farmer had better sell out and place his capital where it will earn a legitimate interest. Why is not capital invested in a farm and farm equipment as much entitled to legitimate earnings as the same money invested at a prescribed rate of interest?

Mr. Pinchot says the time is ripe for this alliance between farmers and labor unions. That may be true but conditions among the real tillers of the soil are not ripe. The farmer is not sufficiently organized to amount to anything when allied with any already strong organization, except as a benefit to that organization. Furthermore, I am not in favor of such alliances as suggested, even tho the farmers were organized in mass, because the political power vested in so large an organization would very soon cause it to become corrupt, as other organizations now existing have already become.

So far as an alliance with the labor unions are concerned, that is the last one to be considered by the farmer. If there is any alliance to be formed between the farmer and any other body of citizens, it should be between the farmer and the consumer. The farmer needs a market for his produce at better than a thirty-five-cent dollar, and the consumer needs food at less than a two-hundred-cent dollar. With a union of these two forces now as widely separated by barbed wire entanglements and breastworks built by speculators and middlemen, the obstructions might be cleared and a broad avenue made direct from one to the other. In order to accomplish this there must be organization on both sides. When will it come?

There is no need of waiting for the arrival of that new era when Democracy shall prevail. God helps him who helps himself. There has been too much waiting already. We are nearly smothered from being the underdog so long. With ten millions of farmers and farmers' sons—not counting wives and daughters—organized in one unit, we will not need any alliances.—C. C. Hulsart, Monmouth Co., N. J.

CONSISTENCY A JEWEL

When we hear a man stand before an audience of intelligent people and, with stump-orator gush, proclaim the great glory of war and the immediate need for the toil-worn farmer to surrender his last son to military camps and to supinely accept city help on his farm—men who do not recognize the difference between a two-row cultivator and a reaper, or a Berkshire and an Ayrshire, we marvel at the ignorance that prevails as to the business of the farmer. Then this same magi proclaims for conservation of food from the housetop and then proceeds to the hotel dining table and orders enough meat for two men while he calmly scoops five spoonfuls of sugar into his coffee. When this table is cleared, a large residue of the meat ordered goes to the garbage barrel and a large part of the sugar in the cup goes to the dish water. "Consistency Thou Art a Jewel."—D. H. Watts.

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The following are the little prices of our guaranteed tires:

Sizes	Price	Sizes	Price
30x3	$6.50	36x4	$11.00
30x3½	$7.50	34x4½	$12.00
32x3½	$8.50	35x4½	$12.00
33x4	$10.50	36x4½	$13.00
34x4	$10.50	37x4½	$13.50

We will retread your old tires by our improved process and guarantee them at the following prices:

Sizes	Price	Sizes	Price
30x3	$5.50	36x4	$8.50
30x3½	$6.00	34x4½	$8.50
32x3½	$7.00	35x4½	$9.00
33x4	$8.50	36x4½	$9.00
34x4	$8.50	37x4½	$10.00

Add $1.00 to the above for Non-Skid Tire

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Household

WHAT WILL BE WORN

Most of us will want to wear what we have, but we will want to do a little remodeling perhaps, and these forecasts in the shops may be a guide.

Three-quarter and full length coats are to be worn for spring, made of silk or serge. Collars button close about the throat.

Close fitting hats promise to be the most popular. Oil cloth hats are in evidence in spring promises in the millinery establishments; the shapes are slightly mushroom or helmet-like. They will be good rainy-day hats.

Substantial outdoor costumes are made of brown corduroy. The coats are much like a riding coat, and the Scotch caps to go with these suits are very jaunty. This material is practical for the woman who must do outside work as it will not soil, or if it does, will launder like a piece of muslin. But it must not be ironed.

Knitting bags are also made of corduroy, and lined with bright colors. Knitting bags, made of a red cross of ribbon 12 inches at the extremes, are the newest ideas. The top part is used to carry it with, and is not closed, while the small ball slips down into the lowest section.

On account of shortage of wool, silk will be the principal fabric for the spring suits and gowns, and it will come chiefly in dark tones.

Some blouses are made to fasten in the back. Collars also fasten in the back, and are shaped the same in front as back, and fasten on the shoulder. Jabots are used with coats and suits. Designers are trying very hard to introduce high collars, and this is one way in which they have been accepted. — Esther A. Cosse, Passaic Co., N. J.

COMMON SENSE IN HOUSEHOLD METHODS

Weigh Results in Labor and Cost

Common sense demands that we do not lose our heads to the theoretical in managing our farm homes. Just enough theory is all right, but when we get to putting this ahead of our common sense it is sure to bring us disaster. I have never seen so much of the theoretical urged upon the farmers as at this time. I want to give a timely word of warning.

I know of a girl who was called to go some distance into the country to speak to a group of rural women. She did not know what she would talk on but told a girl friend that she thought she would talk on bread making. The girl advised her not to talk on bread making because she had been in the neighborhood and she knew that those women could teach the young girl how to make bread. So the young woman went there and on her return trip frankly told her friend that there was nothing she could think of to talk about to those women. They had a wonderful dinner and everything was cooked better than she could cook herself. She found that they had read the current periodicals and discussed subjects that she was not familiar with herself. She mingled with them a half-day and returned to her home, having learned much herself but having taught very little. Many of these girls fail to admit that they cannot teach such women, but this girl was perfectly frank with herself and her profession.

Many of these advisers come out and tell the farm women that they must can and can and can, when the farm woman has more than she can do now, and has had the added duties this year of having to help much with the outside work. There is need of canning such materials as cannot be saved in other forms, but we must use good sense in the use of our time and materials. The farmer eats his vegetables in their season. In the winter you find him canning at each meal such vegetables as cabbage, turnips, onions, beets, etc., and in the early spring his carrots, parsnips, salsify, etc. To my mind this is the solution of a more simple living, less work canning and the more sensible way. Eat the vegetables in their season and eliminate expense and work. A canning enthusiast told me that it cost her five cents to can a pint of peas, and bought her peas. She could not have figured any cost for her time or her jar or her can rubbers or fuel, but it certainly would not do to tell the farmer's wife that should could do that because the farmer's wife would know better.

Neat Collar and Hat Set

We must subject the teachings being brought to the farm home to the test of common sense. One girl taught the farmers' wives to make an expensive orange marmalade when they knew but a few ways to utilize the abundance of apples that were going to waste in their cellars. I found one teacher teaching a class of farm girls to prepare a breakfast as follows: Remove the core from an apple, bake it, and fill the hole with oat flake cereal which had been cooked. Make some corn meal mush, let it cool, then fry in crisco three small pieces the size of your finger. Make a syrup of granulated sugar and water and pour over the pieces and serve on individual platters. In the first place, the farm woman has to arise much earlier than she wants to get the ordinary breakfast and she surely would not go to bed at all with all of that fussing. In the second place, that teacher would have been fulfilling her mission much better if she had taught them in about three cooking lessons the proper way to cook and eat oat flake and the value of this cereal in the well-balanced ration.

We find the same extreme in the family sewing. The real helper to the farm woman is the one that has worked as she has had to work and can go out and tell her how to relieve herself, economically, of any or many of her arduous duties. If a farm woman has not too much to do and likes sewing, she may do it profitably, but I prophecy the day when the sewing machines will be relegated to the community shop that makes a business of doing commercial sewing. A huge pile of sewing lays between many a woman and the hour's recreation that she might take with her husband in a trip to the nearby town. That same pile of sewing has kept many a woman awake far into the night and robbed her of her recreation and her youth, causing her to wear glasses far too old for her eyes and taking a day off, now and then, with a sick headache.

I bought my eight-year-old daughter's gingham school dresses last summer and not at a sale either, for $1 each, and they were as tasty as you would care to see and made very well. I always go over the bottons and buttonholes when the garments are new. This work, together with the regular sewing, mending, patching, darning, and odd jobs, together with a little fancy work that is so necessary to the life of the happy woman, are sufficient for the ordinary woman to do.

Sound theory is the basis of all of our work. A knowledge of it is essential to doing our work well. But if it is sound theory it will make our work easier and better rather than add to our duties. Let your good common sense govern you and look first to the advice that is going to make you less work and that done more economically to your strength than ever before. — Mrs. Eugenia Benn.

SOMETHING NEW IN TARTS

Wheatless and part wheat pastries are here offered to patriotic housewives. Line tart tins or muffin tins with one of the following pastries rolled thin. Bake before filling.

War Pastry No. 1.—Combine as for other pastry the following ingredients, adding enough water for a stiff dough: 2 cups barley flour, ½ teaspoon salt, ⅓ cup vegetable fat, ½ teaspoon baking powder.

War Pastry No. 2.—Combine the following ingredients, using enough liquid to make a dough that can be rolled thin: ½ cup cornmeal, ½ cup wheat flour, ½ teaspoon salt, 1 tablespoon fat, 3 tablespoons milk. Bake in quick oven.

War Pastry No. 3.—Scald 2 cups finely ground oatmeal with 1 cup boiling water; add 1 teaspoon vege-

Tart shells made by any of the above recipes may be filled with preserves, honey or custard, and varied by adding meringues or a bit of whipped cream. Sprinkle top with chopped nuts or candied orange peel.

Orange Tarts.—When company is coming try these tarts: (Ingredients): 1 cup boiling water, 4 tablespoons cornstarch, 1 large juicy orange, ⅔ cup white corn syrup, 1 teaspoon lemon juice, 3 eggs. Rub the cornstarch smooth with a little cold water, add the boiling water, cook five minutes; add the pulp and part of the grated rind of the orange, the syrup and the lemon juice; heat thoroly and pour slowly on the beaten yolks of the eggs; beat well; pour into tart shells; cover with meringue made from the whites of the eggs and flavored with lemon juice; sprinkle with grated lemon peel; brown in oven; serve cold.

Daisy Tarts. — Daisy tarts will please the children. Seed and mix ½ cup each raisins and dates; put fruit thru food chopper; fill tart shells. Form daisy with a center of yellow preserves or candied orange table fat; roll very thin; bake in quick oven.

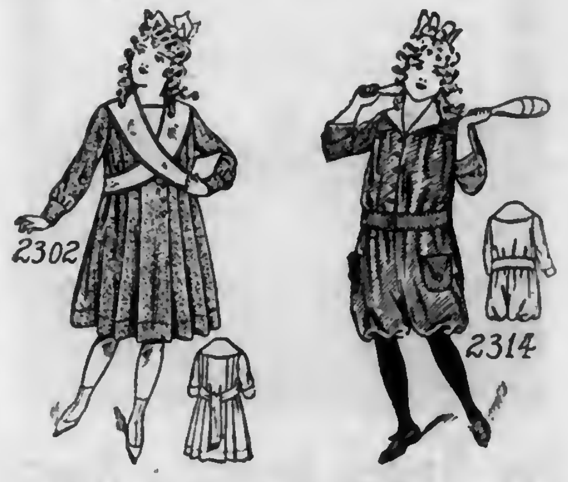
Apple-Raisin Tarts. — Wash and soak 1 cup seedless raisins over night simmer in same water for an hour; add 1 quart peeled quartered apples and ½ cup white syrup; simmer together until done; fill tart shells.—U. S. D. A.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

For Young Girls

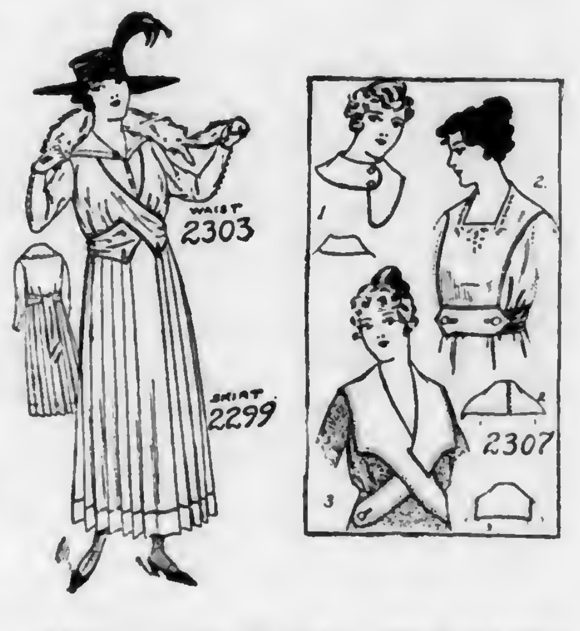
2302.—Pretty Frock.—This design in serge with white pique, or faille for the collar trimming, will make a smart dress for school or general wear. The model is also good for wash materials. Pattern is in 4 sizes: 6, 8, 10 and 12 years. Size 10 requires 4¾ yards of 36-inch material. Price, 10 cents.



2314.—Practical Bloomer Suit. — In these days of physical training, a suit of this kind is most appropriate. A skirt may be attached for ordinary wear, which can be slipped off easily when required. Serge, drill, khaki, gingham, gabardine, flannel and cashmere are good materials for this model. Pattern is in 5 sizes: 4, 6, 8, 10 and 12 years. Size 12 requires 4 yards of 44-inch material. Price, 10 cents.

Interesting for Ladies

2303, Waist; 2299, Skirt.—Smart "Best" Dress.—Navy blue serge and black satin could be nicely combined for this style. It is also good for plaid and mixed suiting. The waist is one of the popular "tie on" models. The skirt is straight and plaited. The waist pattern in cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches, bust measure. The skirt in 6 sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It will require 6¼ yards of 44-inch material for the entire dress. The skirt measures about 3⅜ yards at the foot, with plaits drawn out. This illustration calls for two separate patterns, which will be mailed on receipt of 10 cents for each pattern.



2307.—New Collars.—These styles are very attractive, and are suitable for silk, crepe, linen, batiste, velvet, satin or faille. No. 1 is especially good for satin and linen. No. 2 will be pretty with embroidery in white or colors. It shows the new square neck outline. No. 3 is good for pique, silk, faille or linen. Pattern includes all styles illustrated. It is cut in 3 sizes: Small, medium and large. Size medium requires for No. 1, 1 yard of 27-inch material; for No. 2, 1 yard of 36-inch material; for No. 3, 1¼ yards of 36-inch material. Price, 10 cents.

Grange

COUNTRY TEACHERS

In seeking the underlying reasons other than in the distribution of wealth for the obvious fact that the 11,000,000 city children of school age in the United States have incomparably better educational advantages than the 16,000,000 children within the same age limits who live in the rural districts, the United States bureau of education has placed a major share of the blame on the fact that the average country school teacher is young, poorly prepared, inexperienced and above all, nomadic; while the majority of the city teachers are specially trained for their work and remain in the same field for years at a time.

Having uncovered this condition of affairs, the bureau has taken the view that the solution of the problem of getting the right kind of teachers to the country and of inducing them to remain there lies in the building of a "teacherage" side each rural schoolhouse — in providing, in other words, a comfortable home for the secular instructor close by his or her place of work, just as a parsonage is provided for the religious instructor near his church.

A Maryland School House—A Live Patrons' Club is Held Here.

The movement for teacherages in the United States has taken hold most firmly in the State of Washington, where it has been pushed industriously by the woman state superintendent of public instruction, Mrs. Josephine Preston. A few years ago there was not a single community-owned teacher's home in the state. Now there are 108 cottages for teachers, and their number is steadily being increased. The state educational officials have had prepared plans for a standard small and large home, and these are furnished to communities at a nominal cost in place of the usual architect's fee.

Tho the teacherage movement has had its greatest development in Washington, it has not been confined to that state. A recent survey of the field by the United States bureau of education shows one or more teachers' cottages in practically every state in the Union. The movement is being fostered by the General Federation of Woman's Clubs of the United States, and it is believed by the federal educational specialists that the construction of teacherages will be the next big educational movement of the country.

IMPROVING RURAL SCHOOLS

I have been much interested in the school articles published in Pennsylvania Farmer, and if our editor is not already tired of school talk, I would like to tell of some of the work done in Tioga County (Pa.) schools.

Several years ago, our county superintendent asked each teacher to hold at least one social or entertainment during the year, the proceeds to be used to improve the school equipment. The teachers nearly all responded by holding one or more socials. These were of different sorts, box parties, ice cream, foot and post-card socials, chicken, pie, and variety suppers. When ice cream was served, it was purchased from a restaurant in a nearby town. At the other socials the supper was donated. Variety suppers were usually held at the school house; cake, sandwiches, pickles, salads and baked beans being served on paper plates.

At the foot socials, each person paid one cent per inch for the length of his or her foot and refreshments were free. At the card socials, partners were formed for the evening by matching torn post cards. Popcorn, peanuts, and boxes of home-made candy were usually sold.

Nearly all the people were very kind in helping. The money was used to purchase library books, framed copies of good pictures, maps, globes, curtains, and flags. The flag was the first thing purchased in most of the schools, and when the war broke out we were able "to show our colors". The flag pole was usually donated by some patron of the school and several others would join in helping put it up. In some cases window shades, inside paint, and varnish for the furniture was purchased, but in most cases the first two were furnished by the school board.

Musical instruments were also purchased, several belfrys built and bells put in. The school board usually donated something toward building the belfry. Nearly all the improvements made helped toward bringing the school up to the county standard. Some of the schools in our district would have reached this standard last year but the out buildings and school furniture did not meet the requirements. This condition can be remedied only by the school board, but patrons can help by joining the teacher in a united effort to secure the necessary improvements.—Mrs. Belle Lawton, Tioga Co., Pa.

AGAIN
The Farmer's Opportunity

Farmers Obtained Record Prices for Produce last year. Should do so Again this year.

Farms should be run to Capacity and Proper Fertilizers Liberally used.

Use MAPES MANURES

Their Standard Absolutely Maintained in Field and State Experiment Stations.

All during the war the Mapes Manures were made and are being made precisely as in the past, under pledge to supply the Phosphoric Acid from Animal Bone and Guano, made available without acidity, no Rock or Acid Phosphate used. While they do not contain as much Potash as formerly, they do hold enough to greatly aid the present crop to more perfect growth and development, and thus insure the balance of its necessary Potash being taken from latent soil supplies.

Our splendid record with the State Experiment Stations of 1916 again maintained.

We give below the average of all the Station Analyses which we have received of our prominent brands for 1917.

1917 ANALYSES

	Ammonia	Phos. Acid Available	Total	Potash
MAPES POTATO				
Average of six State Station Analyses	4.95	7.74	9.08	1.09
Guarantee	4.50	8.	8.	1.
GENERAL SPECIAL				
Average of four State Station Analyses	7.29	6.22	9.04	1.64
Guarantee	7.	6.	8.	1.
TOBACCO STARTER IMPROVED				
Average of four State Station Analyses	5.23	6.14	8.33	1.12
Guarantee	5.	6.	8.	1.
CORN MANURE				
Average of four State Station Analyses	3.24	7.67	10.74	1.07
Guarantee	3.	8.	10.	1.
TOP DRESSER, FULL STRENGTH				
Average of two State Station Analyses	10.24	6.34	8.45	1.82
Guarantee	10.	5.	8.	1.
TOBACCO MANURE				
Average of two State Station Analyses	12.12	6.34	8.45	1.82
Guarantee	10.	....	8.	1.

We are equally proud of the results in the field. They have been most excellent, fully substantiating our theory as to the advisability of supplying at least limited Potash to aid the crop to make a start, and so enable it to avail itself to the utmost of the latent supplies of Potash in the soil.

Order at once. Under this year's conditions it is the only way to be sure of having your Fertilizer when you want it.

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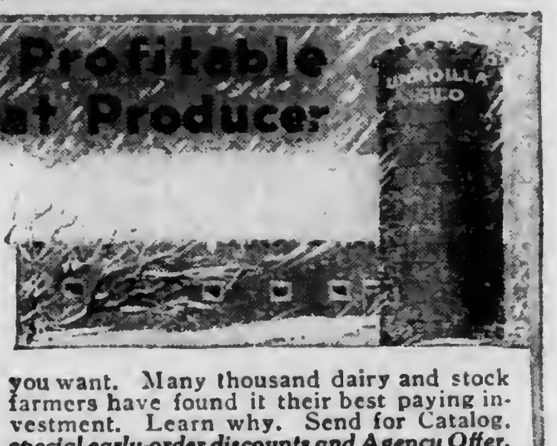

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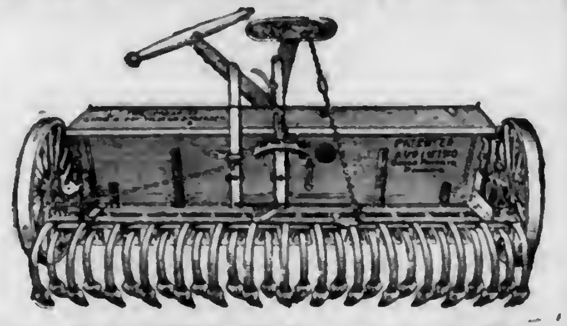

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Markets

NITRATE OF SODA SALES

The Federal Secretary of Agriculture has announced the plan for sale and distribution of the 100,000 tons of nitrate of soda for fertilizer use purchased under the provision in the Food Control Act. The f.o.b. price at ports will be $75.50 a ton, farmers paying the freight charges from the port of arrival and the state fertilizer tag fee. In each county where there is a county agent the agents will associate with themselves three or more local business men in each community, who will serve without compensation, to assist them in the sale of the nitrate. In each county where there is no county agricultural agent a committee of three or more local business men will be appointed. A farmer living in such a county who desires to make application for nitrate of soda should, if he does not know the address of the local committee, address an inquiry to the state director of extension for his state. The ships carrying the nitrate will be directed to the most convenient ports, including Charleston, Wilmington, Savannah, Norfolk, and Baltimore. Representatives, who also will serve without compensation, have been selected to handle the shipments at these places.

Farmers will make application for nitrate upon blanks furnished by the county agents or the local committees. Applications must be signed and returned so as to reach the county agents or members of the local committees by February 4. As the nitrates, under the law, can be sold only for cash, the farmer will be required to deposit the money covering the cost of the nitrate he wishes with the local bank, association, or individual to be designated by the Department. The orders will be transmitted to the Department, accompanied by the amount covering the same. If the quantity of nitrate that can be secured will fill all orders, each farmer will secure the amount he requests; otherwise, it will be necessary to allot the nitrate to those applying for it so that all may participate on equal terms in its distribution. None of the nitrate will be sold to dealers, either directly or indirectly. It will be sold only to farmers directly for cash at cost, and generally not in excess of the amounts used by them heretofore.

The government is making every effort to reach farmers who desire a part of this nitrate, but states that it will be impossible for county agents or other persons to visit every individual farmer, and urges all who desire to purchase nitrate to get in touch with their local county agent or a member of their local committee.

PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 21, 1918.

There is practically no change in the potato market this week. While the supplies have been a little more liberal than last week's offerings, there has been a good movement, and there are now only about 50 cars of potatoes on track here. The new demurrage rates which went into effect this week may have a tendency to make a freer movement. Pennsylvania potatoes are selling generally at $2.40 to $2.65 per cwt., with some extra fancy, well-graded and selected potatoes drawing $2.75 to $3. New York State potatoes have been selling mostly at $2.25 to $2.50 per cwt., with some extra fancy stock in sacks drawing $2.60 to $2.70. The nearby New Jersey stock being hauled in is moving out readily at 80 to 90 cents per ⅝-bushel basket.

The sweet potato market is quite a little easier than last week. There have been quite a few cars of Delaware and Maryland stock thrown on the market, some of which was rather poor. While a few sales of the best stock was made at $2, average sales were made at $1.90 per hamper, while the poor grades sold at $1 to $1.25 per hamper. The New Jersey stock is also in quite free supply and lower, selling all the way from $1 to $1.35 per ⅝-bushel basket.

Vegetables

While there has been a fair demand for dried beans, there has been no change in prices and the market is ruling about steady, with marrows drawing $15.75 per cwt.; Pea and Medium, $13.75 and Red Kidneys, $14. Strictly fancy green beans are in very light supply and prices continue to rule extremely high, the few fresh arrivals selling readily at $6 to $8 per hamper. The continued cold weather that has been prevailing is having its effect on nearby root stock of all kinds such as beets, carrots, parsnips, and turnips, all of which are in very light supply, are bringing high prices. Beets have been selling readily at $3 to $3.50 per barrel. Carrots, $2.75 to $3.25; parsnips, $3.50@4 and white turnips from $2.75 to $3.25. Brussel sprouts are more plentiful and under a slow demand the market is much lower, sales now ranging from 20 to 22 cents a quart. Supplies of old cabbage were much more plentiful last week and as a result prices show quite a decline, the same quality that sold from $60 to $65 per ton last week now selling from $45 to $52, with the market about steady at the decline. A car of new cabbage from Florida, sold at $2 to $2.50 per hamper. Cucumbers continue very scare, the hot house supplies now being the only cucumbers on the market. These are selling promptly at $1 to $1.50 per dozen.

The celery market continues weak and inactive, with an over supply of poor celery on the market. Best New York State celery is selling at $2 to $2.50 per crate, with California ranging from $3 to $4.50 per crate. Fancy Pennsylvania celery is in moderate supply and meeting a moderate demand at 10 to 18 cents a bunch. Fancy egg plants are scarce and wanted, and when here readily bring $4 to $5 per crate. Horse radish is a little firmer, with supplies light and an active demand at $6 to $8.50 per barrel, according to size and quality. There has been no Norfolk kale or spinach on the market for several days, but a car of Texas spinach sold at $3 per bushel. The market on lettuce is ruling extremely low. Supplies are quite liberal and much of it is very poor. Best stock is selling at $1 to $1.25 per hamper, with poor ranging from 25 to 75 cents. Fancy hot house mushrooms continue in light supply and the market is firm and active, with prices ranging from $1.25 to $1.65 per 3-lb. basket.

As we predicted in these columns last week the market on onions is stronger, good stock is now selling at $2.90 to $3 per 100-lb sack. The market is practically bare of fancy peas and strictly fancy stock, when here, is drawing high prices. Some Florida hampers are selling up to $7.50 with California drums from $8 to $10. Parsley is in very light supply and the market has advanced almost daily since our last issue, and is now selling at $11 to $12 per barrel. Fancy peppers are in active demand at $6 to $6.50 per crate. After being extremely plentiful for several days, shallots are now scarce and would readily bring $4 to $5 per barrel. Squash continues in extremely light supply and when here sells readily at $3 to $4.50 per crate. Rutabagas are also in light supply and selling at $2 per cwt. Tomatoes continue in light supply and the market rules firm and generally unchanged. Fancy hard ripe, 144-size, are selling at $5 to $5.50 per crate, with fancy green stock from $3.50 to $4.50. Good choice hard ripe 180-size are selling at $4 with green stock from $2.50 to $3.50, while the Gems or 216-insze are bringing from $2 to $2.50 per crate. Hot house tomstoes are also in light supply and firm at 25 to 35 cents per pound. There is but very little watercress on the market and sales of fancy stock are being made at $4 to $5 per 100 bunches.

Fruits

The offerings of strictly fancy apples are moderate and the market is ruling about steady with a fair demand for fancy fruit free of frost, with range of values about as follows: Baldwins, $3.50 to $5.50; Ben Davis, $3 to $4.50; Black Twigs, $3.50 to $5.75; Ganos, $3 to $4.50; Greenings, $3.50 to $6; Kings, $4 to $6; Hubbardstons, $3.50 to $5; Northern Spys, $3.50 to $5.50; Stayman Winesaps, $4 to $6.25; Twenty Ounce, $4 to $5; York Imperials, $3.50 to $5.25; Winesaps, $3.50 to $6; Russett, $4 to $5; Rome Beauty, $5 to $6.50. Box apples are also showing very little change, altho the demand and movement is more active with sales averaging about as follows: Rome Beauty, $1.75 to $2; Spitz, $1.75 to $2.25; Jonathans, $1.50 to $2; Black Bens, $1.75 to $1.90; Winesaps, $1.65 to $2; Delicious, $2 to $2.75; Stayman Winesaps, $1.65 to $2.15. The market on Keiffer pears continue slow and draggy with prices generally unchanged. Best stock is selling at $2.50 per barrel and No. 2 fruit at $1 to $1.50. Cranberries are fast winding up and the market is very firm, barrels selling at $16 to $17.50 and crates at $3.50 to 5. The few Florida strawberries that are arriving are bringing from 60 to 75 cents a quart and Californias 35 cents per pint. Some Californias arrived badly frozen and these are selling from 14 cents a pint up.

Poultry

The market rules very firm on fine heavy dressed fowls which are in light supply and readily bring 30 to 32 cents per pound, with smaller sizes ranging from 27 to 29 cents. Chickens are also firm and active with fancy heavy roasters selling at 28 to 30 cents and smaller sizes at 26 to 27 cents. Broiling chickens are in active demand at 32 to 37 cents. Turkeys are in light supply and 2 to 3 cents higher than last week, fancy selling readily at 35 to 38 cents. Ducks are in good demand at 25 to 30 cents with geese moving rather slow at 22 to 25 cents.

Live poultry is in light supply generally with fancy large fowl being in active demand at 28 to 30 cents, and an occasional sale higher. Chickens are selling at 26 to 30 cents and old roosters 20 to 21 cents. White Pekin ducks continue firm and active at 28 to 30 cents with other varieties ranging from 26 to 28 cents. Turkeys are in light supply, but few are wanted at 27 to 28 cents, while geese are very slow at 25 to 28 cents.

Eggs

Strictly fancy fresh, new-laid eggs continue very scarce and the market continues to rule very firm with supplies not sufficient for demands, and quotations are for the most part only nominal as in many instances liberal premiums are being obtained over quotations which are as follows: Nearby firsts, 70 cents; current receipts 68 cents flat; western fresh, 68 to 70 cents. Fancy, carefully selected and candled eggs are jobbing out at 75 to 78 cents per dozen.

LANCASTER PRODUCE MARKET

Lancaster, Pa., Jan. 21, 1918.

An unexpected and unexplained increase in the quantity of fresh eggs offered at today's market caused a sharp break in the prices and the rates declined as low as 58 cents a dozen. Some sales were closed at 55 cents. Butter was also abundant and was 5 cents lower than last week. Potatoes were scarce and last week's prices were maintained.

Butter and Eggs.—Creamery butter, 55@58c per lb; country butter, 55c; fresh eggs, 55@58c per dozen; storage eggs, 45c.

Poultry.—Dressed, old chickens, $1.25@1.75; dressed young chickens, $1@1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Fruits.—Lima beans, 18c pint; lettuce, 5@12c head; cauliflower, 15@20c head; eggplant, 5@10c each; sweet potatoes, 30c ½ pk; potatoes, $1.10@1.40 bu; do., 12@20c ½ pk; spinach, 20c ½ pk; pears, 20@25c ½ pk; apples, 20@30c ½pk.

Grain Market.—Milling wheat, $2; damp wheat, $1.80; new ear corn, $1.50; rye, $1.65; oats, 65c; No. 1 timothy hay, $25; clover hay, $18; wheat straw, $12; oat straw, $10.

YORK PRODUCE MARKET

York, Pa., Jan. 21, 1918.

There has been little if any, change in market conditions last week. Continued cold weather seems to interfere much with the buying activities. Reports from various parts of the county indicate a large quantity produce, especially potatoes, has been frozen. Cellars and storage houses that have never been known to freeze, were caught this time.

Eggs.—58@60c per dozen.

Butter.—Country, 48@54c lb; separator, 52@55c. Milk, 10c qt.

Poultry.—Not so plentiful. Hens, 19@20c lb; dressed, 50c@$1.25 each.

Vegetables.—Potatoes, 12@20c ½ pk; 85c @$1.25 bu. Cabbage, 3@10c hd. Lettuce, 5 @15c hd. Beets, 5c bch. Radishes, 6c bch. Onions, 15c bx; 25@30c ½ pk. Lima beans, 35@40c qt. Soup beans, 15@20c pt. Celery, 5@10c stalk. Turnips, 20@25c ½ pk.

Fruit.—Apples, 15@40c ½ pk. Pears, 10c bx; 15@25c ½ pk.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c lb. Back-bone, 28@30c lb. Spare-ribs, 32c lb. Tenderloin, 40@48c lb. Steak, 34@38c lb. Pudding, 24@30c lb. Lard, 32c lb. Cured hams, 40c, whole.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 90c; rye, $1.65; bran, $2.50 cwt; middlings, $3 cwt.

Wholesale Grain Market.—Wheat, $2.08; corn, $1.60; oats, 80c; rye, $1.40; bran, $44 ton; middlings, $50@57 ton.

NEW YORK PRODUCE

New York City, Jan. 21, 1918.

Butter is arriving slowly and is in good demand. Cheese market quiet and firm. Light arrivals of eggs. Supply of dressed poultry small. Potato market steady and little changed.

Butter.—Creamery, extras, (92 score), per pound, 54c; higher score, 54½@55c; thirds to firsts, 43@53c; state dairy, 43@44c; ladles, 37@40c.

Eggs.—Fresh gathered extras, 71@72c; extra firsts, 70c; nearby white, fine to fancy, 75c; ordinary to good, 65@72c; browns 72@73c.

Dressed Poultry.—Philadelphia and Long Island broilers, fancy, 45@50c; old roosters, 22@23c; squabs, $2.75@7.25 per dozen. Spring ducks, per lb., 22@28c; turkeys, fresh killed, 36c; capons, 35@40c lb.

Vegetables and Greens.—Beets, per 100 bunches, $2@4. Onions, per 100-lb. bag, $2 @3. Potatoes, Jersey, $2.75@3.33 per 100 lbs; state and western, $2.75@3 per 100 lbs. Carrots, $2@3.50 bbl.

Apples.—McIntosh, $4@7; York Imperial, $4@5.25; Twenty Ounce, $4@5.50; King, $4@6; Baldwin, $3.50@6.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Jan. 21, 1918.

Beef Cattle.—Embargoes in the West held up receipts and the market ruled firm and generally higher under a good demand.

Steers, best, $13.75; fair to good, $11.25 @12.75; common, $10.25@11.25; bulls, $8.25@10.25; choice higher; cows, fat, per lb. $8.25@9.75; extra choice higher; medium, per lb., $6.75@8.25; ordinary, per lb., $5.25@6.75; calves, exceptional lots, $17 @17.50; good to choice, $15.50@16.50; medium, $12@13; common, $10@11; Tennessee and southern, $8@16.

Sheep and Lambs.—The market for sheep ruled firm at the recent advance, with supplies small and demand fairly active. Lambs were in good request and again higher.

Sheep.—Wethers, extra, $13.50@14; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $11@12. Lambs.—Choice, $19@19.50; do., medium, $17.50@18.50; inferior, $15@16.50.

Hogs.—Demand was fair and values were firmly held under light offerings. Quotations for best western, $18.50@18.75.

City Dressed Stock.—Transportation difficulties held up receipts to a very great extent, and the market ruled firm under a fairly active demand.

Steers, 15@21c; heifers, 14@18c; cows, 12½@18c; calves, 24@25c; southerns and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extras, 25c; lambs, 27@28c; extras, 29c; hogs, 25c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Jan. 21, 1918.

Butter.—As usual on Saturday there was little trading on the wholesale market, but supplies were small and prices were firmly maintained.

Western, fresh, solid-packed creamery, extra, 53c; higher-scoring goods, 54@55c; extra firsts, 50@51c; firsts, 47@49c; seconds, 45@46c; sweet creamery extra, 54c; undergrades, 51@53c; nearby prints, fancy, 57c; do. average extra, 54@56c; firsts, 49@51c; seconds, 46@48c; special brands jobbing at 58@60c.

Cheese.—The market ruled firm, with a fair demand.

New York full cream, fancy June, 25½c; specials higher; do. fresh made, best 23¾ @23½c; do., fair to good, 22@23c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Jan. 21, 1918.

Baled Hay and Straw.—Receipts, 144 tons of hay and 1 car of straw. Hay ruled firm with supplies closely cleaned up. Straw was quiet, but firmly held.

Timothy hay, according to location—No. 1 large bales, $29.50@30; No. 1 small bales, $29.50@30; No. 2, $28@29; No. 3, $25@26; sample, $20@22; no grade, $16@18. Clover-mixed hay—Light mixed, $28@29; No. 1 do., $26.50@27.50; No. 2 do., $23.50@24.50.

Straw.—No. 1 straight rye, $18@18.50; No. 2 do., $17@17.50; No. 1 tangled rye, $16.50@17.50; No. 2 do., $15.50@16; No. 1 wheat straw, $15.50@16; No. 2 do., $14.50 @15; No. 1 oat straw, $15.50@16; No. 2 do., $14.50@15.

Bran.—The market was quiet with small but ample offerings at former rates.

Soft winter bran, in 100-lb. sacks, per ton, nominal; spring bran, in 100-lb sacks, per ton, $42.50@43.

NEW YORK MILK MARKET

New York City, Jan. 21, 1918.

The demand for milk has not fallen off as much as some dealers expected in view of the increase in price. For the wholesale trade it is normal for January. Some falling off is reported in the retail bottled trade. Transportation conditions have caused dealers a great deal of trouble. Western New York milk did not come in freely because of storm conditions. Box cars were used on some roads in place of the usual milk cars. Empty cans could not be returned to the country promptly by the railroads.

Rates to the producers of Grade B in the first district for January are $3.52 a hundred for 3 percent milk; $3.76, or approximately 7.99 cents a quart for 3.6 percent; and $3.92 for 4 percent.

Receipts of milk and cream in 40-quart cans for week ending January 19 were as follows:

Railroad	Milk	Cream
Erie	89,170	1,675
Susquehanna	5,925	28
West Shore	9,490	791
Lackawanna	55,790	795
N. Y. Central (long haul)	95,588	1,195
Ontario	34,087	1,483
Lehigh Valley	39,682	592
New Haven	4,672	16
Pennsylvania	8,865	170
Other souces	5,490	145
Totals	298,759	6,890

TOBACCO MARKET

At a meeting of the Leaf Tobacco Board of Trade special attention was given the probability of growers stripping their tobacco before it is sufficiently dried. The operation has been so unduly delayed that growers have almost despaired of favorable weather, but they should be patient as buyers have full right to expect, in fact to require, delivery in good condition which is practically impossible at present. It is better to wait and be safe than to go ahead and be sorry. There was considerable inquiry for the small unsold portion of last year's crop but climatic conditions were such as to practically preclude the action of buyers. When matters become normal no one will need wait long for a buyer and the latter will have to be quite alert if he gets anything. There were few if any sales during the week but it is known that prices were steady and unchanged as compared with the high time some weeks ago. The better offerings would have been salable at around $30 per cwt. with the most inferior and damaged at one-half the amount. Naturally much attention has turned to the forthcoming crop of the present year and it is known that the uncertainty as to labor and as to price is impossible to fathom. It is probable, however, that there will be no marked diminution in labor as compared with last year and that the supply of tobacco still being short, prices will remain about as at present with more chances for advances than for declines.—H. E. Tweed, Jan. 21, 1918.

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SPLIT HICKORY BUGGIES are known everywhere for their superior style, finish and durability. My direct-from-factory selling plan and big output save you money. Over 250,000 in use — the most popular buggies built.

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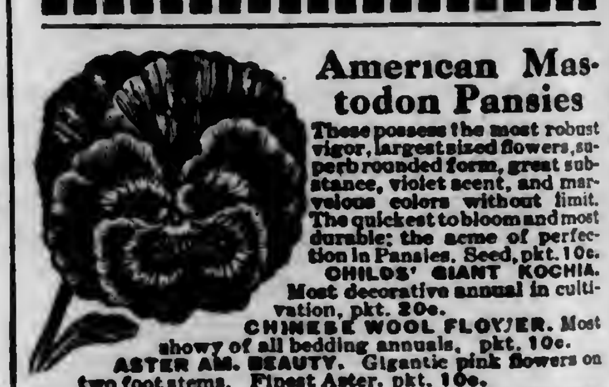
THE OHIO CARRIAGE MFG. CO.
Station 41 Columbus, Ohio


American Mastodon Pansies

These possess the most robust vigor, largest sized flowers, superb rounded form, great substance, violet scent, and marvelous colors without limit. The quickest to bloom and most durable; the acme of perfection in Pansies. Seed, pkt. 10c.

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ASTER AM. BEAUTY. Gigantic pink flowers on two foot stems. Finest Aster. pkt. 10c.

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WM. J. MALCOMSOM ESTATE
350 N. 5th St., Philadelphia

SOUTH DAKOTA with its limited farm acreage is placed fourth in production by the Government report for 1917, giving it first place per farm and per capita. The state will loan money for development of its farms. If you would share in this, get bulletins of Immigration Department, Chas. McCaffree, Commissioner, Capitol 70, Pierre, S. D.

NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

SYNOPSIS OF PREVIOUS CHAPTERS

Henry deSpain is employed as Manager of a stage line running thru a rough mining country of the West. Soon after taking his position he encounters the Morgan gang. In a number of conflicts over the stage line property, deSpain is victorious. He makes good as a manager, but he icurs the lasting enmity of the member of the gang. In a fight he is wounded and carried unconscious by his horse to the foot of Music Mountain. There he was found and nursed back to health by Nan Morgan, niece of the gang leader. De Spain falls in love with Nan, and they become engaged. The gang members are furious, and old Duke Morgan refuses to permit Nan to leave the house or to communicate with deSpain in any way. After a week of suspense, deSpain receives a mysterious message, presumably from Nan, asking him to take her from the mountain home. He knows that the effort means a fight with the entire gang, but he makes his plans to ride into the stronghold in the morning. He rides into the "Gap", leaving his two friends, Lefever and Bob Scott, to come in the next morning if they have heard nothing from him.

CHAPTER XXV (Continued)

Mountains never look blacker than when one rides into them conscious of the presence of enemies and alert for signs and sounds. But custom dulls the edge of apprehension. De Spain rode slowly up the main road without expecting to meet any one, and he reached the rise where the trail forked to Duke's ranch unchallenged. Here he stopped his horse and looked down toward the roof that sheltered Nan. Night had fallen everywhere, and the increasing rain obscured the outline of the house. But a light shone through one uncurtained window. He waited some time for a sound of life, for a door to open or close, or for a dog to bark—he heard nothing. Slipping out of the wet saddle, he led his horse in the darkness under the shelter of the lone pine tree and, securing him, walked slowly toward the house.

The light came from a window in the living room. Upstairs and toward the kitchen everything was dark. De Spain walked gingerly around to where he could command the living room window. He could see within, the figures of three men but, owing to the dim light and the distance at which he stood, he could identify none of them with certainty. Mindful of the admonitions he had been loaded with, he tramped around the house in narrowing circles, pausing at times to look and listen. In like manner he circled the barn and stables, until he had made sure there was no ambush and that he was alone outside. He then went among the horses and, working with a flash light, found Nan's pony, a bridle and, after an ineffectual search for a saddle, led the bareback horse out to where his own stood. Walking over to Nan's window he signalled and called to her. Getting no answer, he tossed a bit of gravel up against her window. His signal met with no response and, caching his rifle under the kitchen porch, he stepped around to the front of the house, where, screened by a bit of shrubbery, he could peer at close range into the living room.

Standing before the fire burning in the open hearth, and with his back to it, he now saw Gale Morgan. Sitting bolt upright beside the table, square-jawed and obdurate, his stubby brier pipe supported by his hand and gripped in his great teeth, Duke Morgan looked uncompromisingly past his belligerent nephew into the fire. A third and elderly man, heavy, red-faced, and almost toothless as he spoke, sat to the right of the table in a rocking chair, and looked at Duke; this was the old lawyer and justice from Sleepy Cat, the sheriff's brother—Judge Druel.

Nan was not to be seen. Gale, big and aggressive, was doing most of the talking, and energetically, as was his habit. Duke listened thoughtfully, but seemingly with coldness. Druel looked from Gale to Duke, and appeared occasionally to put in a word to carry the argument along.

De Spain suspected nothing of what they were talking about, but he was uneasy concerning Nan, and was not to be balked, by any combination, of his purpose of finding her. To secure information concerning her was not possible, unless he should enter the house, and this, with scant hesitation, he decided to do.

He wore a snug-fitting leathern coat. He unbuttoned this and threw it open as he stepped noiselessly up to the door. Laying his hand on the knob, he paused, then, finding the door unlocked, he pushed it slowly open.

The wind, rushing in, upset his calculations and blew open the door leading from the hall into the living room. A stream of light in turn shot through the open door, across the hall. Instantly de Spain stepped inside and directly behind the front door—which he now realized he dare not close—and stood expectant in the darkness. Gale Morgan, with an impatient exclamation, strode from the fireplace to close the front door.

As he walked into the hall and slammed the front door shut, he could have touched with his hand the man standing in the shadow behind it. De Spain, not hoping to escape, stood with folded arms, but under the elbow of his left arm was hidden the long muzzle of his revolver. Holding his breath, he waited. Gale's mind was apparently filled with other things. He did not suspect the presence of an intruder, and he walked back into the living room, partly closing the second door. De Spain, following almost on his heels, stepped past this door, past the hall stairs opposite it, and through a curtained opening at the end of the hall into the dining room. Barely ten feet from him, this room opened through an arch into the living room, and where he stood he could hear all that was said.

"Who's there?" demanded Duke gruffly.

"Nobody," said Gale. "Go on, Druel."

"That door never opened itself," persisted Duke.

"The wind blew it open," said Gale impatiently.

"I tell y' it didn't," responded Duke sternly; "somebody came in there, or went out. Maybe she's slipped y'."

"Go upstairs and see," bellowed Gale at his uncle.

Duke walked slowly out into the hall and, with some difficulty, owing to his injured back, up the stairs. A curtain hung beside the arch where de Spain stood, and this he now drew around him. Gale walked into the hall again, searched it, and waited at the foot of the stairs. De Spain could hear Duke's rough voice upstairs, but could neither distinguish his words nor hear any response to them. Within a moment the elder man tramped heavily down again, saying only, "She's there," and, followed by Gale, returned to the living room.

"Now go on, Druel," exclaimed Gale, sitting down impatiently, "and talk quick."

Druel talked softly and through his nose: "I was only going to say it would be a good idea to have two witnesses."

"Nita," suggested Gale.

Duke was profane. "You couldn't keep the girl in the room if she had Nita to help her. And I want it understood, Gale, between you and me, fair and square, that Nan's goin' to live right here with me after this marriage till I'm satisfied she's willing to go to you—otherwise it can't take place, now nor never."

De Spain opened his ears. Gale felt the hard, cold tone of his crusty relative, and answered with like harshness: "What do you keep harping on that for? You've got my word. All I want of you is to keep yours—understand?"

"Come, come," interposed Druel. "There's no need of hard words. But we need two witnesses. Who's going to be the other witness?"

Before any one could answer de Spain stepped out into the open archway before the three men. "I'll act as the second witness," he said.

With a common roar the Morgans bounded to their feet. They were not unused to sudden onslaughts, nor was either of them a man to shrink from a fight at short quarters, if it came to that, but blank astonishment overwhelmed both. De Spain, standing slightly sidewise, his coat lapels flapped wide open, his arms akimbo, and his hands on his hips, faced the three in an attitude of readiness only. He had reckoned on the instant of indecision which at times, when coupled with apprehension, paralyzes the will of two men acting together. Under the circumstances either of the Morgans alone would have whipped a gun on de Spain at sight. Together, and knowing that to do so meant death to the one that took the first shot from the archway, each waited for the other; the fraction of a second unsettled their purpose. Instead of bullets, each launched curses at the intruder, and every second that passed led away from a fight.

De Spain took their oaths, demands, and abuse without batting an eye. "I'm here for the second witness," was all he repeated, covering both men with short glances. Druel, his face muddily white as the whiskey bloat deserted it, shrunk inside his shabby clothes. He seemed, every time de Spain darted a look at him, to grow visibly smaller, until his loose bulk had shrivelled inside an armchair hardly large enough normally to contain it.

De Spain with each epithet hurled at him took a dreaded forward step toward Gale, and Druel, in the line of fire, brought his knees up and his head down till he curled like a porcupine. Gale, game as he undoubtedly was, cornered, felt perhaps recollections of Calabasas and close quarters with the brown eyes and the burning face. What they might mean in this little room, which de Spain was crossing step by step, was food for thought. Nor did de Spain break his obstinate silence until their burst of rage had blown. "You've arranged your marriage," he said at length. "Now pull it."

"My cousin's ready to marry me, and she's goin' to do it tonight," cried Gale violently.

Duke, towering with rage, looked at de Spain and pointed to the hall door. "You hear that! Get out of my house!" he cried, launching a vicious epithet with the words.

"This isn't your house," retorted de Spain angrily. "This house is Nan's, not yours. When she orders me out I'll go. Bring her down," he thundered, raising his voice to shut off Duke, who had redoubled his abuse. "Bring her into this room," he repeated. "We'll see whether she wants to get married. If she does, I'll marry her. If she doesn't, and you've been putting this up to force her into marrying, so help me God, you'll be carried out of this room tonight, or I will." He whirled on her uncle with an accusing finger. "You used to be a man, Duke. I've taken from you here tonight what I would take from no man on earth but for the sake of Nan Morgan. She asked me never to touch you. But if you've gone into this thing to trap your own flesh and blood, your dead brother's girl, living under your own protection, you don't deserve mercy, and tonight you shall have what's coming to you. I've fought you both fair, too fair. Now —before I leave—its my girl of both of you."

He was standing near Druel. Without taking his eyes off the other men, he caught Druel with his left hand by the coat collar, and threw him halfway across the room. "Get upstairs, you old carrion, and tell Nan Morgan, Henry de Spain is here to talk to her."

Druel, frightened to death, scrambled into the hall. He turned on de Spain. "I'm an officer of the law. I arrest you for trespass and assault," he shouted, shaking with fear.

"Arrest *me?*" echoed de Spain contemptuously. "You scoundrel, if you don't climb those stairs I'll send you to the penitentiary the day I get back to town. Upstairs with your message!"

"It isn't necessary," said a low voice in the hall, and with the words Nan appeared in the open doorway. Her face was white, but there was no sign of haste or panic in it; de Spain choked back a breath; to him she never had looked in her silence so awe-inspiring.

He addressed her, holding his left hand out with his plea. "Nan," he said, controlling his voice, "these men were getting ready to marry you to Gale Morgan. No matter how you feel toward me now, you know me well enough to know that all I want is the truth: Was this with your consent?"

She stepped into the line of fire between her cousin and de Spain as she answered. "No. You know I shall never marry any man but you. This vile bully," she turned a little to look at her angry cousin, "has influenced Uncle Duke—who never before tried to persecute or betray me—into joining him in this thing. They never could have dragged me into it alive. And they've kept me locked for three days in a room upstairs, hoping to break me down."

"Stand back, Nan."

If de Spain's words of warning struck her with terror of a situation she could not control, she did not reveal it. "No," she said resolutely. "If anybody here is to be shot, I'll be the first. Uncle Duke, you have always protected me from Gale Morgan; now you join hands with him. You drive me from this roof because

I don't know how I can protect myself under it."

Gale looked steadily at her. "You promised to marry me," he muttered truculently. "I'll find a way to make you keep your word."

A loud knocking interrupted him, and, without waiting to be admitted, Pardaloe, the cowboy, opened the front door and stalked boldly in from the hall.

If the situation in the room surprised him he gave no evidence of it. And as he walked in Nan disappeared. Pardaloe was drenched with rain, and taking off his hat as he crossed the room to the fire, he shook it hard into the blazing wood.

"What do you want, Pardaloe?" snapped Duke.

Pardaloe shook his hat once more and turned a few steps so that he stood between the uncurtained window and the light. "The creek's up," he said to Duke in his peculiarly slow, steady tone. "Some of Satt's boys are trying to get the cattle out of the lower corral." He fingered his hat, looked first at Duke, then at Gale, then at de Spain. "Guess they'll need a little help so I asked Sassoon to come over—" Pardaloe jerked his head indicatively toward the front. "He's outside with some of the boys now."

"Tell Sassoon to come in here!" thundered Gale.

De Spain's left arm shot out. "Hold on, Pardaloe; pull down that curtain behind you!"

"Don't touch that curtain, Pardaloe!" shouted Gale Morgan.

"Pardaloe," said de Spain, his left arm pointing menacingly and walking instantly toward him, "pull that curtain or pull your gun, quick." At that moment Nan, in hat and coat, reappeared in the archway behind de Spain. Pardaloe jerked down the curtain and started for the door. De Spain had backed up again. "Stop, Pardaloe," he called. "My men are outside that door. Stand where you are," he ordered, still enforcing his commands with his right hand covering the holster at his hip. "I leave this room first. Nan, are you ready?" he asked, without looking at her.

"Yes."

Her uncle's face whitened. "Don't leave this house tonight, Nan," he said menacingly.

"You've forced me to, Uncle Duke."

"Don't leave this house tonight."

"I can't protect myself in it."

"Don't leave this house—most of all, with that man!" He pointed at de Spain with a frenzy of hatred. Without answering, the two were retreating into the semidarkness of the dining room. "Nan," came her uncle's voice, hoarse with feeling, "you're saying good-by to me forever."

"No, uncle," she cried. "I am only doing what I have to do."

"I tell you I don't want to drive you from this roof, girl."

A rush of wind from an opening door was the only answer from the dark dining room. The two Morgans started forward together. The sudden gust sucked the flame from the living room lamp up into the chimney and after a brief, sharp struggle extinguished it. In the confusion it was a moment before a match could be found. When the lamp was relighted the Morgans ran into the dining room. The wind and rain poured in through the open north door. But the room was empty.

Duke turned on his nephew with a choking curse. "This," he cried, beside himself with fury, "is your work!"

CHAPTER XXVI

Flight

It was a forbidding night. Moisture-laden clouds, drifting over the Superstition Ridge, emptied their fulness against the face of the mountain to a downpour and buried the Gap in impenetrable darkness. De Spain, catching Nan's arm, spoke hurriedly, and they hastened outside toward the kitchen. "We must get away quick," he said as she buttoned her coat. And, knowing how she suffered in what she was doing, he drew her into the shelter of the porch and caught her close to him. "It had to come, Nan. Don't shed a tear. I'll take you straight to Mrs. Jeffries. When you are ready, you'll marry me; we'll make our peace with your Uncle Duke together. Great God! What a night! This way, dearie."

"No, to the stable, Henry! Where's your horse?"

"Under the pine, and yours, too. I found the pony, but I couldn't find your saddle, Nan."

"I know where its hidden. Let's get the horses."

"Just a minute. I stuck my rifle under this porch." He stooped and felt below the stringer. Rising in a moment with the weapon on his arm, the two hurried around the end of the house toward the pine tree. They had almost reached this when a murmur unlike the sounds of the storm made de Spain halt his companion.

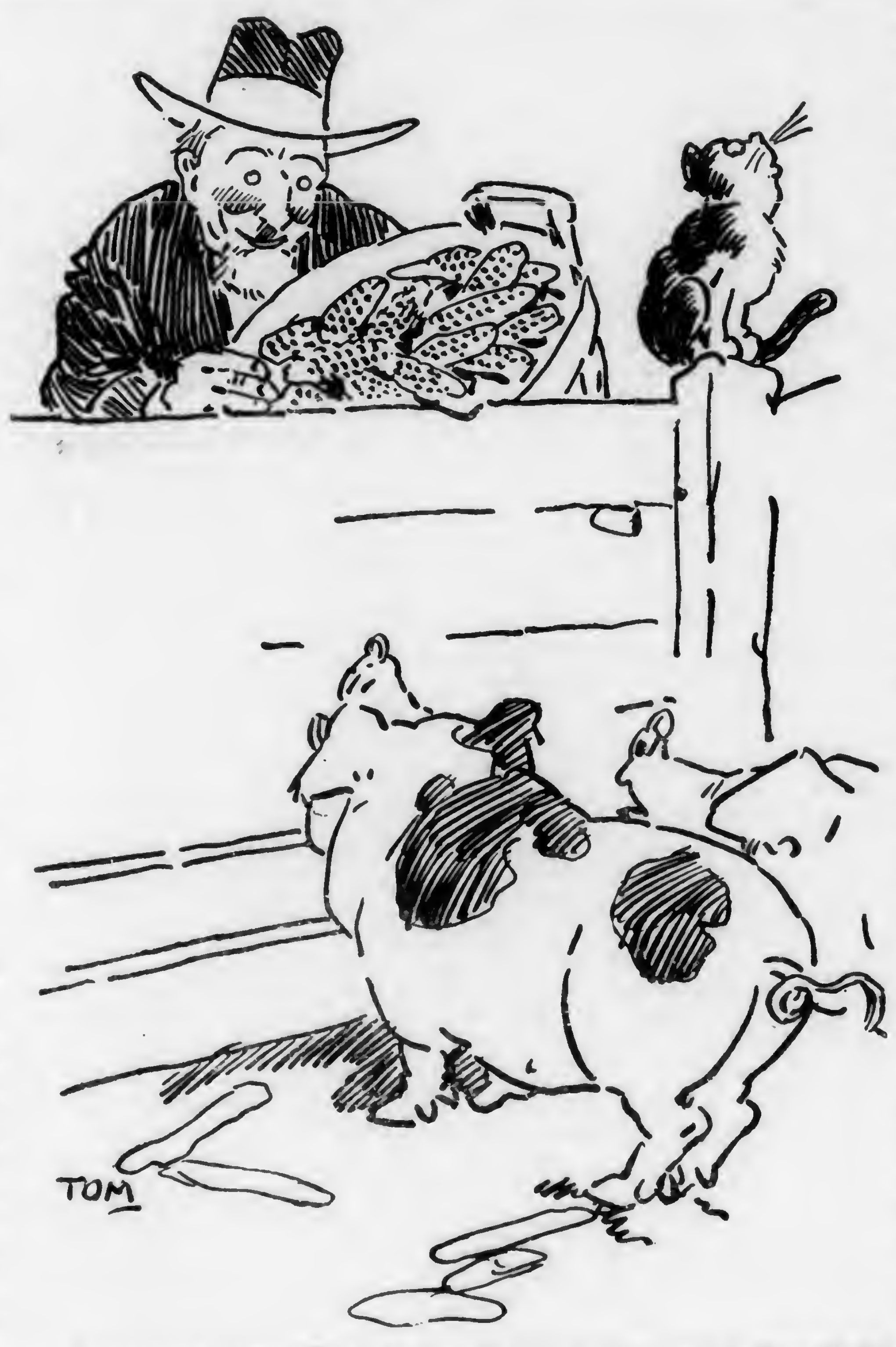
"What is it?" she whispered. He listened intently. While they stood still the front door of the house was opened hurriedly. A man ran out along the porch toward the stable. Neither Nan nor de Spain could make out who it was, but de Spain heard again the suspicious sound that had checked him. Without speaking, he took Nan and retreated to the corner of the house. "There is somebody in that pine," he whispered, "waiting for me to come after the horses. Sassoon may have found them. I'll try it out, anyway, before I take a chance. Stand back, Nan."

He put her behind the corner of the house, threw his rifle to his shoulder, and fired as nearly as he could in the darkness toward and just above the pine. Without an instant's hesitation a pistol-shot answered from the direction in which he had fired, and in another moment a small fusillade followed. "By the Almighty," muttered de Spain, "we must have our horses, Nan. Stay right here. I'll try driving those fellows off their perch."

She caught his arm. "What are you going to do?"

"Run in on them from cover, wherever I can find it, Nan, and push them back. We've got to have those horses."

"Henry, we can get others from the stable."



Uncle Amos Says: "This last investigation of the meat packers is diggin' up some mighty interestin' reading for the public. So did the last investigation, and the next to the last, and the next to the next to the last. Somethin' more than newspaper talk will be required to clean up the meat business. Forty-five-cent sausage from fifteen-cent pork sounds suspicious even in these days of high and fancy finance".

"There may be more men waiting there for us."

"If we could only get away without a fight!"

"This is Sassoon and his gang, Nan. You heard Pardaloe. These are not your people. I've got to drive 'em, or we're gone, Nan."

"Then I go with you."

"No."

"Yes!" Her tone was unmistakable.

"Nan, you can't do it," whispered de Spain energetically. "A chance bullet—"

She spoke with decision: "I go with you. I can use a rifle. Better both of us be killed than one. Help me up on this roof. I've climbed it a hundred times. My rifle is in my room. Quick, Henry."

Overruling his continued objections, she lifted her foot to his hand, caught hold of the cornerpost, and springing upward got her hands on the low end of the roof boards. With the agility of a cat, she put her second foot on de Spain's shoulder, gained the sloping roof, and scrambled on her hands and knees up toward the window of her room. The heavy rain and the slippery boards made progress uncertain, but with scarcely any delay, she reached her window and pushed open the casement sash. A far-off peal of thunder echoed down from the mountains. Luckily, no flash had preceded it, and Nan, rifle in hand, slid safely down to the end of the lean-to, where de Spain, waiting, caught one foot on his shoulder, and helped her to the ground. He tried again to make her stay behind the house. Finding his efforts in vain, he directed her how to make a zigzag advance, how to utilize for cover every rock and tree she could find in the line toward the pine, and, above all, to throw herself flat and sidewise after every shot—and not to fire often.

In this way, amid the falling of rain and the uncharted dangers of the darkness, they advanced on the pine-tree. Surprisingly little effort seemed necessary to drive off whoever held it. De Spain made his way slowly but safely to the disputed point and then understood—the horses were gone.

He had hardly rejoined Nan, who waited at a safe distance, and told her the bad news, when a fresh discharge of shots came from two directions—seemingly from the house and the stable. A moment later they heard sharp firing far down the Gap. This was their sole avenue of escape. It was bad enough, under the circumstances, to negotiate the trail on horseback—but to expose Nan, who had but just put herself under his protection, to death from a chance bullet while stumbling along on foot, surrounded by enemies—who could follow the flash of their own shots if they were forced to use their rifles, and close in on them at will—was an undertaking not to be faced.

They withdrew to the shelter of a large rock familiar to Nan even in the dark. While de Spain was debating in his mind how to meet the emergency, she stood at his side, his equal, he knew, in courage, daring, and resource, and answered his rapid questions as to possible gateways of escape. The rain, which had been abating, now ceased, but from every fissure in the mountains came the roar of rushing water, and little openings of rock and waterway that might have offered a chance when dry were now out of the question. In fact, it was Nan's belief that before morning

water would be running over the main trail itself.

"Yet," said de Spain finally, "before morning we must be a long way from this particular spot, Nan. Lefever is down there—I haven't the slightest doubt of that. Sassoon has posted men at the neck of the Gap—that's the first thing he would do. And if John heard my rifle when I first shot, he would be for breaking in here, and his men, if they've come up, would bump into Sassoon's. It would be insane for us to try to get out over the trail with Sassoon holding it against Lefever—we might easily be hit by our friends instead of our enemies. I'll tell you what, Nan, suppose I scout down that way alone and see what I can find out?"

He put the proposal very lightly, realizing almost as soon as he made it what her answer would be. "Better we go together," she answered in the steady tone he loved to hear. "If you were killed, what would become of me? I should rather be shot than fall into his hands after this—if there was ever a chance for it before, there'd be no mercy now. Let's go together."

He would not consent, and she knew he was right. But what was right for one was right, she told him, for both, and what was wrong for one was wrong for both. "Then, I'll tell you," he said suddenly, as when after long uncertainty and anxious doubt one chooses an alternative and hastens to follow it. "Retreat is the thing for us, Nan. Let's make for Music Mountain and crawl into our cave until morning. Lefever will get in here some time tomorrow. Then we can connect with him."

They discussed the move a little further, but there seemed no escape from the necessity of it, despite the hardship involved in reaching the refuge; and, realizing that no time was to be lost, they set out on the long journey. Every foot of the troublesome way offered difficulties. Water impeded them continually. It lay in shallow pools underfoot and slipped in running sheets over the sloping rocks that lay in their obscure path. Sometimes de Spain led, sometimes Nan picked their trail. But for her perfect familiarity with every foot of the ground they could not have got to the mountain at all.

Even before they succeeded in reaching the foot of it their ears told them of a more serious obstacle ahead. When they got to the mountain trail itself they heard the roar of the stream that made the waterfall above the ledge they were trying to reach. Climbing hardly a dozen steps, they found their way swept by a mad rush of falling water, its deafening roar punctured by fragments of loosened rock which, swept downward from ledge to ledge, split and thundered as they dashed themselves against the mountainside. On a protected floor the two stood for a moment, listening to the roar of the cataract that had cut them off of their refuge.

"No use, Nan," said de Spain. "There isn't any other trail, is there?"

She told him there was no other. "And this will run all night," she added. "Sometimes it runs like this for days. I ought to have known there would be a flood here. But it all depends on which side of the mountain the heavy rain falls. Henry," she said, turning to him and as if thinking of a question she wanted to ask, "how did you happen to come to me just tonight when I wanted you so?"

"I came because you sent for me," he answered, surprised.

"But I didn't send for you."

He stopped, dumfounded. "What do you mean, Nan?" he demanded uneasily. "I got your message on the telephone to come at once and take you away."

"Henry! I didn't send any message—when did you get one?"

"Last night, in my office in Sleepy Cat, from a man who refused to give his name."

"I never sent any message to you," she insisted in growing wonderment. "I have been locked in a room for three days, dearie. The Lord knows I wanted to send you word. Who ever telephoned a message like that? Was it a trap to get you in here?"

He told her the story—of the strenuous efforts he had made to discover the identity of the messenger—and how he had been balked. "No matter," said Nan, at last. "It could not have been a trap. It must have been a friend, surely, not an enemy."

"Or," said de Spain, bending over her as if he were afraid she might escape, and putting his face close to hers, "some mildly curious person, some idle devil, Nan, that wanted to see what two timid men would look like, mixed up in a real fight over the one girl in the mountains both are trying to marry at once."

"Henry," every time she repeated his name de Spain cared less for what should happen in the rest of the world, "what are we going to do now? We can't stay here all night—and take what they will greet us with in the morning."

He answered her question with another: "What about trying to get out by El Capitan?"

She started in spite of herself. "I mean," he added, "just to have a look over there, Nan."

"How could you even have a look a night like this?" she asked, overcome at the thought of the dizzy cliff.

"I don't mean at the worst to try to cross it until we get a glimpse of daylight. But its quite a way over there. I remember some good hiding-places along that trail. We may find one where I can build a little fire and dry you out. I'm more worried over you being wet all night than the rest of it. The question is, Can we find a trail up to where we want to go?"

"I know two or three," she answered, "if they are only not flooded."

The storm seemed to have passed, but the darkness was intense, and from above the northern Superstitions came low mutterings of thunder. Compelled to strike out over the rocks to get up to any of the trails toward El Capitan, Nan, helped by de Spain when he could help, led the ascent toward the first ledge they could hope to follow on their dangerous course.

The point at which the two climbed almost five hundred feet that night up Music Mountain is still pointed out in the Gap. An upturned rock at the foot, a stunted cedar jutting from the ledge at the point they finally gained, marked the beginning and end of their effort. No person, looking at that confused wall, willingly believes it could ever have been scaled in the dead of night. Torn, bruised, and exhausted, Nan, handed up by her lover, threw herself at last prostrate on the ledge at the real beginning of their trail, and from that vantage-point they made their way along the eastern side of Music Mountain for two miles before they stopped again to rest.

(To be continued.)

WHEN PRICES ARE HIGH *and* LABOR IS SHORT

the farmer MUST save time and effort, not only in producing, but in hauling. The larger the load and the faster the trip to market, the greater the profit.

Good roads have always helped the farmer. Now they are indispensable. Farm labor is scarce. Wages are high. Every hour wasted on the highway cuts down output and eats a hole in profits.

What the farmer needs is not a patch of hard road here and there, but a connected system of hard roads putting him in easy reach of his markets. And to get the best prices he needs **roads that stay good 365 days a year.**

There is no reason why farming communities should not have perfect systems of permanent highways. It is entirely up to them. The roads can be built in two or three seasons. When the cost is spread over fifteen or twenty years the annual tax for both interest and principal is only a few cents per acre. In Vermilion County, Illinois, for example, a magnificent concrete system is being built and the annual tax is only about 8c per acre per year, for 20 years, which covers the interest and gradually pays off the debt.

The farmer should act now in getting road plans under way to further his own interests. Systems of permanent highways benefit everyone, but to the farmer they are *indispensable.*

PORTLAND CEMENT ASSOCIATION

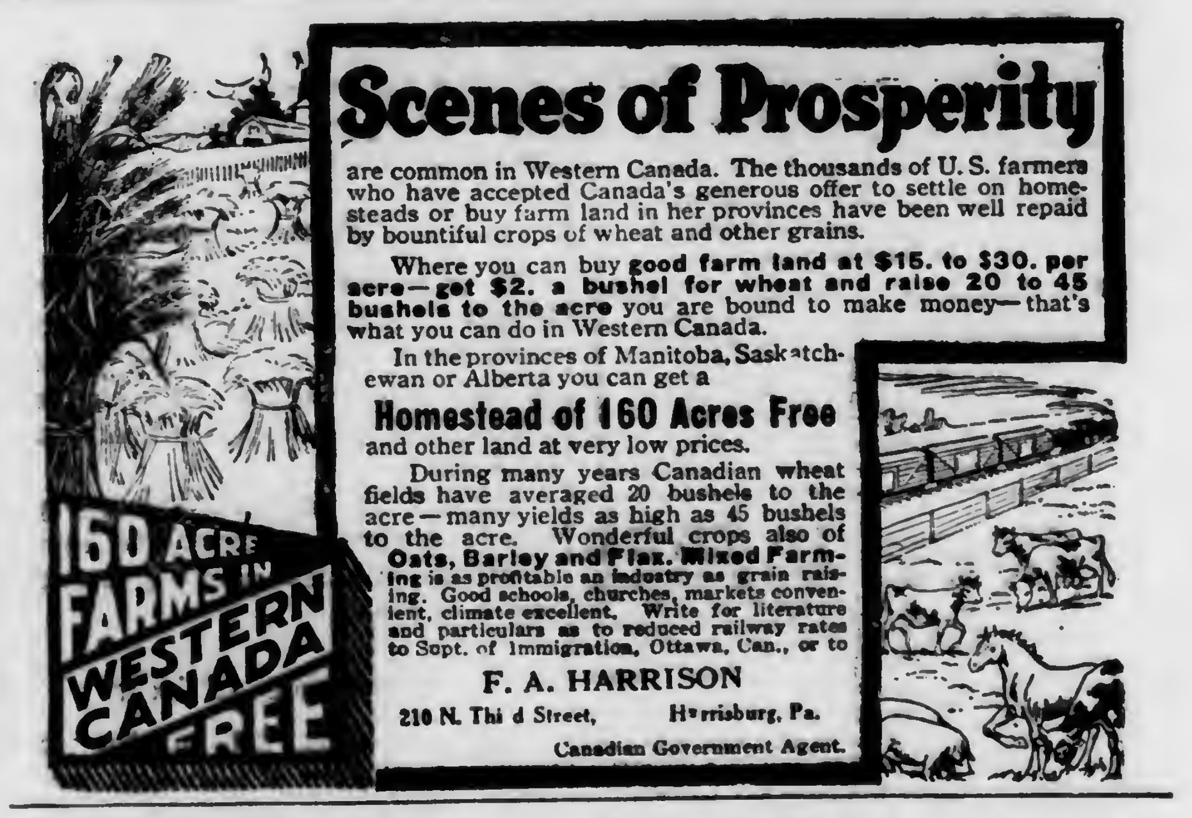
Offices at

ATLANTA
CHICAGO
DALLAS
DENVER
INDIANAPOLS

KANSAS CITY
MILWAUKEE
MINNEAPOLIS
NEW YORK
PARKERSBURG

PITTSBURGH
SALT LAKE CITY
SAN FRANCISCO
SEATTLE
WASHINGTON

CONCRETE FOR PERMANENCE


160 ACRE FARMS IN WESTERN CANADA FREE

Scenes of Prosperity

are common in Western Canada. The thousands of U. S. farmers who have accepted Canada's generous offer to settle on homesteads or buy farm land in her provinces have been well repaid by bountiful crops of wheat and other grains.

Where you can buy **good farm land at $15. to $30. per acre—get $2. a bushel for wheat and raise 20 to 45 bushels to the acre** you are bound to make money—that's what you can do in Western Canada.

In the provinces of Manitoba, Saskatchewan or Alberta you can get a

Homestead of 160 Acres Free

and other land at very low prices.

During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of **Oats, Barley and Flax. Mixed Farming** is as profitable an industry as grain raising. Good schools, churches, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

F. A. HARRISON

210 N. Third Street, Harrisburg, Pa.

Canadian Government Agent.

What 15c Will Bring You from the Nation's Capital

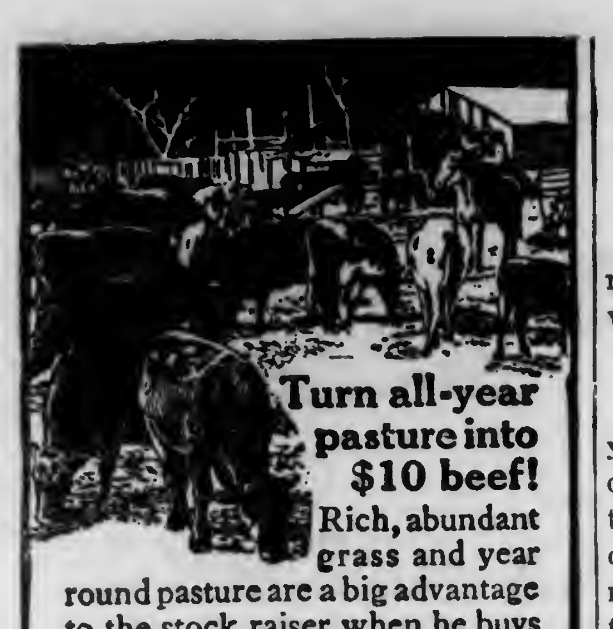
Washington, the home of the Pathfinder, is the nerve-center of civilization; history is being made at this world capital. The Pathfinder's illustrated weekly review gives you a clear, impartial and correct diagnosis of public affairs during these strenuous, epoch-making days.

The little matter of **15c** in stamps or coin will bring you the Pathfinder **13** weeks on trial. The Pathfinder is an illustrated weekly, published at the Nation's center, for the Nation: a paper that prints all the news of the world and tells the truth and only the truth; now in its 25th year. This paper fills the bill without emptying the purse; it costs but $1 a year. If you want to keep posted on what is going on in the world, at the least expense of time or money, this is your means. If you want a paper in your home which is sincere, reliable, entertaining, wholesome, the Pathfinder is yours. If you would appreciate a paper which puts everything clearly, fairly, briefly—here it is. Send **15c** to show that you might like such a paper, and we will send the Pathfinder on probation 13 weeks. The 15c does not repay us; we are glad to invest in new friends. THE PATHFINDER, Box 78, Washington, D. C.

WHAT YOUR OLD BAGS WILL BRING YOU

We pay for sound or mendable 100 lbs. Feed Bags, 10c each; 150 and 200 lbs. Bran, 15c each; Phosphate bags (not rotten), 8c each. We can use any size, any quantity. We pay freight and send returns promptly. Try us. Write to-day for tags and shipping instructions

BUFFALO BURLAP CO.. BUFFALO, N. Y.



Turn all-year pasture into $10 beef!
Rich, abundant grass and year round pasture are a big advantage to the stock raiser when he buys good land cheap, as he *can* in

Eastern Oklahoma along the M.K.&T.Ry.

The mild, short winters here demand little shelter for stock, and many of these new, low-priced farms will *pay for themselves* with *one* good crop of corn, wheat or oats. Here's just *one* of these Eastern Oklahoma farm bargains: 140 acres, Mayes county, two miles from good town; nice, smooth land, 75 acres in corn and oats, remainder in native blue stem grass; oats on 50 acres made 52 bu. per acre in 1917, and the land *costs only $45 per acre.* Eastern Oklahoma offers a wonderful combination of advantages. U. S. Agricultural Dept. reports it "exceptionally favorable for agriculture." *More* annual rainfall than in Iowa and Illinois, early plowing, long seasons, and soil adaptable to great variety of crops. Many owners are discovering oil.
The Eastern Oklahoma Farm Bureau has no land for sale; it has listed a number of farms for farmers looking for low-priced land that will bring them big returns.

FREE GUARANTEED FARM LISTS
and booklet, contain illustrated description of farms. Write to
R W. Hockeday, Colonization Agent,
Missouri, Kansas & Texas Ry.
1513 Railway Exchange, St. Louis, Mo.

Hogs Thrive on Tankage

Tankage builds big frames to carry fattening. Experiment station reports show that tankage is the cheapest and the best feed for hogs and growing pigs.

Martin's Abattoir Tankage

is carefully sterilized, especially prepared and ready to feed. It produces money makers for you. Buy direct from manufacturer and save money. Prices on request.

D. B. MARTIN COMPANY,
30th & MARKET STS., PHILA.

BUY THAT FARM IN THE NATION'S GARDEN SPOT
Virginia, the Carolines, Georgia, Alabama and Florida, and test the most favorable climate in the United States for successful gardening, fruit growing, general farming, livestock and dairying.
Information free.

Wilbur McCoy, Dept. A. & I. Agent, Jacksonville, Fla.
G. A. Cardwell, Dept. G, A. & I. Agent, Wilmington, N. C.

ATLANTIC COAST LINE RAILROAD
The Standard Railroad of the South.

Delivered TO YOU FREE
Your choice of 44 styles, colors and sizes in the famous line of "RANGER" bicycles, shown in full color in the big new Free Catalog. We pay all the freight charges from Chicago to your town.
30 Days Free Trial allowed on the bicycle you select, actual riding test in your own town for a full month. Do not buy until you get our *great new trial offer* and low Factory-Direct-To-Rider terms and prices.
TIRES LAMPS, HORNS, pedals, single wheels and repair parts for all makes of bicycles at half usual prices. No one else can offer such values and such terms.
SEND NO MONEY but write today for the big new Catalog. It's free.
Rider Agents Wanted
MEAD CYCLE COMPANY Dept. P-78 Chicago

For Sale, Used and Rebuilt Machinery
22 H. Peerless, steam traction engine, 22 H. Stevens, 22 H. Wood Bros., 22 H. Garr-Scott, 20 H. Baker, 20 H. Huber, 20 H. Rumley, 18 H. Garr-Scott, 18 H. Pitts, 18 H. Huber, 18 H. Nichols and Shepard, 18 H. Russell, 18 H. Baker, 18 H. Wood Bros., 16 H. Pitts, 16 H. Nichols and Shepard, 15 H. Case, 12 H. Case; 30 in. and 32 in. Advance grain threshers, 28 in. and 36 in. Case steel frame grain threshers, 30 in. and 34 in. Pitts, 32 in. Wood Bros., 32 in. Aultman-Taylor; 33 in. Port Huron; 17 x 22 Ann Arbor baling press; 14 x 18 Whitman, 14 x 18 Ohio. Write us for complete used machinery list. Also for new catalog of Greyhound machinery
The BANTING MFG. COMPANY
114 Superior St., TOLEDO, OHIO

Pennsylvania Dog Law

Main Provisions Condensed

Following is a condensation of the new Pennsylvania Dog Law which went into effect January 1, 1918.

License

On or before January 15 of each year every owner of a dog six months old or over must obtain a license from the county treasurer or from a justice of the peace, and shall pay a fee of not less than one dollar nor more than two dollars, for each male dog and each spayed female dog, and not less than two nor more than four dollars for each unspayed female dog, this fee to be determined by the commissioners of the several counties of the state. The treasurer shall issue with each license a metal tag which must be worn by dog at all times.

Night Straying Prohibited

The owner or keeper of every dog shall at all times between sunset and sunrise of each day, keep such dogs, either (a) confined within an enclosure from which it cannot escape, or (b) firmly secured by means of a collar and chain or other device so that it cannot stray beyond the premises on which it is secured, or (c) under the reasonable control of some person, or when engaged in lawful hunting accompanied by an owner or handler.

Female Dog

It is unlawful for the owner or keeper of any female dog to permit such dog to go beyond the premises of such owner at any time she is in heat unless such dog is properly held in leash.

It shall be unlawful for any person to harbor, or permit to remain about his premises any dog not having a license

Destruction of Dogs

Any person may kill any dog which he sees in the act of pursuing, worrying or wounding any live stock, or attacking any human beings whether or not such dog bears the proper license tag required by the provisions. There shall be no liability on such persons in damages or otherwise for such killing. Any unlicensed dog that enters any field shall constitute a private nuisance and the owner or tenant of such field or their agent or servant may kill such dog while it is in the field without liability or responsibility of any nature for such killing.

It shall be the duty of every police officer to seize and detain any dog or dogs which bear a proper license tag and which are found running at large and unaccompanied by its owner or keeper. The owner of a dog so detained shall be notified to claim such dog within ten days, and shall pay all reasonable expense incurred by reason of its detention before the dog is returned. If, after ten days from the giving of such notice such dog has not been claimed, such chief of police or his agent, constable or high constable shall dispose of such dog by sale, or by destruction in some humane manner. It shall be the duty of every police officer to kill every dog which does not bear a proper license tag. For failure to perform his duty under the provisions of this act, such police officer shall be liable to a penalty of $2 for each offense. For the performance of this duty he shall be paid the sum of $1 for detaining a licensed dog and the sum of $1 for the killing of a dog.

Damages

The term "live stock" shall include horses, stallions, colts, geldings, heifers, cows, calves, mules, jacks, jennets, burros, goats, kids, swine and sheep. The term "poultry" shall include all domestic fowl.

Whenever any person sustains any loss or damage to any live stock or poultry by dogs or any live stock of any person is necessarily destroyed because of having been bitten by such dog, complaint for damages should be made in writing to the township auditor or to any justice of the peace, magistrate or alderman of the township, town, borough, or city. On establishment of such claim as provided for by this law, payment shall be made from the county funds to the proper person. If the owner of the dog or dogs doing the damage be known, it shall be the duty of the county commissioners to notify such owners to kill said dog or dogs immediately. If said dog or dogs be killed by owner he shall be exempt from all further liabilities. Upon failure to kill said dog or dogs he shall be liable for the damages caused by the said dog or dogs.

Enforcement of Law

The enforcement of this law lies with the Secretary of Agriculture, County Commissioners and police officers. The term police officer shall mean any person employed or elected by this Commonwealth, or by a municipality, county or township and whose duty it is to preserve peace or to make arrest or to enforce the law. The term includes game, fish and forest wardens.

Violations and Penalties

Any person violating or failing or refusing to comply with any of the provisions of this act shall be guilty of a misdemeanor and, upon conviction, shall be sentenced to pay a fine not exceeding $100 or to undergo an imprisonment not exceeding three months, at the discretion of the Court. Any complaint of failure to enforce the law should be made to the County Commissioners and to the Secretary of Agriculture. Every citizen should interest himself to see that this law is enforced by those charged with this duty.

BERKSHIRE VICTORIES

Berkshire swine made an impressive showing at the 1917 International Live Stock Exposition. The accompanying illustration shows the trio of purebred Berkshire barrows that won the Grand Championship for pen of barrows at the show. These hogs were shown by the Hood Farm. They were senior yearlings and two of them weighed 625 pounds each. The Grand Champion barrow was also a purebred Berkshire, weighing 600 pounds. In the carcass contests, the Berkshires again won first, second and third places.

Grand Champion Pen of Barrows at 1917 International Live Stock Exposition—Purebred Berkshires.

ADVERTISING LIVE STOCK

In selecting a publication for advertising purposes, it is not wise to make your choice based on the rates for space alone. Circulation and the probable class of readers reached are of more importance. Still more important is the quality of the stock you have for sale. Two-dollar cockerels, ten-dollar pigs or twenty-dollar calves will move more quickly if advertised in papers having a large circulation in the state where they are published. Buyers strongly object to long-distance expressage on ordinary goods. If, however, the stock offered is of superior quality, and for that reason is hard to get, the high express charges do not form the same barrier in the eyes of the purchaser. For this class of stock it is better to buy advertising space in those papers having a wide circle of readers. Agricultural journals that can meet the requirements in circulation are, of course, the ideal medium, and are pretty sure to bring inquiries.

When more than one paper is used it is important that each be keyed that the advertiser may know which papers are pulling and which ones are not bringing any business. Farmers with large experience with this method of selling stock have found the only advisable way to key farm advertisements is by box numbers. For instance, one paper will be Box 52; another will be Box 100; a third may be Box 110. City firms frequently use department or desk numbers, but these do not sound convincing in farm advertising. If a key is to be valuable it must be of such a nature as to induce the person answering the advertisement to put the entire address on the envelope or post card.

Regarding the success of this system, one breeder who uses farm journals extensively, says: "In our advertising, I rarely get more than 5 percent of the inquiries unkeyed. Those that are unknown are pro-rated at the end of the month among the different papers, the distribution being governed by the relation that the number of inquiries from individual papers bears to the grand total. Thus, if there are 30 'unknowns' and one paper is bringing two inquiries to another's one, the former gets credited with 20 unknowns and the latter with only 10. In case a sale results from an unknown inquiry I write at the time of shipment asking in which paper our advertisement was seen in order that the proper paper may get the credit. Invariably I get the information."

Individual Effort

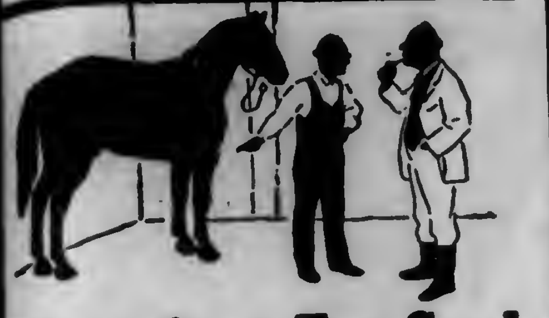
When an advertisement has brought an inquiry, it has done its part; whether the farmer makes a sale or not depends on his ability as a salesman. Promptness in answering inquiries is absolutely essential. The chances of making a sale are much more likely if followed up when the inquirer is evidently interested. Especially is this true concerning poultry. The average buyer selects half a dozen advertisers from his paper and writes a post card to each. Usually the business goes to the man who replies first.

When a letter or card has been received and answered, it should be filed. After a reasonable time has elapsed a "follow-up" letter should be sent. Sometimes a second and even a third may be found desirable. The object of these letters is to hasten the prospect's decision, to make him feel that the seller is especially interested in serving him and, if possible, to get some definite answer. Quite often such a procedure is all that is needed to effect a sale.

Many farmers hesitate to try their hand at writing advertisements because they feel that considerable skill and originality are required. It is a good plan not to put forward more than one article at once. Attention directed to one thing can be done more forcefully and has the most direct selling value. Always give full buying information by emphasizing the good points, frankly stating the price and, if possible, showing a picture of the product. Seeing is believing, and people like to know how the thing looks. Be sure to have readers understand that the farm is an institution. While most of the stress in a single advertisement should be put on one thing, other products for sale may be enumerated in a minor key. Thus by linking all advertising together, people who have found one article satisfactory are led to look upon the farm as a source of supply for the others.

In case of a beginner, advertising must frequently be looked upon as an investment rather than merely an item of expense. He can hardly expect the buying public will jump at the opportunity to buy from him the first time he inserts an advertisement in a newspaper. Many have spent years in building up their present reputations. Hence, money paid in thus securing the good will of the public must be considered as an investment, which, by close attention to the goods offered, the medium used and the method of handling inquiries will be rewarded by satisfactory dividends.—J. Hugh McKenney.

December crop reports show that the farmers of New York planted 512,000 acres of winter wheat as compared with 445,000 last year. The condition of the crop on December was only 84 percent, compared with 87 a year ago, and 94, the ten year average.



Spavin Gone For Good
"Last Winter," writes John W. Neal of Clifton, W. Va., "I used Save-The-Horse on spavin. Have waited some time to see if lameness would come back but the horse is fine and I would not take the price of a full bottle for what I have left."

SAVE-The-HORSE
(Trade Mark, Registered)
—the greatest of all remedies, is sold with a signed Guarantee to return money if it fails on Ringbone, Thoropin, SPAVIN or Shoulder, Knee, Ankle, Hoof or Tendon Disease. Every year for over 22 years, thousands of stubborn and supposedly incurable cases are cured by Save-The-Horse after all other methods failed. Be prepared! Write today for FREE 96-page horse BOOK, sample of guarantee and expert veterinary advice — all FREE. Always keep a bottle on hand for emergency.
TROY CHEMICAL CO.
70 State Street, Binghamton, N. Y.
Druggists everywhere sell Save-The-Horse with Signed Guarantee or we send it direct by Parcel Post Prepaid.

ABSORBINE
TRADE MARK REG.U.S.PAT.OFF
Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a SAFE ANTISEPTIC AND GERMICIDE
Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.00 a bottle, delivered. Describe your case for special instructions and Book 5 M free. ABSORBINE, JR., antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price $1 per bottle at dealers or delivered.
W. F. YOUNG, P.D.F., 154 Temple St., Springfield, Mass.

Bone Spavin
No matter how old the case, how lame the horse, or what other treatment has failed, try
Fleming's Spavin and Ringbone Paste, $2 a Bottle
One application usually enough; sometimes two required. Intended only for the established cases of Bone Spavin, Ringbone and Sidebone, causing chronic lameness.
Fleming's Spavin Liquid, $2 a Bottle
For the recent cases of Bone Spavin, Ringbone and Sidebone and for Bog Spavin, Splint, Curb, Soft Enlargements, etc. *Your money back if these remedies fail.* Write for Fleming's Vest-Pocket Veterinary Adviser. 192 pages, 67 illustrations.
FLEMING BROS. Chemists, 253 Union Stock Yards, Chicago, Ill.

Poultry

CHICKS that pay
Well hatched, well bred, from best heavy-egg strains of Reds, Rocks, Leghorns, Wyandottes, etc. FREE BOOK tells how to make more money from Poultry.
W. F. HILLPOT, Box 28, Frenchtown, N. J.

64 BREEDS Valuable New Poultry Book Free—108 pages. Fine pure-bred chickens, ducks, geese and turkeys. Choice, hardy, Northern raised. Fowls, eggs and incubators at low prices. America's greatest poultry farm. 24th year in business. Write today for Free Book.
R. F. NEUBERT CO., Box 819, Mankato, Minn.

DAY-OLD CHICKS
of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.
GOSHEN POULTRY FARMS, R 23 Goshen, Indiana

Baby Chicks S. C. White Leghorns. $12.50 per 100. Circular.
R. S. GOOD, PEACH BOTTOM, PA.

Hampton's Black Leghorns Day old chicks and eggs. Get my free circular before you order chicks; tells why the Black Leghorn is the greatest laying and most profitable breed on earth. Write today. Also White Leghorn Chicks. A. E. Hampton, Box F, Pittstown, N. J.

S. C. White Leghorns Tom Barron Strain of heavy layers. Send for catalog giving prices and description of choice breeding stock, baby chicks and eggs. Ivywood Poultry Farm, Box 71A, Avondale, Chester Co., Pa.

White Wyandottes Cockerels from laying strain, $2.50 each. Brothers of Pen 21, now leading in North American Contest. Bred from my exhibition line, $3 and $5.
A. J. FELL, WEST POINT, PA.

Look—Chicks $9. per 100 and up, for April delivery. 200,000 for 1918—8 best varieties. Our ninth year. Order early. Catalog free. KEYSTONE HATCHERY, Dept. 19, Richfield, Pa.

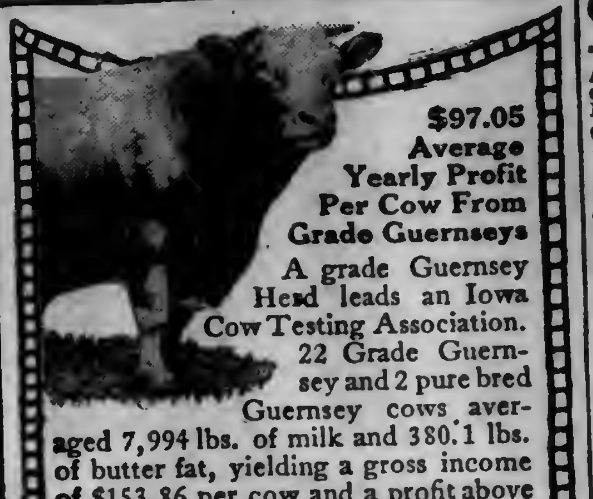
Silver and Golden Campine Cockerels, Golden Pullets and Indian Runner Drakes, $1 and $2 each.
I. R. TANGER, YORK SPRINGS, PA.

Light Brahmas Bargains in pullets and cockerels. Utility cockerels, $2.50; pullets $1.50 to $2.00. Wood strain.
Glen Dale Poultry Farm, Dillsburg, Pa.

Baby Chix B. Rock, Red—order now for Jan. and Feb. delivery. Satisfaction assured. JUSTA POULTRY FARM, Southampton, N. Y.

TELL the advertiser you saw adv. in Pennsylvania Farmer.

Dairy Cattle



$97.05 Average Yearly Profit Per Cow From Grade Guernseys
A grade Guernsey Herd leads an Iowa Cow Testing Association. 22 Grade Guernsey and 2 pure bred Guernsey cows averaged 7,994 lbs. of milk and 380.1 lbs. of butter fat, yielding a gross income of $153.86 per cow and a profit above the feed cost of $97.05 per cow.
Use a Guernsey Bull
It's the Guernsey Bull that wins in the battle with the scrub. Guernsey grade cows produce butter most economically. Write for full information. (5)
American Guernsey Cattle Club
Box M Peterboro, N. H.

The Short Cut to Greater Dairy Profits
in these days of high feed prices is better cows. The quickest way to get better cows is to
Own A PURE BRED Holstein Bull
In a recent test daughters of a purebred Holstein bull increased milk yield 95 percent; grand-daughters 245 percent over scrub dams.
Write for free information about this profitable breed. No obligation—we have nothing to sell.
The Holstein-Friesian Association of America, Box 218, Brattleboro, Vt.

Our herd of 226 Holsteins must be sold before Feb. 1st
48 high grade Holstein cows close springers. 53 high grade Holstein 2 year old heifers due in March. 47 high grade Holsteins ready to breed. 30 registered heifers ready to breed. 8 registered heifer calves. 25 registered bull calves 4 to 10 mo. old. 15 reg. Holsteins fresh and springers. Come and get first choice.
SPOT FARM
JOHN C. REAGAN, Tully, N. Y.

REGISTERED HOLSTEIN BULLS
Six to ten months old, nicely marked, some ready for light service. Write for particulars, stating just what you want.
ARTHUR DANKS, Mgr.,
Allamuchy Farms, Allamuchy, N. J.

Maple Lawn Holsteins
Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.
C. W. ELLIS, Jr., Cortland, N. Y.
Office, 31 1-2 Main St. Bell phone.

Penn State's Mermaid's Torono FOR SALE.
Sire: Figgis Torono Pogis, No. 118387. Grandson of Hood Farm's Torono, A. R. Sires Dam Figgis 89th of Hood Farm.
Dam: Mermaid's Spotty No. 285660. Made in 5 months' A. R. test as 2 yr. old, 182 lbs. fat and 4,034 lbs. milk. Would easily made 350 lbs. fat and 7,500 lbs. milk for year she lived.
This bull is 3 years old, a regular breeder, from some of the best producing stock, and is being sold only because of closing out stock. Price Reasonable.
E. N. SELTZER, Orwigsburg, Penna.

"NO HORNS"
Naturally Polled Holstein-Friesian
bull calves, sired by a son of the World's Record senior 4 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp.
GEO. E. STEVENSON & SONS, Clarks Summit, Pa

MILL HILL FARM
offers Guernseys; bulls ready for service and calves. Tuberculin tested. Oscar Bolick, McKeansburg, Pa.

Beau Rio seventeen months old, registered. Hereford Bull for sale. Weighs 1,290 lbs. Sire, Beau Donald 37th, No. 469301; dam, Lady Geneve 2nd, No. 352467. Champion type. Fed by my twelve-year-old son, Edson. Write ROSS F. STOUT, Clarksburg, W. Va., for price.

$400 will purchase three finely bred Registered Aberdeen Angus heifer calves, weight 400 to 500 lbs. each and a 14 mo. reg. Angus bull by Black Woodlawn, Sire of Champion and Prince It. 50006.
N. B. MILLARD, 48 Beethoven St., Binghampton, N. J

Jersey Bull ready for service. Dam's record over 500 lbs. butter in 1 year. Sire's Dam 22 lbs. in 7 days. Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us.
J. M. MAIN & SONS, SHIPPENSBURG, PA.

Reg. & Grade Holsteins 30 head reg. heifers, $250 each. cash or part credit. 7-8 Holstein Calves 5 days old, $20. & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Guernsey yearling bull, dam's record over 13000 pounds milk, 618 pounds fat.
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Library Agri College Experiment Station

Plant Diseases and Crop Production

Increase Returns From Present Acreage and With Present Labor

By Dr. FRANK D. KERN,
PENNSYLVANIA STATE COLLEGE

In the present troublous times there is world-wide concern about the food supply. All eyes are turned toward the farmer. Everyone realizes that there must be concerted effort toward increased production; the great question is how it may be accomplished. It is evident to all that all efforts toward greater yields may be divided into two classes: (1) Increased acreage or (2) more intensive methods with the present acreage.

But the shortage of labor is now playing and will continue to play an important part. There are vast numbers of acres in our great land that might be brought under cultivation, but in the time of the present crisis the scarcity of labor seems to forbid much dependence upon this means of increasing our crops. We must turn to some means of taking better care of our present acreage so that we may reduce wastes and increase yields with little or no demand for extra laborers. This means that we must improve our methods in a universal way so that we may get better returns with practically the same outlay of labor. There are various so-called "intensive methods" which have been tested long and thoroly and found to be successful in increasing crop production.

Losses Thru Plant Diseases

Among the first things which occur to most of us in way of improvements are doubtless better fertilization, better seed and better cultivation. These are all great factors, and it isn't necessary to proceed very far to convince most people of the possibilities bound up in these things. But under the present circumstances fertilizers may be high, seeds may be scarce, and too much cannot be expected of cultivation. In the whole consideration of methods for producing crops it seems to me that insufficient attention has been given to the losses caused by plant diseases. All other efforts to increase crop production may fail if precautions are not taken to prevent or control diseases.

Diseases may result in reduced yields by interfering with the growth of plants or killing them, or by destroying the crop or rendering it unmarketable. It is an old saying that "a dollar saved is a dollar earned". This is especially applicable to our present problem. Various smuts, blights, scabs and rots cause tremendous annual losses to our grain, vegetables and fruit crops. Many of these diseases are preventable and every bushel saved is a bushel gained. For the most part, the time, labor and expense necessary to prevent loss is so small in comparison to the returns that it is almost negligible. In any event, the expenditure necessary to save a given amount of a crop from the ravage of disease is much less than that necessary to grow the same amount under ordinary conditions by increased acreage. It is for this reason that we wish to emphasize the possibility of greater crops thru the prevention and control of disease as one of the first matters deserving attention in our present emergency.

Larger Returns From Present Labor

Combating plant diseases deserves attention at all times, but especially when it is so important to increase the food supply of man and animals. If one can add five bushels per acre to his crop of oats by a simple treatment which calls for almost no extra labor, is he justified in ignoring the possibility? If a man can double his yield of potatoes per acre by certain treatments and precautions, is he sensible in attempting to double his yield by continuing his present practices and growing two acres instead of one? If it is possible to raise good sound marketable fruit in abundance, is it good practice to go on raising poor and imperfect fruit in meagre amounts? These are questions which may now be brought home to many in a way never before possible.

Many people have not yet come to the realization that plants are subject to real diseases in the same way that members of the animal kingdom are affected. The scientific study of disease in plants is very new as compared with similar studies of disease in man and animals. The problems of plant disease have been with us since ancient times and some curious ideas concerning them have existed. The scientific study of diseases in plants has been carried on in America for only about 40 years, but in that time a great deal of information has accumulated. If it were only possible to put into practice all over the country a few of the measures which have been worked out, it would be possible to work wonders in a single season. No one would think of permitting their children to carelessly expose themselves to disease, or their herds to take chances of infection, and yet out of their crops they pay toll to disease continually.

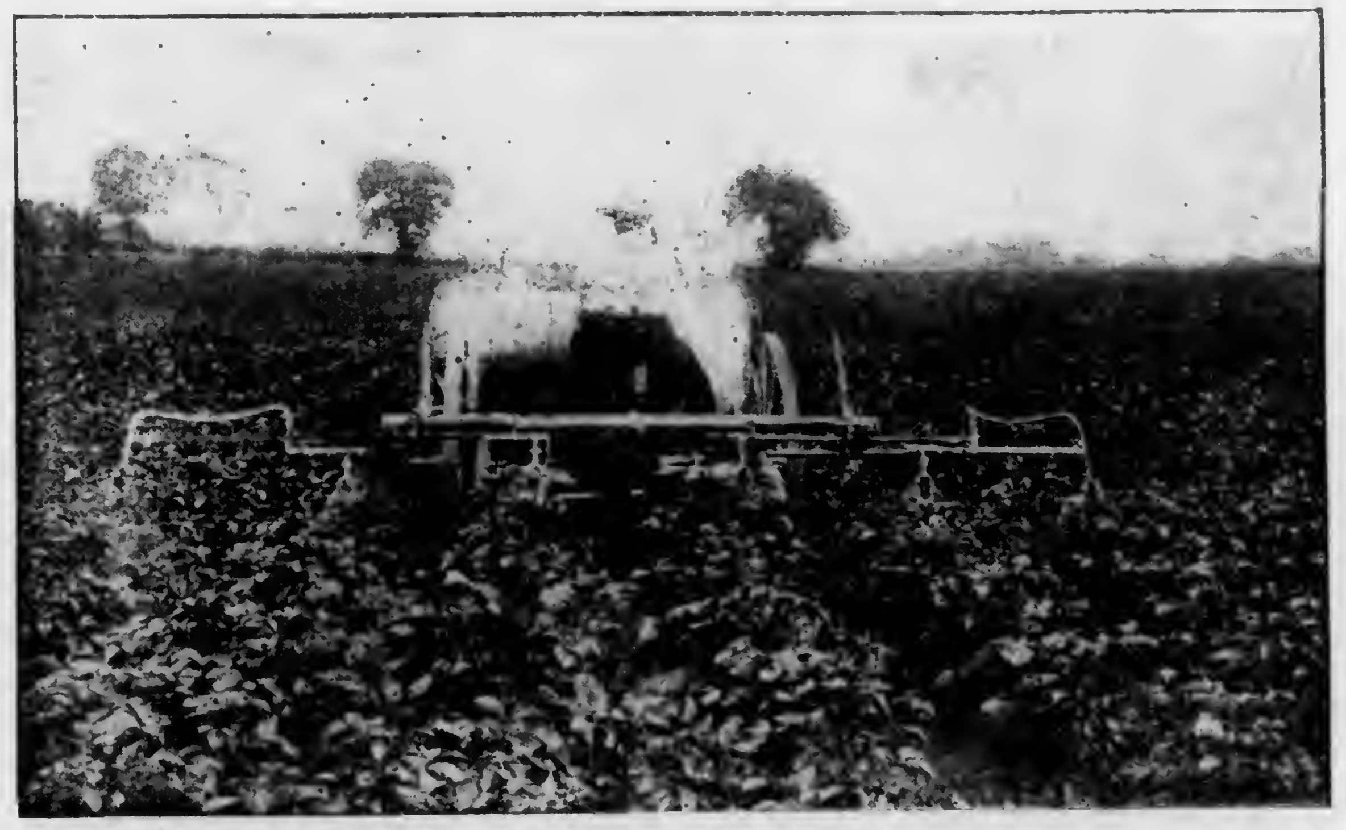
The fundamental principle of the control of disease in plants is prevention. It requires a great deal of investigating, experimenting, testing and improving to accumulate the fact upon which the practical work of prevention is based. These investigations must continue. It is of importance, however, that the farmers realize the situation and make use of the present available knowledge regarding the control of plant diseases, while investigators are making every possible effort to work out new information and methods.

The disinfection of seed grain for smut, the treatment of potatoes for scab, the spraying of potatoes and fruit for various diseases, are well-known but too little used in practice. These and many other methods of prevention and control if practiced will mean a large saving to the individual and collectively these savings would mean large gains to the world in our present emergency. In order that the matter may be more specific, some definite figures and suggestions are worth considering.

Cereals

Oats, wheat, barley and rye are subject to diseases which annually cause the loss of millions of bushels. There are three ways in which diseases may cause a decrease in yield in the small grains. In the first place the parasite causing the disease may completely destroy the kernels and substitute its own reproductive parts. The smuts are of this type and every smutted head is a complete loss. In

A Result of Failure to Treat Seed Potatoes


Increasing Yields Without Increasing Labor Supply

the second place the parasite may attack the stalk, or even the head, permitting the kernels to form but absorbing nourishment so that they are small, shrivelled and light in weight. The loss is partial. In the third place the parasite may make an aggressive attack resulting in the death of the plant while it still is young. The loss here is complete.

The efforts of investigators have not succeeded in working out methods which will control or prevent all cereal diseases, but all investigations emphasize the importance of disinfecting the seed of oats, wheat and barley before planting. Seed disinfection will prevent smut of oats, stinking smut of wheat, covered smut of barley, and will assist in checking other diseases.

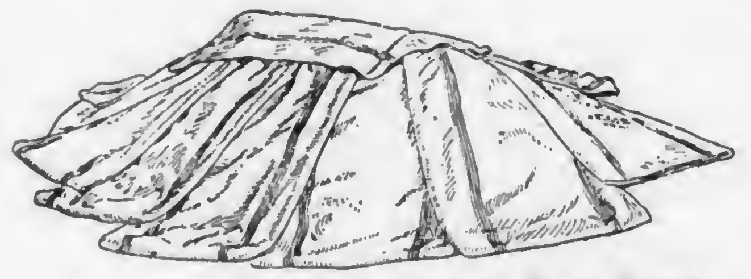
There are a number of methods by which the disinfection may be accomplished. Formaldehyde is without doubt the best disinfectant. It can be bought at any drug store. The standard solution is labeled 37-40 percent. It should be bought in sealed bottles in order to insure its being full strength. If left exposed to the air it deteriorates rather rapidly. In a great many bulletins and circulars, the word formalin has been used. Formalin is a patented term used by a particular manufacturer and the product always sells for a higher price. We should drop the use of the word formalin altogether.

Formaldehyde Treatment.—An easy and satisfactory method of treatment is to spread the seed on a clean floor and sprinkle with a solution of one pint of formaldehyde to 40 gallons of water until thoroly moist. The seed should be shovelled over repeatedly to distribute the moisture evenly and then raked into a pile and covered with sacks or canvas for a period of two to twelve hours. A shorter period than two hours would not give the formaldehyde sufficient time to act. The seed may well be left covered over night. One gallon will treat a little more than one bushel of oats and nearly two bushels of wheat It is ready for sowing as soon as dry enough to run without clogging the drill.

The treated seed should be dried as readily as possible by spreading in a thin layer and stirring occasionally. The treatment may be made a long time in advance of seeding if the treated seed is properly cared for. After treatment the seed must not be handled in sacks, bins, wagons or drills that are not free from infection. To be on the safe side it is well to cleanse them with the formaldehyde solution. If more grain is treated than is afterwards used for seed, any excess may be used for feeding after it is dried out. The treatment is perfectly harmless. If planting is begun before the grain is thoroly dry, a little extra must be allowed for each acre on account of the swelling.

Does It Pay?

In a Pennsylvania county, 80 farmers using this treatment report a saving of 2,024 bushels of oats. In an Illinois county where reports were received from a total of 7,869 acres in which 3,771 acres had been treated for smut and 4,098 had not been treated, there was an increase of 5.7 bushels per acre in the treated oats. At 50 cents per bushel, this means that the loss to those not treating was over $11,000. The amount of loss varies with the amount of smut prevailing. In the state of Indiana where some careful work has been done, it is estimated that smut annually destroys about 13 percent of the oat crop. Since their average yearly production is 52,000,000 bushels, the annual loss at an average price per bushel of only 35 cents, equals in cash value more than two millions of dollars. When one figures this for other states and other cereal crops, the immensity of the situation begins to make an impression. With a treatment so simple, so cheap and so reliable, it seems odd that any farmer who is anxious to make money should neglect this sort of an opportunity. Even if he could afford to ignore the money side the time has now been reached where the few extra bushels per acre are badly needed for food and it becomes a patriotic duty to rescue the grain from the smuts and make it available to the world.

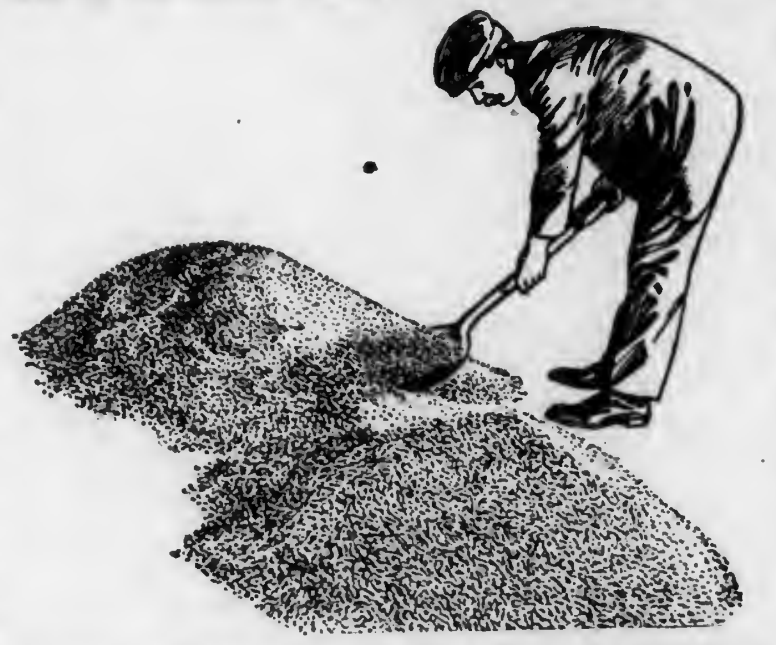


Grain Covered From Two to Four Hours

It may be added here that a number of machines are now being advertised to facilitate the work of treating grain in large quantities. Some of these are very excellent and the big farmer who has a large acreage will find them very practical.

Potatoes

The average yield of potatoes in Pennsylvania is about 87 bushels per acre. By eradication of disease and some attention to seed selection and soil improvement, the average yield could easily be doubled. Most conservative estimates show that the loss from diseases is about 20 percent. Based on the total yield for this year, which will approximate 25 million bushels, not less than 5 million bushels might have been added by the control of diseases. It is not alone a question of the money value of these extra bushels, but also the fact that the food supply of the world would have been enriched by that amount which makes an appeal. And the figures given are for Pennsylvania merely, which raises only 6 percent of the total yield for the United States.



Shoveling Grain Over to Get Even Distribution

Clean seed on clean soil will go a long way toward producing healthy and hence larger crops. No seed potatoes should be used from a field or crop known to have been diseased, for several diseases are carried on the seed tubers. All seed tubers from crops not known to be disease-free or from unknown sources should be disinfected with the formaldehyde solution. The solution is made of one pint of formaldehyde to 30 gallons of water—somewhat stronger than for grain. The potatoes are soaked for two hours before cutting and then spread out to dry. This is a treatment designed to prevent scab and blackleg and is so simple and inexpensive that one cannot afford not to apply it as a precautionary measure.

Potatoes are very susceptible to soil conditions and many diseases of potatoes once introduced into a soil will remain there for some time. This is a good argument for rotation. If scabby potatoes are fed to stock and the manure used as a fertilizer the scab organism may be introduced in that way. It is best to cook scabby potatoes before feeding them. Lime should not be used extensively on potato land as the scab disease is worse under alkaline conditions. Turning under green crops such as rye or various legumes tends to make an ideal soil condition for potatoes.

Seed Selection

By careful selection of the seed potatoes it is possible to secure greater freedom from disease, greater resistance to disease, greater uniformity in shape and size, and increased yields. Every one growing potatoes on a commercial scale should practice selection. By selection I do not refer to the possibilities of combining characters of different varieties thru cross-pollination or hybridization but to the selection of the tubers that are to be used for seed purposes. Those who grow potatoes for seed purposes should go over the field about twice during the growing season to pull out any plants not true to type or that are affected with evident diseases as wilt or blackleg. Removal of diseased hills will prevent tuber-formation and thus prevent transmitting the disease to the next year's crop. About the blossoming period is the best time to go thru and "rogue" the crop as this process is called. Where a farmer is growing seed only for himself he may "rogue" the part of the field from which his seed stock is to be taken. Making individual hill selections in the field at digging time is a line of endeavor which carries with it great possibilities. Here it is possible to select for size, shape and a maximum number of tubers. The results the first year may be disappointing but a superior seed stock may be saved and propagated in this way.

Potato Spraying

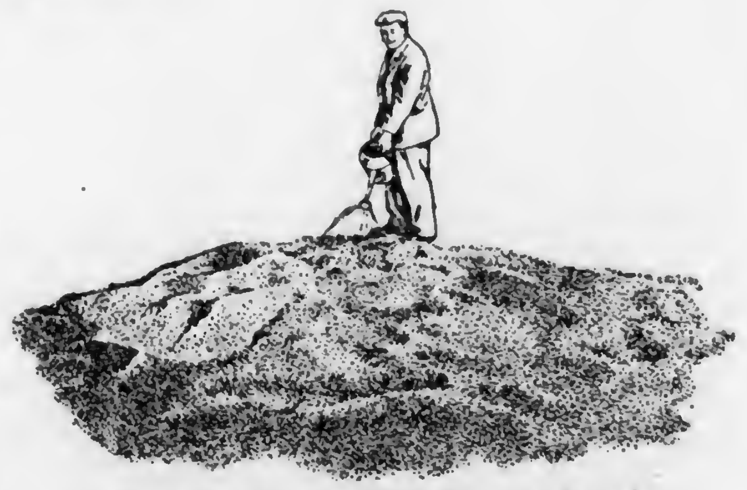
Even with the best selection and disinfection of the tubers a good crop of potatoes is not assured unless the growing plants be protected by spraying. After many trials in various localities it can be said with much confidence that bordeaux mixture is the most efficient potato spray. Fortunately it has been proved that spraying with bordeaux not only prevents several bad diseases, such as the blights, but it also stimulates growth and tuber formation. When we take into consideration that an insect poison can be added, it would seem that nothing further need be said in favor of spraying. A few facts may help to make the case more convincing.

At the New York Experiment Station (Geneva) where a series of experiments were run for ten years, it was shown that spraying three times during the season resulted in an increase of 69 bushels to the acre, while spraying every two weeks (5 to 7 times) increased the yield 97½ bushels to the acre. Spraying itself costs money and the increase must more than pay for it. Because it is well known that late blight is not epidemic every year some people think it not worth while to spray. The great increase invariably obtained even in years when blight is not epidemic seems to answer in favor of spraying.

Bordeaux is a mixture of copper sulphate, caustic lime and water. A suitable proportion for potatoes is 4 pounds sulphate, 4 pounds lime and 50 gallons of water. To make 50 gallons the copper sulphate is dissolved in 25 gallons of water, the lime is slaked and dissolved in the same amount of water. The two solutions are then poured together thru a strainer which serves to mix and strain them. These solutions may be kept separate for some time but when mixed should be used at once as it deteriorates in standing more than a few hours. Three pounds of lead arsenate paste is added to kill the insects feeding on the foliage. Spraying should be thoro and should begin when the plants are 6 to 8 inches high, and at least three treatments, preferably four to six, should be made at about two-week intervals. Bulletins of various experiment stations can be had describing in detail the preparation of the sprays.

Fruit

It is particularly important to take every known measure to prevent the occurrence of diseases on fruits such as apples, pears and peaches, not only because the development of diseases themselves means a diminished production but also because their presence may offer a means of entry for secondary storage rots and thus have a very material effect on the keeping of that which is produced.



Sprinkling Grain With Formaldehyde

In many places there are fruit trees which might be yielding a good crop of marketable fruit instead of a meagre blemished crop. Because it was possible not so long ago to raise good fruit without much attention, a great many people cannot understand why they have to fight diseases and insects so continually nowadays. They fail to realize that our thickly settled country, with its increased transportation facilities, offers much greater opportunity for the spread and importation of diseases than formerly.

To follow out a system of spraying is absolutely essential. Its value cannot be overestimated. Information concerning spraying practices for various fruits is to be found in circulars, bulletins, and spray calendars put out by the various state experiment stations and the U. S. Department of Agriculture. Those who have tried out these practices and know their value can do a great service by interesting their friends and neighbors and thus create a proper public sentiment along this line. Co-operation between growers is of prime importance in the control of many diseases, and especially with regard to fruit diseases.

We wish to emphasize here that spraying must not be looked upon as a panacea for all ills to which fruits and fruit trees are subject. Spraying is protective only; it does not attempt to remove causes. What might be called sanitation is of the greatest importance in connection with spraying. Frequently it is possible to cut out infected plants or parts of plants. In this way it is possible to diminish the sources of infection. This applies to the removal of cankers, twigs and mummied fruits in such diseases as black-rot, pear-blight and brown rot. Sometimes it is necessary to remove complementary hosts. Such troubles as apple-rust and quince-rust can be controlled only by the removal of the Virginia Red cedar which harbors the disease a part of the year. Every care should be taken to prevent wound infection. Wood rots and cankers often start where the bark has been wounded. Much attention should be given to varieties, for it is well known that some are more resistant to diseases than others. In this connection there is great opportunity for future improvement.

A good deal of what has been said in the foregoing paragraphs about cereals, potatoes and fruits applies also to vegetables and miscellaneous crops. Detailed information as to how to proceed in specific cases can be had for the asking from state and federal agencies interested in agriculture and from agricultural journals. There need be no excuse for failure to combat diseases on the ground of lack of information. So soon as growers come to the realization, individually and collectively, that they are contributing a share of their crops every year to the ravages of disease, which might be saved to increase the food supply of the world, a great step forward will be taken. There is no other so sure and prompt method of increasing crop production as putting into practice the known methods of fighting plant diseases and extending efforts to work out additional methods.

Farming and The War

By C. C. HULSART
Mommouth County, N. J.

Judged from the viewpoint of a layman, the prime essentials in winning the war, as set forth by those who have the say in such matters, seem to be the raising of vast sums of money, conscripting millions of our men, manufacturing munitions of war and building ships and airplanes. All of these are absolutely necessary to a successful prosecution of the war.

But as I see it, a nation at war must be like a vast, complicated piece of machinery with many wheels and many cogs on each wheal. Every wheel has a function to perform, and every cog on every wheel has a strain to bear. Hence each wheel must be built of material sufficiently strong to stand the strain put upon it, and each cog must be so milled and tempered so that when thrown into mesh it fits perfectly, runs smoothly and wears well.

In this war machine of ours, there seems to be some wheels still missing. We know the problem is a gigantic one but the sooner it is solved the less hitch and friction there will be. No one will dispute the fact that we need men, money and supplies to win the war. Men can't fight without weapons, without clothes to keep warm, or without food to sustain their bodies. Are we making ample preparation for the feeding?

Ever since the beginning of the planting season last year there has been no end to advice and instruction to grow more food. During the season now closed, more was grown and raised to maturity than could be harvested. Today, while I write, looking at a mantle of snow covering the earth, and our whole country in the grip of winter, there is yet in the ground potatoes undug, and corn in the shock unhusked. Fall work is not more than half done, where done at all. Repair work was not attempted, orchards are untrimmed in fact, nearly everything is at a standstill. Only two days ago I was talking with a neighboring farmer who said: "It looks as tho some of us would have to 'lie down' next season." He said he did not feel like spending $2,000 to prepare for next season's operations and then have no help to work his farm. I know others who have decided not to farm next season because of these conditions. I am on the fence myself and may fall off on the safe side.

I am like many of my brother farmers. I have seen many summers of hard work. I am on the sunset side of life; hence do not amount to much as a farm laborer. As a manager and director, I think I am just as good as I ever was, but without experienced labor we must "lie down".

The agricultural wheel in this great war machine is one of the main drive wheels. When it is cracked or shattered, the whole machine becomes useless. I am afraid this agricultural wheel is in bad running order for 1918. The farm is the source of all food products and the farmer is the individual who must produce them. He can do all but furnish labor. In that he falls down. Fertilizers are high when bought in the open market. The high price is likely to curtail planting; doubly so when every farmer is short of help, or has none at all.

There is no use hoping against cold facts. Farm help is over 50 percent short, and the quality is 50 percent below normal. Now if the farms thruout our country are to be run to full capacity, or sufficiently to feed the nation and have anything left to ship to our allies, the farms must be manned and that with men who are sufficiently trained in practical farm work to render full service. Why is the farm neglected while all other business is partially if not wholly supplied with help? The answer is easy: The selling prices of all manufactured goods are made high enough to cover the cost of production and leave a profit. If the farmer could do that he could compete in the market for labor. But he has not that opportunity. The farmer does not know when he plants whether he is going to sell his crop at a profit, at cost of production, or below that cost. Furthermore, he does not know whether or not he is going to harvest a full or half crop. It is not within his power to determine. Weather conditions are the governing factor.

Making Dividends for the Implement Manufacturers

There are numerous causes that lead to present conditions. Among them are long hours on the farm, hard work, low pay, exposure to bad weather, and last but not least, a prejudiced social viewpoint. Reading between the lines of much that we see in print, most writers seem to think that the farmer himself is all that is needed to run a farm to full capacity. This is a most absurd presumption. On any farm of fair size, the farmer has enough to do to furnish the brains and by supervision see that his knowledge is applied to the work thru his help. But why thrash this all over so many times? We have been coaxed, advised and instructed. And by whom? By boards of trade, business men, lawyers and politicians, none of whom know farm conditions. We have been committeed and commissioned to death, and still the situation grows worse. Is it not time that something was done besides delivering "hot air"; a commodity that that seems to be the cheapest thing on the market today? We must win this war. But words will not do it. Only deeds, and heroic deeds, will count.

There are six million farms in this country, nearly all of which are under-manned. Allowing that each farm is one man short (many farms are from three to four men short) it will require 6,000,000 men to supply the farms—probably double the number we will have under arms at any one time. But what use is there in quoting all these figures? There are no available men to put on the farms. Powder plants, munition work, ship yards and all of our railroads are crying for help. And they are advertising for unskilled labor at a wage of from $3.50 to $5 for an eight-hour day, while the farmer must seek his men for half that wage and a ten-hour day and sometimes more. Taking this at face value, it looks as tho agriculture is doomed, and it is unless something is done. Now what shall that something be? There are two ways whereby some results may be accomplished.

First, stop this newspaper and magazine howl that is going out continually leading the public (not producers) to believe that the farmer is a profiteer and becoming fabulously rich in consequence when in fact he is unable to pay a wage in competition with war industries and make ends meet. If we are to compete for our help in the open market, prices for farm products at the farmers' depot must be high enough to permit him to pay the same wage that our government is paying for like labor. Were this done and then some government project be launched that needed a large quantity of men, the wage would [illegible] boosted again until contractors succeeded in getting all they wanted, and agriculture would be upset again. There must be cooperation by the government with the people, as well as by the people with the government. In other words, there must be a harmony of interests, a well-developed plan con-

Farm Machinery Shed, Well-BuiltBut Cheap After Years of Service

(Continued on page 5.)

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PHILADELPHIA, PA., FEBRUARY 2, 1918.

LATE DELIVERY OF PAPERS

Owing to the five-day shut-down of manufacturing plants, and the Monday closings, this issue of Pennsylvania Farmer is late in getting to readers. Electrotyping plants are among those shut down on the fuel order, and there has been an unavoidable delay in getting our electrotyping done. The future Monday closings will necessitate a rearrangement of schedule which we hope to meet in the next week.

* * *

A National Organization

On page 22 of this issue we publish copy of a memorial which has been presented to the President by the Federal Board of Farm Organizations. It will be recalled that this is the same agency that presented the labor needs of the farmers in their relation to the army draft and secured the classification system of registration. It is also the body that secured the appointment of real farmers on the Commission that set the price for the 1917 crop of wheat. In the appeal now being made, the Federal Board is asking for an announcement of a definite agricultural policy, particularly as touching on the points of general farm interest enumerated in the memorial. The Federal Board is a small body made up of representatives of practically all of the important farmers' organizations of the country. It maintains headquarters at Washington, and is on the job to watch farmers' interests in all of the official work of Washington. It is designed to do for agriculture what the Federation of Labor does for organized labor. Its possibilities in this work are limited only by the size and influence of the organized bodies back of it. It deserves the support of all farmers. The way to give it greater support is to throw your support to the national farm organization that best serves your needs.

* * *

The Prohibitory Amendment

The campaign for ratification by the states of the national prohibitory amendment is now on. The legislatures of three states have already passed upon it favorably. If thirty-three more do likewise within the next seven years we shall have national prohibition. The privilege and duty of citizens of every state now is to see to it that members favoring ratification are elected to the legislatures. It is not too soon to begin. Church societies, clubs, granges, etc., should take up the question, discuss it and then form a plan for acting co-operatively. Every candidate should be compelled to declare himself as to his attitude on the subject. Don't allow them to straddle the question. Smoke them out into the open and then go to work to arouse such a public sentiment in the neighborhood as will put strength into the weak knees of the partisan voter and cause him to vote for principle instead of men. In Pennsylvania all this should be done before next September when the primaries will be held. This is no time in which the "best people of the neighborhood" should continue to ignore the primary election. If public sentiment is sufficiently aroused and definitely expressed, candidates will be the more ready to declare for it. Then, let "the best people of the neighborhood", they who usually ignore the primaries, attend the election and help nominate men who will represent them.

* * *

Neighborhood Gatherings

Intimation has come to us thru conversation and by correspondence that the social life of many country communities has been seriously affected, for the time being at least, by the stress of world events. Many of the young men and women have left for other work and the remaining folks, in many instances, have all they can do to keep things moving. Added to this is the mentally disturbing conditions in every direction. All this tends to upset the even tenor of normal life and distracts the attention from what people consider to be the less important matters. We have heard from some localities in which the interest in the neighborhood gatherings—grange meetings, church gatherings, institutes, etc., has reached so low an ebb that many meetings are failures or entirely neglected. We believe this attitude of indifference is a mistake. The social gatherings in average country neighborhoods are not so numerous or so strenuous that they may be lessened without loss. There is an especial need now to maintain a good strong community spirit.

Not only is there an especial need in order to maintain the purely social status, but the necessity for a fuller understanding of what is the individual's duty in order to aid in evolving the best possible political and economic order was never so great. If the customs and institutions already existing do not meet the needs of the community they should be improved or new ones started. In any event, it will not pay to become so absorbed in thought or business as to neglect "the assembling of yourselves together". We should be glad to hear briefly from our readers on this subject, giving helpful suggestions as well as criticism of existing rural institutons. Are they meeting the needs; if not, why not?

* * *

The Outlook

In all probability the vast majority of the people of all the warring lands daily scan the headlines of their daily papers with the hope of finding there something that indicates the early coming of peace. Out of the contradictory maze of news and opinion it is often difficult to extract either comfort or hope, yet the fact that the desire exists with all, and the knowledge that human endurance has its limitations, tell us plainly that the end must come—but how and when?

A careful reading of the recent utterances of leading men shows a more conciliatory tone used in the discussions and a greater definiteness of purpose. Concessions have also been made, and even a measure of agreement professed upon some questions. It may be justly concluded from the evidence at hand that there is a greater spirit of unity and a more common purpose existing among the Allies (including Russia) today than at any time since the war began.

On the other hand, despite the heavily censored news from Germany, there is greater dissention and lack of loyalty among the Central Powers today than ever before. Austria is bidding for peace opening; the democratic elements of Germany are becoming more insistant, tho the autocratic hand becomes heavier; the privations are daily becoming more severe, thus lessening the endurance and the efficiency of the people at home and in the army; the situation in both Italy and Russia is clearing and the anticipated disasters are not likely to occur.

But granting this reasoning correct, the food situation is sure to be worse during the coming year than it is now. The margin between starvation and the world's supply is daily becoming less while the margin between the number of consumers and the number of producers is daily becoming wider, and, even with the greatest possible effort on the part of farmers, only an abnormally favorable season will do more than supply the barest needs the coming year.

* * *

Farm Labor Survey

In Secretary Houston's proposed solution of the farm labor problem the first recommendation was a systematic survey of the situation to ascertain the possible needs and determine possible means of meeting them. This suggestion was one of the most practical of the seven made, but if it is to have any value it must be acted upon at once. Active farm work will be under way in many sections in about a month, and plans for this work are being made now. If the Department hopes to be of any service to the farmers in the work of the coming season it must have its survey completed and its remedial plans in operation within the next few weeks. If the proposed solution was for the year 1919 or was put out merely to make a pretense at a service to still a growing public demand, it will not make much difference what is done.

A thoro survey of the farm labor situation would be most enlightening at this time. The farmers know the conditions in their own field, but those fields are limited. The East particularly have been hit by the increased demands and the wages being paid in the large eastern cities. They know that practically all the available help was taken last fall and this winter. If there are sections that were not similarly affected and where there is help available, these farmers want to know about it. Also, as seems probable, if some of the many that went to the cities in response to the high wages are now ready to come back to the smaller wages but the more agreeable work of the farm, the farmers want to know it and they want to know how and where to get in touch with such help. There are reports that considerable of this city labor, drawn from farms in the past year, is now ready to come back. The big wages have not proved as profitable when all necessary expenses are paid, and the work under exacting gang foremen and the housing conditions imposed have not proved as attractive as the early reports had led these men to expect. Many of these men were naturally country-minded, and they have not taken kindly to city environment. According to reports, these men are drifting back to the farms for next year's work.

But how many are there of these men, and where can they be reached and how can they be put in touch with the farmers needing help? These are questions that ought to be developed by an intelligent farm labor survey, and that at once. This is work for the Federal Department of Agriculture. During the past year there was needless and confusing duplication of employment agencies. Well-intentioned but inexperienced organizations and individuals developed a large number of so-called employment bureaus. Some were able to be of slight service. Some merely complicated the machinery and made it more difficult for the farmers to get the help they needed. The great trouble was that the machinery was not organized and there was not a plan of operation covering the entire field. The farmers have a right to expect such service from the Department of Agriculture. Will they get it?

The survey must be made at once if it is to be of value this year, and even now it has missed the chance of greatest service. Plans have been made for the work of the new year. Personal observation and reports indicate that in many sections plans are made on the basis of great labor shortage. Men who have been using three helpers are planning on cutting down to a two-man basis, and where two men were formerly used, but one man will be hired; while the greatest reduction will be found among those farmers who have been hiring one man and will now operate without hired help. These plans are made and it will be but a short time before actual farm work will start. If any help is to come it must be before the spring seeding starts.

Perhaps the greatest benefit to result from a thoro labor survey will be in bringing to the attention of the government officials the real conditions in the farm field. We can scarcely hope for a constructive agricultural policy until those in charge know what they have got to deal with. There has been little in the past relations to agriculture to indicate that they do know the conditions. If a labor survey will help, by all means let us have it at once.

FARMING AND THE WAR

(Continued from page 3.)

sistently followed by all.

Second, as indicated, there are not enough men to man the various industries as now constituted. But could there not be a re-organization of many of our minor industries? There is duplication upon duplication in many lines of business. There is scarcely a village of over 1,000 population that is not over-burdened with small business enterprises; two and even three times as many as needed by the population. There are grocery stores galore; butcher shops in excess; dry goods stores and small notion stores fighting with each other for existence; shoe stores, cigar stores, barber shops, and beer saloons in over-abundance. Beside these, there are many lines of business that do not contribute one iota to the winning of this war.

If we can not mould every wheel and mill every cog so that this war machine will run smoothly under existing conditions, had we not better try to persuade Congress to pass laws that will accomplish this desired end? Closing small business because of too much duplication, and others because of no value under war conditions, would relieve millions of men who could be used to much better advantage in winning the war. Many will oppose this as being undemocratic, particularly where self-interest is at stake. If this scheme is ever put in operation it will have to be done by an act of Congress. It never will be done voluntarily. Some interests must necessarily be hurt. But whatever sacrifice is made by those at home, there is none so great as exposing one's life before the guns of an enemy on a foreign soil.

HARRISBURG NOTES

Drifting Along.—While the men who have been working up — and talking about—ways and means to make the State Board of Agriculture the factor it was intended to be in the management of the department of the state government devoted to assistance of farming and allied branches and to bring the Brumbaugh administration to book for its failures, say that the May meeting is the proper place to discuss such things. The utter lack of any reference to the future of the Board at the meetings here last week caused much comment. The talking was adroitly shunted into a discussion of the labor situation, which is serious enough to keep any meeting talking for hours, and the state administration did not even have to post its roller operators at the final sessions. The Board drifted with the current and in the direction desired by the men who have an object in keeping it out of sight. The May meeting will be held in Lebanon and it is the plan to have a show down on whether the board is to be a side show or to have a voice in the government; whether the Commission of Agriculture is to be abolished or whether the board is to have a share in naming its personnel. The meetings of the Board were dull, the and the attendance was less than for a long time. As far as influencing things on Capitol Hill it did not amount to anything and the governor's friends who were afraid of an outbreak laughed at their fears when it was all over. The meeting at which things have ordinarily been done was not even a good specimen of a debating society. No report was made on legislation and only two resolutions adopted, one being that the embargo on fertilizer material should be raised and that the foreign nursery stock embargo be established. Something was done about the draft, but the lack of a program for discussion of that subject and failure to get the state committeed to it rather detracted.

The Labor Situation.—If the reports of addresses made at the meetings of the state board and allied organizations on the subject of farm labor could be sent to Washington—and read there—the views of representative farmers could be realized. The plain notice was given that farmers can not increase acreage devoted to foodstuffs without labor and that the chances are that in some sections the cultivated land may be reduced. There was some very plain talking about the operations of the draft and the absence of any assurances that men could be sent back from camps to help at the critical time. Everyone agreed that the situation was serious, but beyond writing down some ideas on the gravity of conditions not much that will bring relief was done. Concerted action on Congressmen, all of whom come up for re-election this year, may bring governmental thought toward realizing what is going to happen on Pennsylvania farms.

Show Big Success.—The state midwinter farm products show was a bigger success than expected because of weather conditions. Over 10,000 persons attended it, there being 3,000 men from farms here on Wednesday. There were 800 apple exhibits, 250 of corn, 120 of wool and 46 of butter, together with numerous others. While this display may seem small compared with the big summer fairs, the exhibition at a time when there are a couple of feet of snow on the ground is some work. Fifteen types of tractors were displayed, some were worked on snow on Harrisburg streets and eighty in all were sold. Three or four were sold for spot cash, loaded on cars and shipped to farms. One of the interesting features was the presence of 134 boys and girls here to judge corn exhibits. If the state gives some aid and the city of Harrisburg wakes up, the mid-winter show can become a great gathering place for farmers to display choice exhibits after the usual fairs are ended.

Governor Gets Busy. — Governor Brumbaugh endeavored this week to smooth out the troubles between the State Commission of Agriculture and the secretary, but he did not get far enough to secure a promise that his friend, E. B. Dorsett, would be confirmed by the commission. Only three of the members of the commission came here for discussion of the troubles, Chairman H. V. White being conspicuously absent. Arrangements were made for a meeting next month. The commission was an object of almost as much interest among the farmers as an ice cream sign swinging in the wind near the Capitol.

Telephone Rates Next.—Intimations have been given about the Capitol that the telephone companies will be the next to advance their rates. Trolley and electric companies all over the state have been filing notices that the time has come to increase rates and the telephone people have been holding back in the hope that they would be able to overcome the proposition. Now it is intimated there will either be curtailment of service or increase in rentals.

Consolidation Halted. — The high price of materials necessary for enlargement of schools, the difficulty in securing teachers at present salary conditions and the weather have all combined to put a crimp in plans for consolidation of rural schools this year. In some sections ambitious plans will be laid over a year or so and efforts made to get along as well as possible. From reports here many rural schools will close early this spring because of war conditions. — Hamilton, January 28, 1918.

NEW YORK LETTER

The Week in the Legislature. — In accordance with the Governor's recommendations, fewer bills than usual will be presented at this session. The measure expected to precipitate the first real break between legislators and executive is one abolishing the direct primaries, and reverting to the old system of nominating state officers by convention. The work of accommodating the increase of 100 percent in the number of voters of the state, their registration and the fixing the population of voting districts will receive attention this week. Assemblyman Lord, of Oswego County, has introduced a bill abolishing special teachers of physical training for rural schools, requiring the teachers of such schools to give needed training instead. Officers of the assembly are seriously considering an amendment to the rules to meet the present situation by which the increase of Socialists, ten in number, in the Legislature is now able to hold up measures of which both Democrats and Republicans approve. The first bill to be enacted this year, a war measure arranging for a munition plant in Saratoga County, was so held up by a single dissenting Socialist member. A flood of bills is expected next week.

Justification for Farm Census. — For two years past, New York has taken a census of farm conditions thru the medium of the school children of the state as volunteer workers—the state college and the farm bureaus. The valuable data secured in this way has been such a help to the federal government that this year 35 states will take a similar census. The last week in January and the first week in February will be given to the work this year. The justification for taking such a census is ample at this time, because:

1. There is an alarming scarcity of seed in the face of a world-wide food shortage.

2. A most critical labor situation exists.

3. Farmers as a class lack definite figures on their business as a whole such as can be obtained of other industries.

Each farm bureau summarizes the reports which cover a list of 110 questions, rendering full reports to the state college and giving each farmer a summary of the conditions existing in his own county.

Skilled Workers Wanted on Farms. —The State Agricultural Society has sent a resolution to the President asking that skilled workers in agriculture of draft age be not exempted from service but detailed to actual farm work under such restrictions as shall safeguard the country's interests. The resolution set forth the fact that "our farms have lost many skilled laborers with consequently diminished production." Another resolution recommended the reimbursement, from various interests, of excess profits taken from the farmers on bran, middlings and flour produced from wheat taken at fixed prices.

Egg Prices Fixed.—State dealers in eggs have received orders not to take over 2½ percent gross profits on what storage eggs actually cost them. "Firsts" are selling in Syracuse for 48 cents a dozen.

Dairymen's League Notes. — The federal milk commission has placed questionnaires in the hands of the farmers, covering the cost of feeds and of milk productions, the papers to be returned to the commission shortly. The latter will base their prices for milk up to May 1 on the data secured in this way, and will reimburse the farmers for losses entailed in December by the concessions made then by the League in the price of milk for that month, pending the investigation. An effort is being made to check up the producers of Onondaga County and enlisting them as members of the League.

Onondaga Furs the Best.—Syracuse recently shipped the biggest muskrat fur shipment ever recorded, over 10,200 skins. Every month several hundred thousand dollars' worth of raw skins leave Syracuse which is recognized as the largest receiver of furs from New York City to Lake Michigan. The furs produced in this section, especially in the Cicero swamp, rank as the finest known in "rat" fur. Red fox skins are worth $15 here today, "rats" 75 cents, weasels, of which there has been an unusual supply this winter, $1 each. Choice skunks bring $4.60 to $5.—F.

NEW JERSEY FARM NOTES

Corn Yields.—The December crop report of the State Department of Agriculture gives some interesting figures bearing on the effect the weather exerts over agriculture despite the great strides science has made in this calling in America. Corn, in 1916, averaged 24.4 bushels per acre, and in 1917, 26.4 bushels. The acreage planted showed an increase of 13 percent for 1917. Thus from the increased acreage and the increased yield per acre a total increase of 592,667,000 bushels was secured, or 23 percent. Both the acreage and yield per acre in 1916 were less than the previous five years' average showing a total production of 7 percent decrease. The farm values based on December 1 prices were 59.7 cents per bushel for the five years, 1911 to 1915, 88.9 cents in 1916 and 128.3 in 1917.

Resolutions by State Board. — At the closing here of the annual meeting of the State Board of Agriculture, a resolution was adopted requesting the Governor, the District Draft Boards, and the County Board of Agriculture to carefully investigate the case of each man who is in danger of being taken from the farm for military service, and to use their utmost endeavor to have such men kept on the farms if they are entitled to be kept there under present draft regulations, and that the state board earnestly petition the State and National Governments to increase their efforts to divert labor to the farms. This year's agricultural convention was probably the most successful in the history of the state. Among other resolutions adopted by the State Board of Agriculture were the following: Resolving that the agricultural body do all in its power to discourage unfavorable tendencies among the consuming public, newspapers and other forces, who are using their influences to hold down the prices of farm produce, which is causing hesitation among farmers in producing goods; protesting against any discrimination which would unfavorably affect the farming industry; commending the work being done by the state agricultural college; that the state agricultural convention ask liberal financial support to the state agricultural college and experiment station to carry on the present work; favoring legislation enabling employes to kill rabbits and English starlings damaging crops; approval of the state-wide drive which the Extension Division of the Agricultural College is waging for increased fertilization of corn.

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Poultry

EGG-EATING HABIT

The egg-eating habit usually develops in a flock that is confined to the house or in limited quarters. Hens on range seldom contract this habit, since they usually are in the laying house only while laying.

Hens confined to the house must be kept busy. It is the idle hen that contracts the egg-eating and feather-pulling vices. The hens should be made to scratch in deep litter for the greater portion of their grain food. The first food of the day should be grain, fed in deep litter. Cracked corn should be used in preference to whole corn, not because it is better food, but because the food particles are smaller and the hen must work much harder in order to satisfy her appetite.

Many feed a wet mash as the first food of the day, believing that since the mash food is easily digested, it will more quickly satisfy the fowl's hunger when she comes off the perch in the morning. It certainly will, but for the very reason that the fowl's hunger is soon satisfied, and she has no need to exercise, the writer discarded this method of feeding years ago. It is the idle hen—the hen that is full of food—that gets into mischief, often fighting others on the nests, and causing eggs to be broken and eaten.

The egg-eating habit is also brought about by a craving for animal and mineral foods that the ration does not contain. Beef-scrap or animal food in some form should be fed daily during the fall and winter months.

The habit may also result from feeding egg-shells that retain the egg-shape. In feeding egg-shells they should be pulverized. A good method is to brown them in the oven, when they will pulverize easily.

When the habit is already present in the flock, the preventative methods as given may not always correct the evil. When they do not, dark, low-covered nests should be provided. The openings of the nests should be next to the wall. The nests should be covered, and they should be so low that the hen cannot stand erect in them. If unable to stand, the hen cannot possibly strike the egg with her beak with sufficient force to break them.—T. Z. Richey.

PREPARING FOR THE GUINEA BROODS

Now that the use of pork, beef and mutton is being curtailed quite generally all over the country, there is an increasing demand for poultry of all kinds. The gamey-flavored guinea is becoming increasingly popular, not only because of its own peculiar merits, but because it can be substituted in restaurants and hotel dining rooms for wild fowl. Whether or not the patrons are always aware of this substitution, it is certain that their appetites are appeased by a choice portion of a tender young guinea.

Raising the guinea as a commercial proposition has never proved feasible, nor can it be raised where the poultry run is limited to a back yard. Only farmers who can allow their poultry wide range can supply the demand for guineas. As a side line, such poultry generally proves profitable to farm breeders. Most farms can keep a dozen or more guineas from year to year, and from them raise at small expense from fifty to one hundred young guineas. In addition to the young stock produced, there will be a surplus of eggs for home use or market purposes during the summer.

It is usually advisable to select breeders from the flock of young guineas in the fall. If this was not done last fall eggs should be purchased in the early summer and placed under chicken hens. I have never been able to get adult guineas which were brought in from other farms to mate. The change of environment must be responsible for this failure to mate, which is common with many wild or semi-wild fowls and animals when they are brought under domestication or removed from their old homes. Whenever it seems desirable to introduce new blood into the flock or to replace the old breeders with young birds, eggs should be obtained from breeders whose stock is unrelated to that of their neighbors, and a fresh start made.

Cheap Grain Hopper

The breeding birds should always be reserved from the broods hatched and reared by checken hens, rather than from the broods reared by guinea hens. The former become deeply attached to their foster mother and, even after they are grown, will follow her everywhere, going into the roosting house with her at night and continuing to roost there winter and summer. That is the very thing desired if the wild instincts of the birds are to be subdued.

If a large flock of breeders are kept during the winter, it is best to house them separately if the matter can be arranged. Guineas are very domineering over other fowls, keeping them away from the food until the guineas have supplied their wants. Free range should be allowed the birds thruout the year, except during severe winter weather. Winter food should be similar to that given other poultry. In summer little feed is required for adult birds; a small evening meal is often advisable in order to induce the birds to return home for the night.

The best hatching results from guinea eggs will be obtained only when an equal number of males and females are kept so that they may mate in pairs. Altho a male will oftentimes mate with two or more females, it is never certain that this will occur and many infertile eggs may be produced. The hens usually begin to lay in April and continue at intervals until sometime in August if they are prevented from setting, by keeping their nests located and removing the eggs when a dozen or more have been deposited. It is not infrequent that some of the more domestic guinea hens will lay in the nests in the poultry house, especially early in the season. But as summer advances the birds become more restless and wander farther afield each day, and eventually they secrete their nests where, no doubt, they think their brooding instincts will not be interfered with. Several females will often lay in the same nest and will set side by side when a large number of eggs have been deposited. The owner must maintain a close watch during July and August if he would keep all stolen nests located. Guinea hens themselves make poor mothers and seldom succeed in raising more than a few of the many little keats which they hatch quite successfully. Nearly all perish as they are dragged early in the morning and during rainy weather thru the wet weeds and grass by their too restless mother.—W. F. Purdue, Indiana.

THE WET MASH

While good results can be obtained by feeding the mash dry, it cannot be denied that hens like a wet mash better, and will usually lay better if given all they will eat of a wet mash once a day. The mash should be crumbly, not sloppy or sticky. In order to have it crumbly, at least one-fourth the bulk of the mash should be wheat bran. An excess of corn meal or middlings will make a pasty or sticky mash that may result in digestive troubles. The mash should be barely wet. The way to test the mash is to take up a handful and press together in a ball. If, when released, the ball falls apart, the mash is just right. If, however, the ball retains its shape, the mash contains too much middlings or corn meal or too much water.

Some authorities claim that feeding wet mashes will bring on bowel trouble. It frequently does, but the trouble is not in the mash. If the mash is fed in foul, dirty troughs, or if some of it is allowed to remain in the troughs to sour and mold, bowel trouble will surely result. The farmer who feeds the mash in clean troughs, and who removes what the hens do not clean up promptly, will not make his chickens sick by feeding a wet mash. Why should a wet mash be more unhealthful than a dry one? The water in the mash is just the same as the water in the drinking fountains.

It is a settled fact that hens will eat more of a wet mash than they will of a dry one, and it follows that since the mash mixture contains more of the food elements required for a good egg yield than the grains fed, that a better egg-yield will result in feeding a wet mash.

A good mash mixture is as follows: Two parts bran, one part corn meal, one part middlings and one part meat scrap. If milk is available in mixing the mash, the proportion of meatscrap may be cut down one-half.

The mash should constitute at least one-third the hen's food. It does not make a great deal of difference as to the kind of grains used. The ordinary grains grown on the farm do not differ a great deal in food value.—T. Z. Richey.

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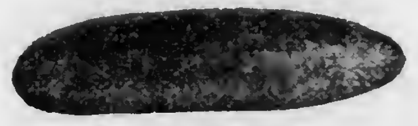

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Horticulture

MELONS IN A COLD CLIMATE

The degree of success or failure in the growing of any crop is measured to some extent by the adaptability of the crop to its location; by way of illustration, melons in Georgia might not mean an achievement at all, while melons in this part of New York State are very rare since soil, climate and temperature are wholly unsuited to their development.

Two years ago, however, I had some nice ones and this is the way I did it. Considering good seed to be the first requisite of an assured success, I sent to the most reliable grower I knew for several varieties of seed recommended for northern sections. After procuring instructions from several successful melon growers, a few berry baskets were filled half full of well-composted manure and soil, and filled up with good garden soil. About five seeds were planted in each basket and two of the weakest plants removed. The others were carefully tended in a sunny window until danger of frost was past, when they were transplanted to specially prepared hills, each basket making one hill. The little plants, by this time, had from four to six leaves, and were very thrifty and stocky. The hills were prepared in the mellowest, best drained part of the garden, by removing a shovelful or two of soil, filling the hole with well-rotted manure, and replacing the soil on top. The baskets were then thoroly wet, so that the soil would cling together well and the contents very carefully transferred to the hill, disturbing the roots as little as possible. For a time the plants were covered every [illegible] night, but they had been accustomed to day temperatures on the veranda previous to transplanting. We kept the weeds out, hoed them frequently, and were amply repaid in nice melons, no remarkably large watermelons, but nice ripe, sweet ones; and muskmelons as large as any on the market, and of first-class quality.

Since this was my first melon experience, and I got a variety of it then, I am still wondering about several things. At the time of transplanting, hills were prepared just alike, side by side, and seeds planted in one while choice plants were placed in the other. For a time the transplanted hills were way ahead, but the seeds soon came up, the plants grew luxuriantly and matured melons just as early and fully equal in quality, I might say superior, only I don't like to think all my preparatory work in the house, advised by leading growers, was entirely lost.

Back in my brother's newly-set apple orchard, I planted muskmelon seed between the trees in the row, without any preparation other than that given the orchard. The entire field was in fine tilth, but not a thing was done expressly for the melons. He helped me do the work, but the first time he disked the ground, and thereafter, he forgot all about them and disked it all over thoroly, both ways. We never expected to see any melon plants, but they soon came up, a little out of line, but not badly. At first they acted a little sickly, probably from lack of fertilizer; indeed, they never produced a big growth of vines but vines are not very essential anyhow. The orchard is some distance from the house, and I never hoed them once, the only cultivation they ever received being incidental, when the orchard was cultivated. They were a trifle later than my much-coddled garden melons, but long before frost we carried in loads of perfect melons, fruit as ripe and luscious as melons can get.

Up in my own orchard, too, I planed watermelons and never got up there to hoe them much, tho I did pull weeds some. These, also, produced fully as well as my garden water melons tho they were a little later. The growth of weeds around them, however, protected them from early frosts so that their fruit ripened, some of it after the garden melon plants were killed.

After all we hear about hoeing melons much and often, can it be that the only advantage derived therefrom is a trifle earlier maturity? My melons, too, that were poorly cared for, were also poorly fertilized; does fertilizer only serve to adapt the plants to our short seasons? Would the addition of sand to my melon hills have been advantageous? Might it not be true that comparatively little horse cultivation is equal in value to much hand hoeing?—E. M. A.

Bean Planter that Sows Fertilizer and Seed and Smoothes the Seed Row

VEGETABLE GROWERS SHOULD ORDER SUPPLIES EARLY

It is strongly advised by the New York State College of Agriculture that vegetable growers should anticipate their spring requirements as far advanced as possible. Manufacturers of fertilizers, insecticides, garden implements are experiencing great difficulty in securing raw materials. The railroads are being worked to their maximum capacity and the shortage of freight cars undoubtedly will become very serious towards sping. Under these conditions, it may be impossible to make prompt deliveries of freight. By placing early orders for necessary supplies and equipment, delivery will be more assured, and delays and losses may be prevented.

FRUIT EXPERIMENTS

Maryland Station Activities

Not long ago the writer visited the Maryland Experiment station at College Park, a few miles out from Washington. The station farm consists of about two hundred acres, and other farms are leased for station work nearby. Much experimental work is being carried on for the benefit of Maryland farmers, orchardists and vegetable growers.

Fruits

We found W. R. Ballard, the pomologist, engaged in extensive experimental work with apples, pears, grapes and small fruits. He is working especially with apples to secure new varieties for early market that are of good flavor and shipping qualities and red in color. Two leading early varieties for the central counties of Maryland at present are the Yellow Transparent and Early Ripe. One fault of the Yellow Transparent is its propensity to blight. In the western part of the state Oldenburg is largely grown.

Mr. Ballard has had 250 seedlings to fruit so far, Early Rape being used as a base with such varieties as Red June and Red Astrakan. Williams Red has also been used in these experiments. It is a good seller. Several seedlings have given very promising results in orchard tests. Early apples have brought Maryland growers more money than the winter fruit, a fact which shows the importance of this experimental work.

In his pear experiments, Mr. Ballard is using the Kieffer as a basis. He is trying to get a pear with equal productiveness and adaptability, and of better quality than the Kieffer. The Kieffer has been planted quite extensively in Maryland, the growers some years ago claiming that they could make money growing Kieffers at twenty-five cents a bushel.

The Concord is being used as a basis in Mr. Ballard's experiments with grapes. He is not only trying to develop a better quality of grape, but grapes more resistant to fungus and disease. He is experimenting with European varieties, also the Riverbank, which is a hardier type, and in connection is going to use the Summer grape, which is more resistant to disease.

Berries

Experimental work with strawberries is being conducted on the Eastern Shore of Maryland. The station is trying out the idea of using lime and the use of nitrate of soda in spring. The common practice is to put on the fertilizer when the plants are set out, and in the following season to give the bed a dressing of nitrate of soda. Mr. Ballard is experimenting to find out the advantage, if any, of putting on the nitrate when the plants are growing. He says it is advisable **with most varieties to make a new**

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Hoffman's Seed Book gives you the facts on Seed you will buy this Spring. Offers choicest strains of Clovers, Alfalfa, Corn, Oats, Maine-grown Potatoes, Field Peas and Beans; write today for your copy, it's free; samples too, if you mention this paper.

A. H. HOFFMAN, Inc.
Landisville,
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$500 PER ACRE From STRAWBERRIES

Growers who use Kellogg Pedigree Plants and follow the Kellogg Way make $500 to $1200 per acre.

FREE BOOK TELLS HOW you can make big and quick profits growing and selling strawberries the Kellogg Way. Pictures and fully describes the world-famous Kellogg Strawberry Gardens, also the wonderful Kellogg Everbearing Strawberries. Offers big cash prizes to boys and girls, and gives the women folks 30 recipes for making delicious strawberry dainties. Write today—it's FREE.

R. M. KELLOGG COMPANY
Box 160 Three Rivers, Mich.

FREE AND POST PAID

WRITE FOR IT TODAY

Spray with an "EVER-READY, JR."
(Power Sprayer)

Leading fruit growers have sworn by it for years. High quality 2 H. P. engine, 100-gallon steel-bound tank, 2 cylinder high pressure spray pump, and a mighty good engine for other work.
Write to-day for descriptive booklet and prices.
Van Nouhuys Machine Works, Albany, N. Y

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RIPEN
CROPS
EARLY

Dealers and Agents Wanted

THE J. E. TYGERT CO.
28D So. Delaware Ave.
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SUBSIDIARY OF THE AMERICAN AGRI. CHEM. CO.

Dibble's 1918 Catalog

of high grade Farm Seeds
Alfalfa, clover and Grass Seed, Seed Corn, Oats, Barley, Spring Wheat, Buckwheat, Field Peas, Field & Soy Beans, Millet, Vetch, Rape, etc., Seed Potatoes FREE.
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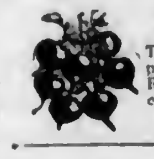
Headquarters for Farm Seeds

REMOVAL NOTICE OF
I. N. SIMON & SON SEED CO.

The growth of our business has forced us to move from our old location, at 6 N. Front St., to a new and larger store, at 438 Market St., at Philadelphia, Pa.
We shall be glad to welcome our customers at our new store.
Our 1918 catalog is ready for mailing. A postal will bring you a copy.

CLOVER SEED

Our high grades of Grass seeds are the most carefully selected and recleaned. Highest quality in Purity and Germination. To grow Bumper crops good seed must be sown. We pay freight. Catalog and samples free if you mention this paper.
GLICKS SEED FARMS
Smoketown, Lancaster Co., Pa.



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Three earliest vegetables in cultivation for 10c. One packet each, Robinson's Earliest Tomato, Earliest Round Red Radish, Earliest Lettuce. 10c to new customers. Regular price 20c. CATALOG FREE.
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CLOVER, Timothy, Alsike, Alfalfa, Oats and all kinds of PURE FARM SEEDS direct from producer to consumer; free from noxious weed seeds. Ask for samples.
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W. D. POWER & CO. 601 W 33 St., New York
are the largest handlers of commission hay in greater New York; if you have hay to dispose of communicate with them.
HAY

Be independent of the railroad
by owning a good used automobile

Think of the time you could save and the many things you could do if you had a **dependable** automobile.

A **good** automobile is indispensable for your light hauling: your trips to the general store; the transportation of grain, seed, milk, machinery parts and purchases of all kinds. It will take care of many extra tasks imposed by the shortage of labor and will even help you to secure labor.

And then, on Sunday, it will carry you and your family to church.

A opportunity is offered you to buy a **good** automobile at an attractive price in our semi-annual

SPECIAL SALE of USED CARS
For one week beginning Monday, Feb. 4th

All the cars in this sale have been traded in to us on the purchase of new Cadillac automobiles. We do not conduct our Used Car Department for profit, but merely for the convenience of new car purchasers. During this sale special bargain prices will prevail.

The eight-cylinder Cadillacs in the sale carry our guarantee. They have been thoroughly overhauled and repainted and do not look like used cars. Cadillac cars of other models in good running condition are also included in this special sale.

You will find in our stock just the car that you need at the price you are willing to pay. The list of other makes includes:

1917 Hudson Limousine
1917 Hudson Sedan
1917 Lexington Touring
1917 Haynes Sedan
1917 Studebaker Limousine
1917 Franklin Limousine
1917 Chandler Roadster
1917 Hudson Touring
1916 Ross Touring
1916 Oldsmobile Touring
1916 Cole Convertible
1916 Oldsmobile Roadster
1916 Paige Cabriolet
1916 Big Six Buick Touring
1916 Buick "Six" Roadster
1916 Stutz Roadster
1916 Paige Touring
1916 Haynes Touring
1916 Hupmobile Sedan
1916 Stearns
1916 Stutz Touring
1915 Chalmers
1915 Paige Touring
1915 Overland
1914 Cole Sedan
1914 Oldsmobile
1913 6-40 Hudson Victoria
1913 Simplex Limousine
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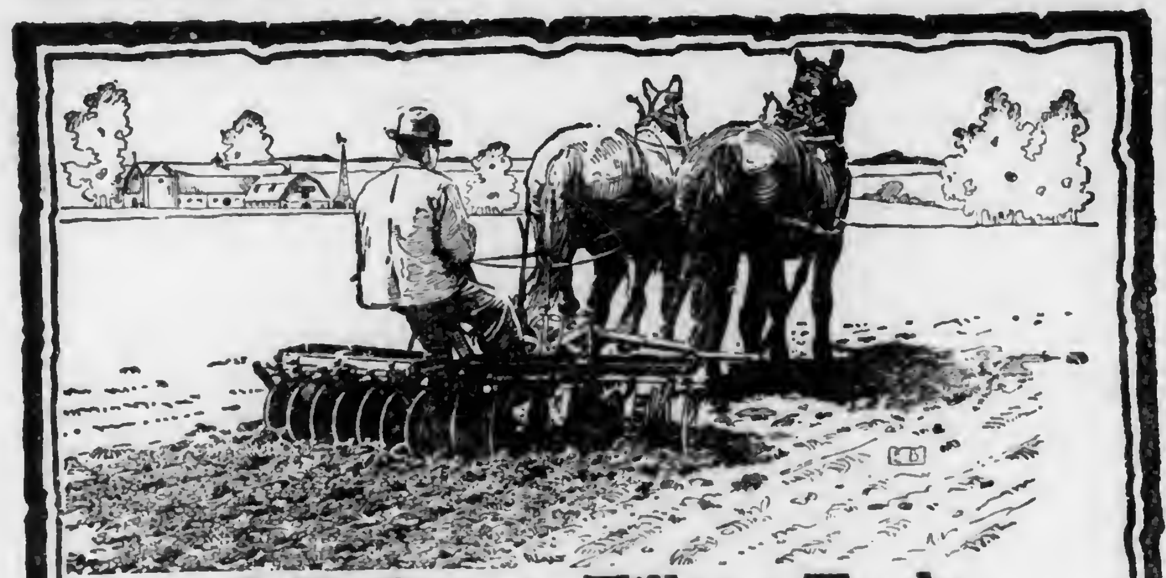


Still Better Tillage Tools
Deering—McCormick—Osborne

HAVE you seen the **New Third Lever** on a **Deering, McCormick, or Osborne** Three-Lever Disk Harrow? **It is a depth regulator.** With it you raise and lower the inner ends of the disk gangs to meet *all* field conditions. You do this quickly and easily, without in any degree destroying the rigidity of the gangs, for which International Harvester disks have always been famous.

Have you seen the **New and Exclusive Attachment of the Tandem?** This is another feature we are proud of. The connecting braces tie to both leading gangs, extending from the tandem in such a way that the gangs *must* cut the ridges left by the leading gangs. In turning corners, the sliding connecting braces allow natural flexibility and following of the tandem without crowding sidewise.

International Harvester disk harrows have done top-notch good work for many years. They have built-in weight boxes, adjustable forecarriage, 4-wear wood bushings, tall hard oilers, etc., etc. This year they are simply unbeatable.

When you want seed beds that are right, be sure your tools—disk harrows, peg and spring-tooth harrows, cultivators, etc.—are **Deering, McCormick or Osborne.** Write us.

International Harvester Company of America
(Incorporated)
CHICAGO U S A
Champion Deering McCormick Milwaukee Osborne

bed every year, setting the plants as early in April as possible. The plants are taken from last season's crop. It is easier to keep a new bed clean than working an old one. A heavier yield is obtained, and the grower is able to keep ahead of diseases and insects that affect strawberries. There are a few varieties, however, that yield heavier the second year than the first, among them being the Gandy. Extensive investigations made by the Maryland station show that the yield of strawberries depends upon the stand of plants. Some varieties susceptible to leaf blight cut down the yield, as also do varieties with few runners. Mr. Ballard would set plants of such varieties closer together.

Prof. T. B. Symons, in charge of State Extension work and secretary of the Maryland State Horticultural Society, is a very busy man. He is a true son of the Eastern Shore and is doing much to promote better farming in the state. One of Professor Symons' hobbies is the belief that Maryland is a fine state for beef raising, and it was with genuine pleasure that he called our attention to the fact that Robert Crain, a Charles County Shorthorn breeder, at the International in December, sold the Shorthorn bull, Mt. Victoria Stamp 436234, to W. J. Hill, of Minnesota, for $9,000, and three or four other Shorthorns at prices ranging from $575 to $800, and all Maryland bred.

In his better farming extension work, Professor Symons is aided by a farm bureau man and a farm woman agent in every county. All these county agents are agricultural college trained men. A Pig Club movement is being promoted. Potato growing is being developed in Western Maryland. A wilt-resisting tomato has been developed. Seed sweet corn is being selected to develop a better type. A state vegetable growers' association has been organized to boost the trucking industry. Both the wheat and corn crops were increased 15 per cent in 1917 over former years, and the same efforts are being made to break the record again this year.

The community fruit show is a new development in Maryland. Instead of holding one big show in Baltimore, sixty community shows were held last fall, with 5,000 exhibitors and an attendance of 30,000. In a trip down through southern Maryland we found the farmers generally prosperous. Last year's crops of corn, wheat and tobacco were large and farmers are getting good prices for all their produce.—Reynolds.

Timely Fruit Notes

By Dr. J. P. STEWART

Queries on Home-Made Lime-Sulphur

"Will you please advise regarding the following points in the home-preparation of lime-sulphur concentrate for spraying purposes:

"Our equipment consists of a large cooking tank built over a furnace using wood for fuel. The tank is equipped with a mechanical agitator, and there is a separate mixing tank for reducing the sulphur to a paste (with warm water) before emptying it into the cooking tank. The boiling period is about 45 minutes; the formula is 100 lbs. burnt lime, 200 lbs. commercial ground sulphur, 100 gallons of water. The sulphur paste is emptied into tank as soon as the water begins to boil, and the lime is immediately added — as rapidly as possible without causing the solution to boil over from too violent slaking. The Baume test varies from 18 degrees to 30 degrees. The points I wish to bring up are these:

"Of what value is it to reduce the sulphur to a paste before putting it into cooking tank?

"May the Baume test be influenced by the order in which the ingredients are added?

"Is it necesary, or advisable, to keep the solution agitated mechanically during the boiling period? Why?

"Should the solution be boiled vigorously, or will it test as high if it is allowed to merely simmer during the period?

"What is the most economical formula for the home preparation of the concentrate?

"What is the maximum Baume test possible from the 50-100-50 formula, assuming ideal methods?

"Of what possible disadvantage is the presence of sludge in the concentrate, provided the solution is well strained when running from tank into barrels? Of what possible advantage? Has the clear commercial solution any superiority over the home-made solution, assuming that each should test say 30 degrees Baume? Of course the higher Baume test is more desirable for commercial purposes as it requires greater dilution.

"Certain manufacturers of commercial solution have advised us there is a much larger percentage of 'tetrasulphide' and less 'thiosulphate' in the clear commercial fluid than in the home-made, and have consequently tried to discourage us from making and using our own. Be that as it may, our own solution controls scale satisfactorily. However, I would like to know if the home-made solution when properly protected will keep as well or as long as the clear commercial solution, and why or why not.

"Is there any practicable way to remove the sludge by filtration from the home-made solution?" C. F M., Virginia.

There is no value in reducing the sulphur to a paste before putting it into the cooking tank, provided the stirring in the cooking tank is sufficient to get the sulphur thoroly mixed with the water and prevent the formation of lumps or pellets. As a matter of fact, we have long since abandoned the mixing of the sulphur into a paste before placing it in the cooker. The order of adding the ingredients has no effect on the density of the product. In general, however, we prefer to add the sulphur first so that we can get the full effect of the heat of slaking.

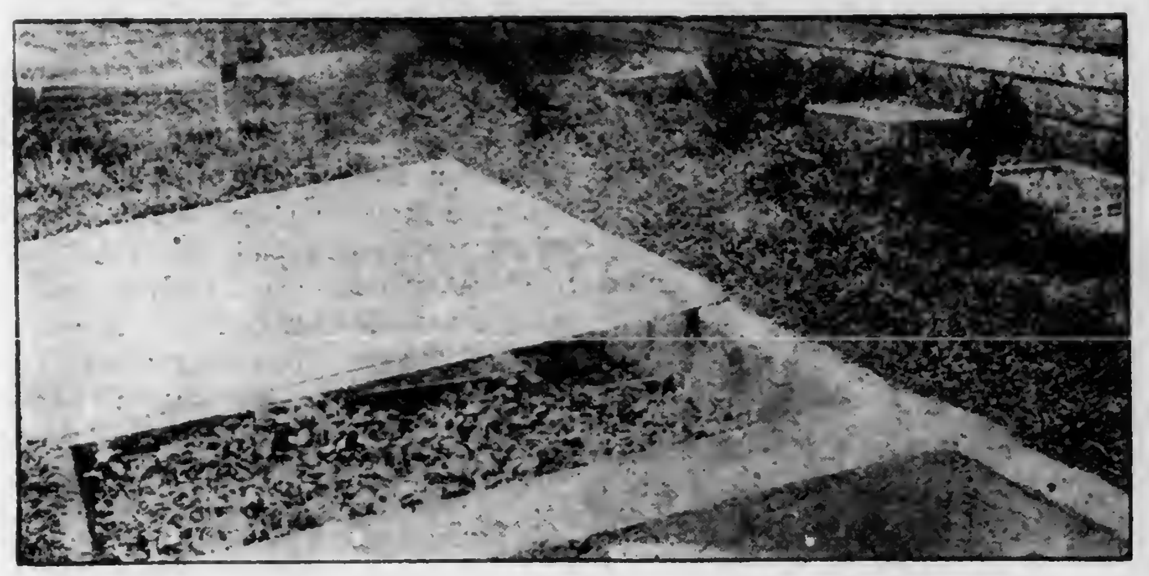
It is very important to keep the materials well agitated during the boiling in order to keep the lumps and pellets of sulphur thoroly broken up. The vigor of boiling has little or no effect on the final density. In fact, some of the highest testing products that we have made have been secured by relatively mild boiling. The most economical and practical formula for the home preparation is one having the following ratio: 1 lb. of lime and 2 lbs. of sulphur to 1⅓ gallons of final product. This will give much less sediment than the 1-2-1 formula and will naturally give a third more material. Under the best conditions, this formula will give a product testing from 25 to 27 degrees Baume or possibly slightly higher in exceptional cases.

The maximum Baume test securable under practical conditions from the 50-100-50 formula is from 28 to 30 degrees Baume, and this is the test that you seem to be getting.

The only possible disadvantage from the presence of the sludge when well strained is that it may dilute the efficient materials a trifle and thus weaken the spray. This danger is usually slight, however, as the actual total volume of the sludge is seldom over 5 percent of the total volume of the concentrate, and part of this would probably be removed in straining. There is very little advantage in the sludge, if any, altho it may give a trifle more "body" to the spray and thus show up a little more on the limbs.

The clear commercial solution has no superiority over a home-made material testing the same. There is probably a trifle more of the tetrasulphides and less thiosulphate in the denser solutions, whether home-made or commercial, as the additional boiling and lower volumes required to secure the greater density tend to precipitate the thiosulphate and thus add to the amount of sludge. The slight difference in percent of thiosulphate in the concentrates of lower density, however, has no impotent practical significance, in my opinion.

I have a sample of home-made concentrate which I made here in February, 1909, with a density of about 36 degrees Baume, which is still in perfect condition, altho it was subjected to freezing and thawing several times since it was made. It is cut off completely from leakage and contact with the air, however, and these are the important considerations in effective storage of any type of lime-sulphur.



A Hotbed Adds to the Interest and Success of Gardening

The sludge can be very largely removed from home-made solutions by means of a strainer which strains upward, of the type suggested by the writer some years ago in Bulletin 115 of the Pennsylvania Experiment Station. To do this, however, one must use a strip of cheesecloth or similar material in connection with the screen in the strainer. This will naturally retard the straining process very materially, however, and whether or not it really practical will have to be settled by the orchardist. It is, of course, also possible to remove the sludge from 50 to 70 percent of the concentrate by permitting it to settle and syphoning off the clear top portion. This method, however, is very wasteful of solution, as a large quantity of it remains with the sludge unless some satisfactory provision is made for using the residue left by the settling.

APPLE SCALD A PREVENTABLE DISEASE

A report of investigations made by Charles Brooks and J. S. Cooley in the Journal of Agricultural Research states that accumulations of carbon dioxide (chronic acid gas) produced by the apples in storage, the lack of air movement in the storage rooms, and the depositing of moisture on the fruit, are all factors that may play a part in the production of scald. The relative importance of these factors is a matter for further investigation. The experiments indicate that high humidities may be maintained in storage without the development of scald, and prove conclusively that an occasional renewal of the air of the storage room will completely prevent the disease. This has been demonstrated in repeated experiments with several varieties of apples. Well aerated apples remained free from scald, while in all cases poorly aerated ones handled in the same way from the time they left the tree thruout storage, became badly scalded.

CONTROLLING BROWN ROT

Dr. Donald Reddick, of Ithaca, spoke on "Plant Diseases," at the horticultural meeting at Rochester. He showed that there is a great economic waste of fruit in transit. Much of this loss is due to brown rot fungus. The destruction of curculio has a tendency to reduce the damage by the rot, as the spores find their way into the peach thru abrasions in the skin. Brown rot in Elberta orchards is negligible. These punctures may be caused by careless handling in packing houses.

Dr. Reddick said it is believed that closed refrigerator cars are responsible for the development of rot in transit, and suggested that peaches might carry better in open cattle cars than in refrigerator cars. In fact six cars of over-ripe fruit were shipped from Western New York to Detroit in cattle cars last fall and sold at highest prices. He believed that investigations should be made to ascertain the effect that ventilation has on reducing the brown rot. He reported that the dust method has been effective in controlling brown rot in orchards. If applied lightly the dust mixture can be put on in safety a day or two before the fruit is picked, if the poison is left out, and it will not show on the fruit. A light dusting with lime sulphur, 80 percent sulphur, 10 percent arsenate of lead and 10 percent hydrated lime, a week before you pick the fruit is a good practice, according to Dr. Reddick. He did not think that the peaches would taste of sulphur unless applied too heavily.

Fertilizers

Conclusions based on fertilizer experiments in an apple orchard at the Geneva station, covering a period of twenty years, were presented by R. D. Anthony, of Geneva. As a war measure the department of Horticulture at Geneva recommended that no fertilizers or manures be applied to apple orchards in soil of average fertility. The twenty years experiments show that the station's advice is sound.

AGAIN
The Farmer's Opportunity

Farmers Obtained Record Prices for Produce last year. Should do so Again this year.

Farms should be run to Capacity and Proper Fertilizers Liberally used.

Use MAPES MANURES

Their Standard Absolutely Maintained in Field and State Experiment Stations.

All during the war the Mapes Manures were made and are being made precisely as in the past, under pledge to supply the Phosphoric Acid from Animal Bone and Guano, made available without acidity, no Rock or Acid Phosphate used. While they do not contain as much Potash as formerly, they do hold enough to greatly aid the present crop to more perfect growth and development, and thus insure the balance of its necessary Potash being taken from latent soil supplies.

Our splendid record with the State Experiment Stations of 1916 again maintained.

We give below the average of all the Station Analyses which we have received of our prominent brands for 1917.

1917 ANALYSES

	Ammonia	Phos. Acid Available	Total	Potash
MAPES POTATO				
Average of six State Station Analyses..	4.95	7.74	9.08	1.09
Guarantee	4.50	8.	8.	1.
GENERAL SPECIAL				
Average of four State Station Analyses.	7.29	6.22	9.04	1.64
Guarantee	7.	6.	8.	1.
TOBACCO STARTER IMPROVED				
Average of four State Station Analyses.	5.23	6.14	8.33	1.12
Guarantee	5.	6.	8.	1.
CORN MANURE				
Average of four State Station Analyses.	3.24	7.67	10.74	1.07
Guarantee	3.	8.	10.	1.
TOP DRESSER, FULL STRENGTH				
Average of two State Station Analyses.	10.24	6.34	8.45	1.82
Guarantee	10.	5.	8.	1.
TOBACCO MANURE				
Average of two State Station Analyses.	12.12	6.34	8.45	1.82
Guarantee	10.	....	8.	1.

We are equally proud of the results in the field. They have been most excellent, fully substantiating our theory as to the advisability of supplying at least limited Potash to aid the crop to make a start, and so enable it to avail itself to the utmost of the latent supplies of Potash in the soil.

Order at once. Under this year's conditions it is the only way to be sure of having your Fertilizer when you want it.

The Mapes Formula & Peruvian Guano Co.
Central Building, 143 Liberty St., New York Branch, 239 State St., Hartford, Conn.

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To Make New Customers
SAMPLES FREE
Highest Quality—Recleaned Seed—Government Tested.

Guaranteed as represented, sold subject to Government or State test and your approval. We want no customers to keep seed unless they are convinced they have saved money and have a decided bargain. That is the way we sell our seed. We leave it to you to decide and give you 30 days' time for testing. Don't pay two profits on Grass Seed. Write to headquarters and get the best at right prices and save money. Also have some high-testing seed corn. Write us today

BEFORE YOU BUY SEEDS, GET OUR SAMPLES AND COMPARE OUR QUALITY AND LOW PRICES

Bargains you can't duplicate on all Field and Grass Seed of all kinds. Be sure to investigate before you buy. It means dollars to you. We are the largest growers and dealers in Seeds selling direct to the Farmer and can offer the biggest and best bargains. Our customers will testify to this fact. Get our 116-page catalog and be convinced. Write today for special prices and samples of seed you wish to buy. It will mean money to you. Write

A. A. BERRY SEED CO.
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Recleaned OATS. WHEAT. BARLEY. SUDAN GRASS. SWEET CLOVER AT BARGAIN PRICES.
Recleaned CLOVER $14.40 PER BU. AND UP Guaranteed
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CLOVER AND TIMOTHY MIXED At Low Prices Guaranteed
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BERRY Saves You Money ON PURE Tested, Guaranteed SEEDS

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No hugging of stoves; No cold floors; No icy bedrooms; No necessity for living in *one* room if you install one of these wonderful, economical heaters.

The children can play on your floors. You can have healthful, delightful warmth *everywhere* in your home. Yet it costs far less than running several fires and saves the trouble of carting fuel in and ashes out. Just *one* simple fire to tend.

NEW-IDEA
Pipeless Furnace

Simple but scientific. Good for most homes, schools and churches. Easy to install and run. A special double casing keeps warm air circulating upstairs, and keeps cellar perfectly cool.

Send at once for free catalog, fully illustrating and describing this wonderful furnace. Write today for free catalog and prepare for next winter. We give expert Heating Advice Absolutely Free.

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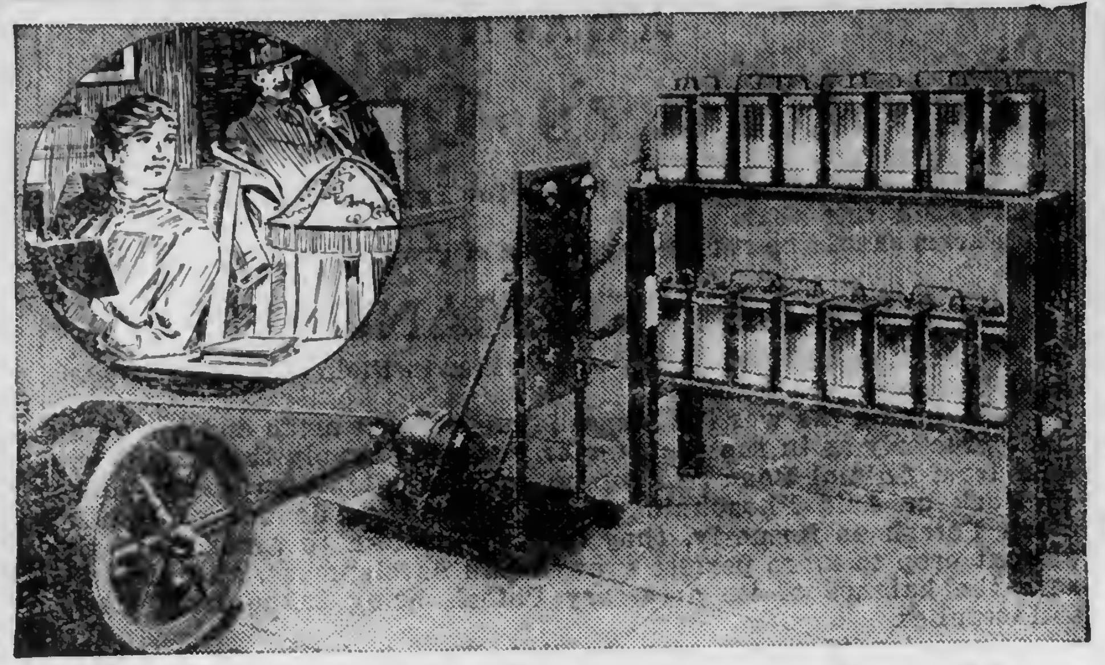
Live Agents Wanted for Open Territory.



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Western Electric

Farm Light and Power Plant

"By all means buy a Western Electric plant. They are the largest electrical goods dealers in the country and their reputation is for very square, honest dealing, giving you good value for your money.

"I have a total of 35 lamps in my new home, barn and chicken house, and besides supply my old home 75 feet away with about 15 lamps.

"I have a pump in basement which draws water from a spring about 250 feet distant, and forces it into a tank in attic on third floor, a height of 35 feet. I pump, charge batteries and light lamps at the same time.

"The directions are simple and if read carefully a few times, can be easily understood. I knew nothing about running a plant when I put my plant in. I have not spent a cent for repairs to the battery, switchboard, wiring, generator, or any part of the plant the Western Electric Company furnished."

(Name of writer on request)

There is a Western Electric Light Plant that will give you just the same kind of service. Find out about it now, and get electricity on your farm before winter is over. Mail the coupon to our nearest house.

WESTERN ELECTRIC COMPANY
INCORPORATED
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195 Broadway, New York, N. Y.
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WESTERN ELECTRIC COMPANY: Please send me illustrated booklet, No. PAF-2, "Brightening Up the Farm."

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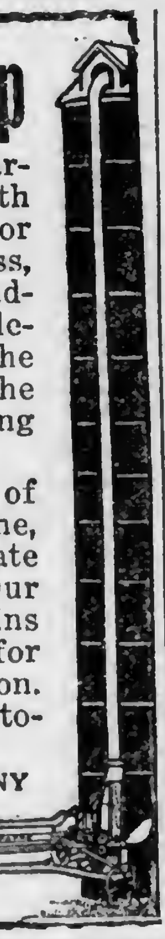

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into any Silo is the guarantee that goes with every Papec — large or small. You, doubtless, will not need to take advantage of the full elevating power of the Papec, but you have the satisfaction of knowing it's there—in reserve.

There are four sizes of Papecs. A gas engine, 3 or 4 H. P., will operate the smallest size. Our 1918 catalogue explains how a Papec will pay for itself in one season. Write for your copy today—it's free.

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25 Convenient Distributing Points

THE Suction-feed principle insures clean skimming—no matter whether you turn fast, medium or slow. The

SHARPLES

Suction-feed Cream Separator is the *only* separator that skims clean and delivers cream of even thickness at varying speeds. Write for catalog.

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The Famous Unadilla Ladder

The Unadilla Ladder is a real ladder, not a makeshift; where it should be—**directly under the opening.** It comes as regular equipment, on each door front, rungs 15½ in. apart and 5 in. from the doors. Boys, old men and even women have no difficulty in climbing or entering the silo.

Every Unadilla hoop is tightened in one place—at the door front, where the ladder is always ready, inviting. Door frames are adjustable, at points conveniently reached by the ladder.

Learn about the other superior and equally famous Unadilla features. Send today for catalog, prices and *agency offer.*

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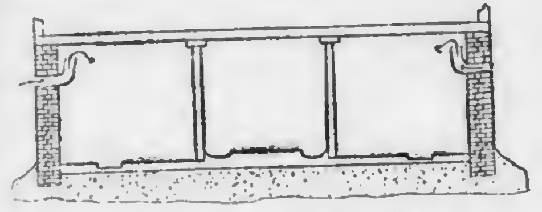
Ventilating the Stable

Systems Described and Compared

The fresh air propaganda so popular in recent years is an important factor in the care of farm animals. Its real necessity was probably first recognized by the advent of the modern stable. In the old grain-selling days but little stock was wintered. Such as were on hand usually found shelter and feed around the time-honored straw stack. This was perhaps preferable to stabling for in those ancient shacks ventilation was rather too well provided for; the big problem being how to keep the air out, not how to get it in. Hence, farmers of the old school might in the light of present conditions be considered as having been cruelly neglectful of the welfare of their animals. Yet there are many nowadays who might with equal reason be accused of being cruelly solicitous regarding them. It has been found that a cow can warm a space containing 600 cubic feet and maintain the temperature, but if there is no ventilation she will smother before morning.



Stable Intakes in King System

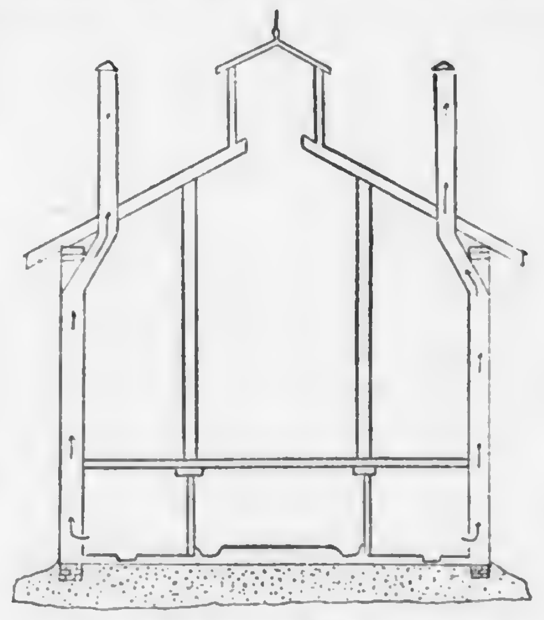
Imagine a herd of cows confined by solid walls of masonry with tight fitting doors and windows, and you have an idea of the situation where the question of ventilation is not given attention. A little fresh air may be admitted in one way or another, but apparently this is not intentional. The object is, of course, to keep the cows warm and comfortable so that they will produce milk abundantly at a minimum of cost in feed. But this can only prove a blind hunt for the dollars. They may yield fairly well, possess a certain degree of health and seem contented, yet it is pretty certain that a veterinarian would not have to go very far in his search for evidence of disease.

No one will deny that plenty of fresh air is desirable and furthermore that it doesn't cost anything. To utilize it to the best advantage will, of course, require a small outlay, but few will hesitate for that reason if thoroly convinced that such an investment means larger returns. Experiments prove pretty definitely that the value of these improved conditions far exceeds the cost of supplying the fresh air.

The System Used

Many systems of ventilation have been devised, but so far none can be considered perfect. By this, it is meant that they are not sufficiently automatic to be self-regulating. All require a certain amount of manipulating or controlling in order to give satisfactory results. Too much, therefore, should not be expected. The big outstanding purpose is to supply fresh air and to remove foul air. Yet a good system is often condemned when its failure to work properly is entirely due to the lack of necessary attention, such as would be called for by changes of temperature or variation in wind velocity. Again, when a system is installed its capacity is frequently guaged by the coldest weather requirements which make the flues or air-conducters much too small for warm weather. Then, as is sometimes the case, the owner expects too much. For instance, the walls and ceiling may be faulty in construction but if moisture accumulates on them he concludes that the system is a failure. As a matter of fact, if the walls are to be kept dry they must be more or less insulated; that is, have a dead air space for preventing too rapid conduction of heat. This, together with a fairly rapid circulation of air in the stable, would give about the proper degree of dryness.

Effectiveness in ventilation is promoted by having enough cattle to fill the stable without overcrowding. Too many animals make it difficult to ventilate without causing draughts; too few make it impossible to keep the temperature up and at the same time provide a circulation of fresh air. Low temperature does not always mean pure air any more than warm air is impure air. Thus it will be seen that it is decidedly important to have the stable, as it were, fit the herd. In order to calculate the number of cattle the stable ought to accommodate, from 600 to 800 cubic feet of air space should be allowed to each cow two years old and over. This arranged, a 15-inch and 8-inch area must be provided for the outlet and inlet, respectively, to each animal in the stable. This means that a stable 36x30x10 feet is about right for eighteen or twenty head, and should have an outlet of about 18 inches square, and two inlets at least 6x12 inches each. Outlet shafts must be neither too large nor too small. If the former, they are likely to be constantly dripping in warm weather and freezing in cold, due to sluggish air currents; if the latter, they will be wet and dripping practically all the time, and will carry off impure air too slowly.



King System of Ventilation

There are at least five essential points that any satisfactory system of ventilation must possess: (1) Ease in installation; (2) adaptability to the stable where employed; (3) suitability to variety of weather and climate; (4) facility of operation and control; (5) effectiveness in all parts of the stable.

There are perhaps only two systems that have survived the tests of experiment stations and practical farmers thruout the country, that bearing the name of the late Prof. F. H. King, of the University of Wisconsin, and the system designed by Dr. J. G. Rutherford, formerly Live Stock Commissioner of Canada. To these fresh-air pioneers must be awarded the credit in their respective countries, of developing the idea of ventilating farm buildings. The former is more popular in the United States while the latter is the prevailing system in Canada. This is probably due to entirely different climatic conditions in the two countres. The winter air south of the border is, over a large part, notoriously moist, while as one comes further north the intense cold is hardly noticeable because the air is more dry. This appears to account for the main difference in principle of these two well-known systems.

Systems Compared

Primarily, each system consists of two sets of flues, one for the removal of impure air and the other for the admission of fresh air. Here, however, the similarity ends. The King system is based on the principle that expired air contains a high percentage of carbon dioxide, and is heavier than pure air. For this reason the outlet flues begin well down toward the floors of the stable where the impure air will collect, while the fresh air is introduced by means of inlet flues placed near the ceiling. The theory is that the incoming air will circulate to some extent and thus become more or less warmed in settling to the lower levels as the impure air beneath is being removed by the suction of the outlet flues.

The Rutherford system, while similar in construction and location of flues, differs in regard to their arrangement. For instance, the outlet flues begin at the ceiling, extending up from that point, while the inlet flues deliver the fresh air into the stable at a point near the floor instead of at the ceiling. The basic principle in this case is the assumption that the incoming air being cold and heavier will seek the lower levels, and that the impure, expired air, warmed in the bodies of the animals, being lighter, naturally ascends to the higher levels.

At first thought, a consideration of the two systems would lead one to think that either one or the other is radically wrong. But as stated, the climatic differences of the two countries may have something to do with it. Authorities on the subject explain it in this way: The Canadian air is so dry that even the addition of the moisture expelled from the lungs is not sufficient to counterbalance the buoyant effect of the coincident warming—hence the impure air would naturally be found on top. In warmer regions, where the King system is popular, the moisture content of the open air is much the same as that expired by the animals. Here, the heavy carbon dioxide is more likely to be the controlling factor.

For the successful operation of either system the walls and ceiling must be fairly tight. It is also desirable to have all flues with as few angles as possible and to have them well protected to prevent the air within from becoming chilled. — J H. McKenny, Ontario.

LEAGUE OFFICERS INDICTED

The excitement up-state over the indictment of seven members of the Dairymen's League somewhat overbalances the interest in price fixing for milk in January and the succeeding months. The January price for 150 miles out from New York is $3.52 for 3 percent milk, with four cents a point for higher tests. Dr. Jordan calls 3.8 percent milk the average sold by farmers, and this milk brings at 150 miles out a little over eight cents a quart or $3.84 a hundred pounds.

As for the indictments, there are few who do not admit that there has been a technical violation of the Donally act of the state. Some say that a jury will acquit the officers of the League, but others think that a New York City jury is quite likely to convict them. Some men feel sure that in case of a conviction it will be easy to get a reversal upon appeal. Secretary Manning says he wants the case to be tried, because he wants to know whether or not the League has a place on earth. Many think the case will never go any further than it is now advanced. The men are under bonds for one thousand dollars, the amount indicating that the criminality is not considered great. If a conviction is secured and is sustained on appeal, and the League is dissolved, as some think is the ultimate intent, then it seems probable that another organization will be made upon the shortest possible notice. Dairymen have certainly been united by the indictments, and it will be easy to re-organize, judging from present indications.

The present price for milk is for January only. If feeds decline by February, the price may be lowered for that month. It was shown that the December price was 42 cents a hundred too low, but as yet no provision has been made to make up the loss as was instructed by the food administration. It seems probable that this will be attended to later on, but, of course, it may go by default. There seems to be an opinion that spring and summer prices will be higher than usual in order to adjust losses, and to bring about a more even price thruout the year. How this may work out is questioned by many dairymen.—H. H. L., New York.

ACTIVE GUERNSEY BREEDERS' ASSOCIATION

Grove City Dairymen Point The Way

What promises to be a very active breeders' association is located around Grove City, Mercer County, Pa. When the much written-of Government creamery located here, Guernseys in this section were about as scarce as water in the Sahara Desert. In fact some of the farmers who had until this time fattened steers did not know there was such a breed and did not care much if they did know it. However, a few of the farmers who kept a few cows, made butter at home and sold or nearly gave it away in the local market, knew of the breed and hoped that if ever a market for their product came they would increase their herds and get into the Guernsey business.

Such a market came about two years ago in the establishment of the Government Creamery, and then these men set about to realize their ambitions. It was such a crowd as this that met with hearts full of enthusiasm last March in the Commercial Club rooms in Grove City and organized the Grove City Guernsey Breeders' Association. When the association organized, of the 18 who were charter members, only ten had any purebreds and most of these were in the form of a bull to breed to their grade cows. Now, nine months later, all either own a bull out-right, or jointly with a neighbor, and there are over 35 females owned by members of the association. Besides these there are 12 heifers owned by future

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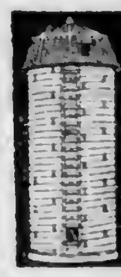

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Write at once for free sample of Krause Dairy Feed, also useful pocket size record book. Be sure to give name of your dealer.

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members of the association, viz. members of the Boys' and Girls' Calf Club.

Among the bulls being purchased are some of the best blood lines of the breed. One member owns a son of Anton's May King, the bull recently leased for a year for $1,500, and out of a 500-pound cow. Another has a son of Galaxy's Sequel and still another a son of Imp. Billy France. In order to be building up their grades at the same time the purebreds are increasing, about half of the members of the association belong to a cow-testing association.

When the association organized it was decided to use up one-half the one-dollar membership dues in the purchase of breed stationery with the name and address of each member printed along the edge of the sheet. For local advertising we use a neat card 12x14 inches with the words, Member of Grove City Guernsey Breeders' Association printed on it. These are tacked on the barn or some conspicuous place. On Labor Day a crowd of 45, made up of members and their families, gathered in an oak grove on the farm of one of the members and had a basket picnic. After dinner, addresses were heard from M. T. Phillips, Chester Co., Pa., a prominent Guernsey Breeder who represented the American Guernsey Cattle Club, County Agent Fred Linginger and one or two others who gave much encouragement and timely information to guide the members in their future breeding operations.

Yearling Milking Shorthorn Heifer, Owned by C. M. Kennedy & Sons, Bradford County, Pa.

A later move by the Association was in the sending of an exhibit of fourteen head to the Stoneboro Fair. This was the first time in fifty years of its existence that this fair has had an exhibit of Guernseys. Another point soon to be taken up by the members is to fix a certain charge for outside service for their bulls, and it is quite probable that a Bull Association will be formed.

All of these points are given in order that they may be an inspiration to other sections where there are only a few Guernsey breeders and to show what may be accomplished in such a short time by the formation of a breeders' association. — Hugh Fergus, Butler Co., Pa.

PRODUCTION OF DAIRY BREEDS

Breed Averages as Shown in Department Bulletin

In Farmers' Bulletin 893 of the U. S. Department of Agriculture, "Breeds of Dairy Cattle", the average productions of five breeds most generally known are shown. For Ayrshires the average of the 2,598 cows that have completed yearly records for advanced registry is 9,555 pounds of milk testing 3.95 percent of butterfat, amounting to 377.51 pounds of fat. The 10 highest milk producers of this breed range from 25,329 to 18,745 pounds of milk and the average of these 10 highest producers is 21,538.8 pounds of milk. The 10 highest butterfat producers among Ayrshires range from 955.56 to 744.73 pounds, with an average for these 10 of 855.4 pounds of butterfat.

Brown Swiss Records

In the Brown Swiss breed the average of 199 cows that have completed yearly records for the register of production is 10,868.7 pounds of milk, testing 3.99 percent, amounting to 433.45 pounds of butterfat. The 10 highest milk producers of the breed range from 19,460.6 to 16,496.7 pounds of milk, with an average for these 10 of 17,372.2 pounds. The 10 highest butterfat producers of the Brown Swiss range from 798.16 to 647.30 pounds, with an average for these 10 of 683.72 pounds of butterfat.

Guernsey Records

In the Guernsey breed the average of 6,200 cows that have completed a year's record for advanced registry is 8,934.44 pounds of milk, testing 4.99 percent, amounting to 446.01 pounds of butterfat. The 10 highest producers of this breed range from 24,008 to 17,297.51 pounds of milk with an average for these 10 of 19,337.9 pounds of milk. The 10 highest Guernsey butterfat producers range from 1,098.18 to 910.67 pounds, an average for these 10 of 976.75 pounds of butterfat.

Holstein Records

Among Holsteins, 3,220 cows that had completed a yearly record for advanced registry average 14,622.7 pounds of milk testing 3.424 percent butterfat, amounting to 500.7 pounds of fat. The 10 highest producers of this breed averaged from 31,246.9 to 28,826.4 pounds of milk, an average for these 10 of 29,898.34 pounds of milk. The 10 highest Holstein butterfat producers averaged from 1,205.09 to 1,017.28 pounds, an average, for these ten, of 1,090.89 pounds of butterfat.

Jersey Records

In the Jersey breed, the average of 5,244 cows that had completed yearly records for the register of merit was 7,792 pounds of milk, testing 5.35 percent, making 417 pounds of butterfat. The 10 highest milk producers ranged from 19,694.8 to 16,633.2 pounds, an average for these 10 of 17,703.4 pounds of milk. The 10 highest butterfat producers range from 999.1 to 875.2 pounds, an average for these 10 of 943.1 pounds of butterfat.

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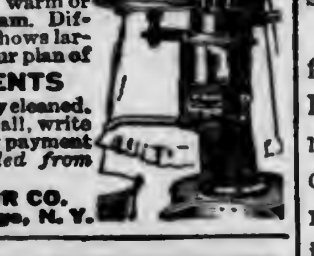

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When 100 lbs. of milk sell for	$1.00 Should for	0.50 Should sell for	$.50 Should sell for	$0.25 Should sells for
$1.60	$0.21	$0.32	$0.14	$0.16
1.80	.26	.37	.16	.18
2.00	.31	.42	.18	.21
2.20	.36	.47	.21	.23
2.60	.46	.57	.25	.27
3.00	.56	.67	.29	.31
3.20	.61	.72	.31	.33
3.40	.66	.77	.33	.36
3.60	.71	.82	.35	.38
4.00	.81	.92	.39	.43

100 lbs. of 3.5 percent milk will yield 4.0 lbs. of butter and 87 lbs. skimmilk, or 9.5 lbs. of cheese and 87 lbs. whey. Cost of making (per lb.) butter 3c, cheese 2c.—Butter, Cheese and Egg Journal.

FIVE SILO REASONS

This year the farmers in many sections have had the value of the silo brought home to them as never before. The first reason for a silo is the saving of the soft corn in years when the growing season is cut short and a large amount of corn cannot mature. The dairyman who is able to can the corn and stalks and save them for future use can surely make more profit than the man who is left with a large amount of dried stalks and soft corn.

A silo adds to the real estate value of a farm. Not long ago we were passing a fine farm without a silo which was for sale. A visitor who was a prospective buyer immediately saw the lack of the silo and as he wished to immediately place dairy cattle on the farm he discriminated against this place because of the lack. He knew that labor was high and scarce and did not wish to buy where silo building would be one of his first jobs, especially when he could buy a farm already equipped with a fine silo.

Silage is one of our best winter feeds to enable the dairyman to keep his cows producing in winter when milk is bringing a better price. Many complain about the price they are receiving for milk and in many cases it is a just complaint, but at the same time they should not neglect means of reducing the cost of production and here is a place where the silo is a winner.

The feeding of silage seems to reduce the labor of caring for cows. That is the animals can be kept in good condition with less worry than when other feeding materials are used in place of silage.

The dairy business looks discouraging to some farmers at this time but it is an industry that the world needs and is coming to appreciate. It looks to me as if the farmers with good cows have every reason to stay with the business if they like it and not jump too hastily into other lines. Next year the corn crop may be soft again and the farmer who puts up a quantity of silage will have cause to be thankful.—R. G. Kirby.

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"YOU remember in the spring, Mac, I applied V-C Fertilizer to my corn land. YOU didn't think 'twould pay. What happened? Where no fertilizer was used, my yield was about the same as yours. But where fertilized, the yield per acre was 13 bushels more. It only cost $3 per acre to get those extra 13 bushels.

"Now I've turned in my hogs. As fast as they consume 13 bushels of corn they put on over 100 pounds of weight. It's just plain business sense to convert $3 worth of fertilizer into $20 worth of pork. 50 acres of my corn land will make $1,000 more profit on hogs than was possible without V-C.

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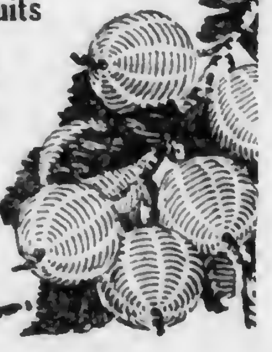

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is what you should buy. Made from the best of meat scraps, carefully sterilized. We guarantee every pound of it. Money back at once if not satisfied. Write for prices and feeding directions.

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PAY BEST BY EVERY TEST WRITE—EUREKA CHEMICAL CO. BALTO., MD.

Outlook for Sheep Farming

The Small Flock in the East

"Golden hoof" is more than a figure of speech; the sheep produces soil wealth which is as precious as gold. Poets, statesmen, scientists and farmers have given a great deal of attention to this profit-making farm companion. Sentimentally, politically and scientifically the sheep has been generously dealt with; practically it has not had its dues.

A reminder that sheep husbandry is assuming in American farming some degree of the importance to which it is entitled, is afforded by the expansion that is being accomplished at increased expense for breeding stock, but flock owners are willing to spend more money to increase their number of lambs so long as the market returns are high. In the intensely developed agricultural states the enlargement of farm flocks is slow, but high prices are exerting a strong influence, and sheep will eventually find new homes on many Eastern and Southern farms. Thoughtful farmers know that the demand for quality mutton is rapidly increasing and that wool at present prices is a profitable product. Moreover, the comparatively small expense of establishing and maintaining a breeding flock and growing wethers appeals to many farmers with moderate means who cannot afford to invest in cattle and buildings necessary to make dairying or beef production profitable.

While thousands of farmers who have no well-defined line of stock husbandry could, undoubtedly, make excellent profits from sheep by keeping them as a primary source of income, yet one is on safer ground when keeping a moderate sized flock as a complement to other branches of farming and stock husbandry. Many farmers who have given sheep farming only superficial study have become enthusiastic over the possibilities of the industry on the cheap lands in the Eastern and Southern states. Experienced flock owners, however, have found it more difficult to make the industry pay satisfactory profits when sheep were handled in large numbers. While the small flock, kept as a complement to dairying and other types of farming, may be made to pay handsome profits, one should think twice before he invests in too many breeding ewes and attempts to walk before he has learned how to creep.

Size of Flock

The average farm of from 100 to 200 acres of ordinary land will support from 75 to 200 ewes, as sheep are handled, and they, with their lambs, will consume about all the spare feed the farm can produce. If the prices are favorable and the ewes average one good lamb per head, each ewe should pay approximately $10, and if one can produce the feed necessary to carry the flock of lambs to January he can make them go $12 each, which means $2,440 from the maximum down to $900, which is nearer the average. This looks good on paper, and is fairly good for many cheap farms, yet sheep in large flocks present so many troubles and show up so many sources of loss that it is only a few men with a wide experience and considerable grit who could make a success of the large flock.

The 150-acre farm that is fertile enough to support from 75 to 100 breeding ewes should return an income of more than from $900 to $1,200 per year by keeping cattle and growing a cash crop in the rotation practiced in growing feed for the cattle. As a builder of soil fertility, the dairy cow probably stands above the sheep, because of her ability to handle larger quantities of purchased protein feeds and convert them into manure along with the farm roughages. But again, the sheep has an undeniable advantage in being able to convert weeds, waste products and roughages into manure. But there is no disputing the fact that every farm that is properly fenced and fertile enough to supply the necessary food crops should have a small flock of sheep to round out its quota of live stock. Thirty good ewes will clean up the fence rows, pastures and every weedy, unsightly field and consume considerable feed that would otherwise go to waste. The little time and attention necessary to keep the flock thrifty and comfortable can be made to return large profits. Weeds and brush stand a poor show on farms where a few sheep are kept, while small pastures and rough fields may all be made to contribute something toward the support of the flock.

Cost of Growing Lambs

In England—the home of the mutton sheep—it is a well-known fact that pound for pound of grain and green feed consumed, the mutton lamb returns greater profits than any other animal. To quote from W. H. Henry, long director of the Wisconsin Experiment Station: "Estimating that six pounds of skim-milk equals one pound of meal in feeding value, according to the Danish formula, we have 316 pounds of meal or its equivalent as the feed required for 100 pounds of gain with unweaned pigs. Using the same ratio for the skim-milk fed to lambs and estimating that 10 pounds of green clover is equal to one pound of meal, we have 284 pounds of grain, or its equivalent, as the feed required for 100 pounds of gain with lambs, or 32 pounds less than that required by the pigs. From this it is apparent that lambs make at least as economical gains for feed consumed as do pigs of the same age."

In experiments at the Michigan, Wisconsin and Minnesota State Experiment Stations, where lambs were fed clover and whole corn, they made an average gain in pounds per day of 0.29, with 0.25 for the lowest gain, and 0.37 for the highest. In all these lamb-feeding experiments it required an average of 350 pounds of clover hay and 506 pounds of corn to make 100 pounds of gain. At the Ohio Station a band of 176 ewes made made a gain in weight per head of 0.23 to 0.24 pounds. Clover hay and corn were the staple feeds and the cost per pound of gain ranged from 6.12 to 7.07 cents; the clover hay and heavy corn ration being the lowest in price, and the ration of clover hay, oilmeal and corn being the highest.

Profit in handling the farm flock is regulated by many factors but the cost of feed will always be the most important one. Just now when prices for grain and by-product feeds are so high, the need of working out improved systems of feed growing and better methods of feeding are of greater importance than ever. In this connection we find that experimentive evidence gives native grasses, rape and corn silage a prominent place in the list of cheap and efficient feeds. In many sections of the Eastern and Southern states native pasture grass will furnish the flock with profitable grazing from spring until late in the fall. Of course, supplemental feeds will be needed in times of drouth and for the ewes and lambs during the late summer and early fall, but otherwise the pastures afford the main support of the ewes and lambs. Such cheap pasture lands, removed from high-priced areas, make it possible for many flock owners to show large profits.

Selective Breeding

To produce prime mutton one must build up a flock of high-class uniform breding ewes by selection and selective breeding. A flock of uniform ewes, possessing the true meat-making form and well covered with fleeces of even length and quality of wool, are always a joy to the eye and a source of satisfaction to their owner, especially if it represents his own efforts and ideals of breeding. Always select the best ram that can be found at a reasonable price, and by this I mean a purebred ram that possesses the true meat-making form and one that is a true representative of the breed. Then save a few young ewes of each year's breeding, even if they are not so good as can be found in some other flock. It is making the flock more uniform and more of one stamp than bringing odd ones from different flocks. This insures a more even crop of lambs, which grow more evenly and mature at about the same time.

Progress may be slower at first, but by making proper selection of the young ewes and the use of superior rams improvement will be more certain and the cost of getting together the flock will be very light. Steady everyday effort, selecting the best within the flock and piling cross upon cross with superior rams will result in rapid improvement as sure as night follows day. The American feeder should try and cultivate the growing appetite for prime mutton. Good sheep will be needed to encourage this growing demand.

Mutton production, like beef production, in this country has been conducted upon the basis of buying feeders and finishing them for market on the farm or in the feed lot. Today conditions are more favorable for the farmer who keeps a band of superior ewes to produce his own feeders and finishes them for market on the farm where they were raised. An appreciative market awaits the production of a prime quality of mutton. Large hotels, exclusive restaurants and aristocratic clubs are all demanding quality saddles and legs, and they are willing to pay well for a strickly prime article. A few farmers, who are also breeders, are finding it very profitable to supply this trade with dressed carcasses of prime, young lambs averaging from 90 to 120 pounds. Such feeding is profitable in localities in close proximity to large cities.

Now is the time to fix farm machinery. Next summer there will be a shortage of labor and more need for sabor-saving devices. Iron is in demand for war purposes, and the purchase of new machinery, when repairs on the old will make it just as serviceable, will mean paying war prices for war goods.

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Dr. LeGear's Stock Powders 25c, 50c and $1 packages. 25-lb. pails, $2.50. 100-lb. barrels, $9.00.

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Expel the worms and keep their digestion in good condition, and they will assimilate what they eat and put on flesh. Feed is too high to waste—put it into flesh by giving your stock *Dr. LeGear's Stock Powders.*

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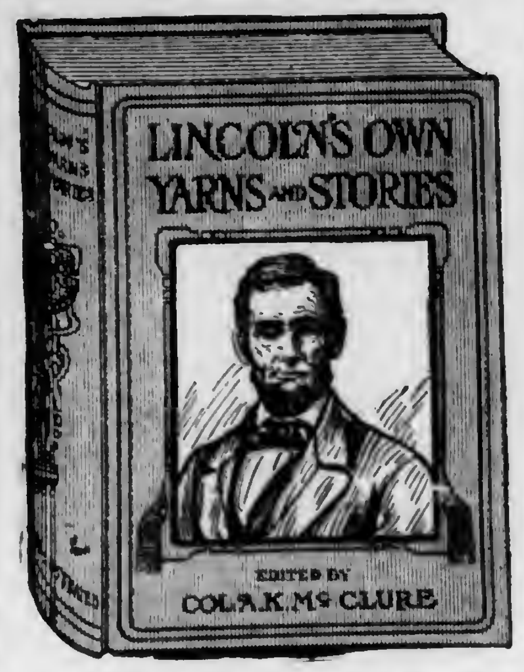
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This book is handsomely bound in cloth and contains frontispiece besides numerous other illustrations. The little incidents in the life of our Martyred War President related in this book gives the reader a better knowledge of his splendid character than is recorded in history.

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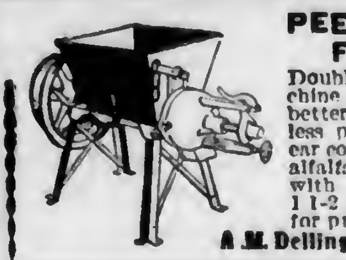

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Double crusher roll machine cut plates. Grinds better quality feed with less power, grinds green ear corn, small grains and alfalfa. Also furnished with cast plates. Sizes 1 1-2 to 20 H. P. Write for prices & catalog.

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Farm Products Prices and Prospects

TO THE CORN GROWERS OF THE UNITED STATES

You have demonstrated your ability and patriotism by raising the largest corn crop ever produced and have accomplished it under rather unfavorable seasonal and labor conditions. This accomplishment entitles you to special honors.

Now a greater opportunity and task confronts you and the earlier its magnitude is realized, the better will the country be fortified.

Last spring you had a good supply of good seed. Now a very considerable area has suffered a cold, backward summer, and an exceedingly large percent of the corn was frozen so early as to make seed saving impossible. As there is practically no hold-over supply, the frost stricken and drouth stricken areas must import seed, and next year's success depends upon the promptness and thoughtfulness with which these importations are made.

As considerable corn matured thoroly in sections with similar climatic conditions to the frost and drouth stricken areas, prompt action by each planter who is not now supplied with adapted seed, can prevent a seventy-five million bushel reduction in next year's crop.

Whether you can secure another victory next year depends largely upon your action now. Each and every planter for his own sake and for his country's sake, should have sufficient adapted seed corn set aside now or should get it without delay. To delay is to invite failure. The consequences are too serious to permit transportation problems, state lines, prices, or anything to delay the securing of suitable seed corn by all the unsupplied. Suitable seed is now available that will be used for other purposes than seed before next spring, unless each grower now secures and safeguards his planting needs. Do not depend on the other fellow. If you do, you and the country will quite certainly suffer loss. Unadapted seed may be available next spring but would prove costly at any price, whereas well adapted seed should prove profitable at many times its cost.

This appeal is made to you personally because upon you depends the success of next year's corn crop, which is threatened by a scarcity of well matured, locally adapted seed. The seed trade, county, state, and National workers, tho anxious, can help but little except as you make known your needs and your supplies, and you should act now as you would act if next week were corn planting time. — C. P. Hartley, Bureau of Plant Industry.

ONIONS IN SLOW DEMAND

The large onion markets failed to maintain the slightly improved tone of last week, but sagged back to about the previous level, with demand generally slow. The jobbing range of $2@2.75 quoted. in New York for Ohio, Indiana and New York yellow onions in 100-lb. sacks would cover the general range in most of the larger market centers. Shipments of onions for the week were 83 cars with no large volume from any section. For the year, California has doubled its onion shipments. New York, New Jersey and several other leading producers show moderate to large increase. Several states, however, advanced during the year from light to heavy shippers, as Minnesota, which showed well over 500 cars shipped, compared with 157 cars last year. Massachusetts, Ohio and Washington report a considerable decrease. On the whole the volume of onion shipments reported for the year was considerably more than double the figure for the preceding year.

ACREAGE OF TOMATOES UNDER CONTRACT BY CANNERIES IN 1917

From returns received from 1,679 firms and individuals, or about 88 percent of the total number in 1917, it appears that 896,277 tons of tomatoes were produced on the acreage reported, including 162,277 tons of tomatoes reported as bought outside of contracts, representing a total pack of 19,718,094 cases.

Details by States for 1917 follow:

	Acrerage harvested	Yield per acre
Arkansas	1,920	3.3
California	22,415	7.5
Colorado	1,305	11.8
Connecticut	149	3.0
Delaware	12,797	3.2
Illinois	3,719	3.3
Indiana	31,986	2.6
Iowa	2.076	2.5
Kentucky	1,939	2.7
Maryland	50,610	3.0
Michigan	3,478	1.3
Missouri	10,881	3.5
Nebraska	106	3.3
New Jersey	17,344	4.3
New York	9,166	2.5
North Carolina	118	3.0
Ohio	8,414	2.1
Oregon	126	8.0
Pennsylvania	1,982	2.4
Tennessee	3,116	3.0
Utah	3,118	9.0
Virginia	20,769	3.3
West Virginia	1,513	1.8
Wisconsin	290	3.8
All other	846	3.9
United States	210,183	3.3

The above report is based upon returns received from 1,679 firms and individuals engaged in canning or otherwise manufacturing tomatoes in 1917, out of a total of 1,900 firms, as near as may be, or about 88 percent of all firms so engaged. The 88 percent of firms reporting probably represents a much higher percent of the total acreage harvested. The acreage harvested was secured by deducting the percent of the acreage contracted for that was not planted, and the percent of the acreage planted that was abandoned from the total contract acreage reported.

FARM LOAN ASSOCIATION FOR MIDDLESEX COUNTY

The office of farm demonstration of Middlesex County, New Jersey, representing the extension division of the State Agricultural College, co-operated with the farmers of the county in organizing a farm loan association. A local association was formed some time ago, but this was recently reorganized to include the entire county under the name of "Middlesex County Farm Loan Association." Mr. S. W. Kitts, of New Brunswick, is president, and Mr. Fred Fitts Randolph, also of New Brunswick, is secretary-treasurer. Persons interested can obtain further information from either of these officers, or from Mr. Irving L. Owen, farm demonstrator, New Brunswick, N. J.

GOVERMENT WILL SELL YOUR WHEAT

Farmers and shippers of wheat unable to obtain satisfactory service from country dealers or commission men may utilize the Food Administration Grain Corporation. This agency is not desirous of undertaking to sell grain or to enter the field of the dealer, and offers its services as sales agent only to cure dissatisfaction and where fair treatment can not otherwise be obtained by farmers. In such cases where wheat is of carlot volume the Food Administration will find a market at a commission charge of 1 percent.

In cases of disagreement between farmers and local buyers or between country dealers and millers as to grade, the zone agent of the Food Administration is empowered to settle differences, and will render this service when a 2-pound sample is sent him for examination.

The zone agents of the Food Administration Grain Corporation are second-vice-presidents of the Corporation and serve without pay. Like other officials of the corporation, they have divorced themselves from the grain business for the time of the war.

The zone agents in this part of the country and their headquarters follow: H. D. Irwin, Philadelphia, Pa.; Chas. Kennedy, Buffalo, N. Y.; Geo. S. Jackson, Baltimore, Md.

ANNOUNCE CONTROLLED FEEDS

By proclamation of the President which takes effect February 15th, live stock and poultry feeds are placed under the supervision of the U. S. Food Administration in addition to bran, cottonseed products and other staple commodities already so controlled. Alphabetically arranged, the feeds covered by the new regulations are: Alfalfa, animal or fish products or by-products, baled alfalfa, baled hay, baled straw, barley, beans, broom corn, buckwheat, cane seed, copra, corn (ear), corn (shelled), dried brewers' grains, dried distillers' grains, dried yeast grains, emmer, feterita, grain and seed screenings, hay, kaffir, lentils, linseed oil cake, linseed oil meal, malt sprouts, millet, milo, oats, palm kernel, palm nut, peanuts, peas, rice, rye, sorghum grains, soy beans, spelt, straw, sugar beets, sugar cane, sunflower seeds, tankage, velvet beans, and wheat.

With specified exceptions, all persons, firms and associations importing, manufacturing, mixing, processing, storing or distributing these feeds are required to secure a license from the U. S. Food Administration and be subject to its regulations for the duration of the war. The exceptions include farmers, gardeners, co-operative associations of farmers and gardeners (including live stock farmers), common carriers, and retailers whose gross sales of food commodities do not exceed $100,000 annually.

ORDER FARM MACHINERY EARLY

The importance to farmers of early ordering of both new farm machines and repair parts for old ones can not be too greatly emphasized, according to officials of the United States Department of Agriculture. Because of the prevailing high prices for farm implements and repair parts, there is a natural tendency on the part of retail dealers to maintain a very meager stock in order to avoid finding themselves with a large supply of high-priced material on hand in case a decline in price should occur.

This situation makes it exceedingly important for farmers to place at the earliest possible date all orders for new machines and repair parts which may be needed during the coming season in order to insure having the machines in time for farm operations next season.

Numerous instances have already occurred where local dealers did not have a stock of repair parts on hand which were needed to meet requirements of farmers in the neighborhood and excessive delays were encountered in getting these parts from the factory.

FARM ANIMALS IN NEW JERSEY DECREASING

From the reports of correspondents to the New Jersey Department of Agriculture the number of farm animals was less on January 1, 1918 than on the same date last year. The comparison expressed in percentages is as follows:

Horses, 97; mules, 98; milk cows, 93; other cattle, 90; sheep, 93; swine, 94.

HARVEST ICE

The United States Food Administration advises creamery managers, farmers and dealers as follows:

You may not be able to buy ice next summer.

Unprecedented demands for ammonia by our Army and Navy combined, with transportation overloaded, indicate a shortage in this important chemical so widely used in producing ice and in refrigeration.

There is little opportunity to increase the output of ammonia, which is chiefly a product of gas-plants and by-product of coke-ovens; hence the necessity for conserving by every available means the normal supply.

A shortage of ice during warm weather of 1918 would result in untold waste of perishable foods in the home, in small creameries, and other establishments dependent on the constant ice service.

The surest means of avoiding an ice shortage is a large harvest of natural ice stored locally so as to make country establishments independent of the output of ice factories.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

LABOR AND PRODUCTION

You ask opinions on the two articles of "Farm Labor and Production"; one by Mr. Wall and the other by D. F. Houston. You ask "which is the more logical". It seems to me that any one with a grain of logic must decide in favor of Mr. Wall. Every item stated in Mr. Wall's article is correct, reasonable and justifiable. I honestly believe that the entire army of the U. S. could not enforce Mr. Houston's seven systematic rules, and if it could, it is doubtful whether his objective would be realized.

All that Mr. Houston accomplished in his statement is this: He fired seven blank cartridges at the farmers; he did not hurt them and he did not intend to. Mr. Wall fired but two shots and scored a hit both times. His cartridges were charged against profiteering and finance, these two paramount factors Mr. Houston does not touch in his seven belts. It seems Mr. Houston thinks that the farmer and his family will work 16 hours a day for little or nothing or for patriotism, and help make, without a grudge, about 10,000 millionaires every year by profiteering. Let Mr. Houston load up again and not forget finance, profiteering and fertilizers and he may score with the farmers.

Mr. Wall scored the truth when he said: "But all the while our sugar, grain, meat, milk, fruit, vegetables, eggs and poultry are made the basis of profiteering by thousands of men who should be engaged in some productive industry but who have grown rich and powerful by simply controling products that have required the thought and sweat and actual privation of millions of farmers and their wives and children to plant and grow and harvest and send to market." He scored his second hit when he said: "Give him the position of financial assurance that he needs—sure that he will get as good a return for labor and investment as his brother American gets at other business, and he will feed the world and do it easily."

An old adage says: Money makes the mare go! In the present situation, money makes the farmers go! Without money the farmer is as helpless as a bird without wings, no matter how patriotic he may be. Let the farmers load Mr. Houston's seven empty shells with the following queries:

1 Why is the government so niggardly with the farmers and not with the manufacturers?

2. Why does the government make the price of a bushel of wheat and not the price of a pair of shoes, or any other manufactured article?

3. Why does the government take over the railroads and guarantee their stockholders a dividend on watered stock and a free ride into some other profiteering scheme?

4. Why does the government not take over the farms and guarantee the farmers a dividend on real stock and give the farmers an equal chance with the stockholders of the railroads at something else?

5. Why does the government guarantee the stockholders of railroads a dividend and does not guarantee the farmers a fair margin of profit on their investment?

6. Why does the government guarantee the manufacturers a fair margin of profit and not the farmers?

7. Why is it that the farmer gets only $2.25 for a bushel of good wheat and the manufacturer gets $15 for a pair of poor shoes?—Josiah A. Christ, Schuylkill Co., Pa.

FARM LABOR EXEMPTION

We are coming more and more to respect and admire T. L. Wall. His timely suggestions indicate a breadth of view and a grasp of present-day problems that render him of inestimable value to his brother farmers. His article in the January 12 issue of Pennsylvania Farmer is exactly to the point and depicts conditions as they actually exist—not as the officials in their cozy Washington offices imagine they may be or should be. One point, however, suggested by Secretary Houston is of prime importance, viz: "Steps to see that any able-bodied men who are not doing a full and useful day's work, shall be fully and regularly employed." When the thousands in the non-laboring classes—men who "never work and never intend to"—are placed in factories and made to produce their just proportion of the world's necessities, many of the perplexing labor problems will adjust themselves.

This is no time for criticism, but neither is it a time to overlook positively dangerous phases of the political situation; and if the government were deliberately trying to form a policy that would lose the war thru the crippling of the nation's agricultural resources, no better plan could be devised than the present policy of disregarding the agricultural claims of draft registrants. The more we observe the working of this policy, the more firmly we are convinced that somewhere "behind the scenes" must be a modern Judas exerting a powerful pro-German influence tending steadily and relentlessly toward the destruction of the farming communities and the ultimate loss of the conflict which must be the inevitable result.

If our food supply can be cut off at its source, how can we expect to win? A lawyer who was filing some of the very last questionnaires is authority for the statement that not one claim for deferred classification on agricultural grounds had been allowed, to his knowledge. Germany can be depended upon to avoid any such short-sighted system and we must do the same if we hope to compete successfully with her. If we were short of ammunition, would the skilled workers who never had done anything else, be drafted from these factories to be trained for second quality soldiers? Never. Why, then, do the same with the skilled food producers, at a time when we are already short of food?—E. M. Anderson, New York.

That wet piece of land that yielded only trouble this year could produce a good crop in 1918—if it had tile drains under it.

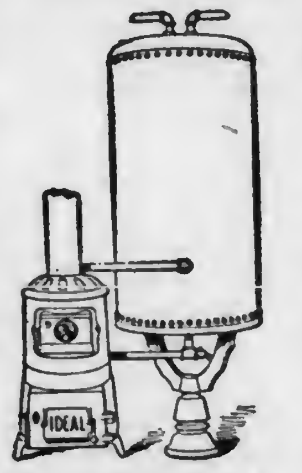
Save on coal bills with IDEAL heating

The old folks who have suffered the ills and bills of old-fashioned heating methods, are glad to give their approval to the economy, safety and comfort of IDEAL heating

The best recommendation we can give as to the success and satisfaction of IDEAL heating is from the old folks on the farm. They require the most *dependable* heat. IDEAL heating suits them exactly, it is sure and safe, warm in the morning and all day and mild at night. It is easily regulated to the weather, eliminates drafts and chill spots in the house—easy to take care of—most cleanly heat there is—no coal gas or ash dust, no repairs or over-hauling necessary.

AMERICAN RADIATORS & IDEAL BOILERS

IDEAL heating can be put in any farm cottage or house as a cellar or water pressure system is not necessary, and IDEAL Boilers and AMERICAN Radiators are made in every size to fit requirements.



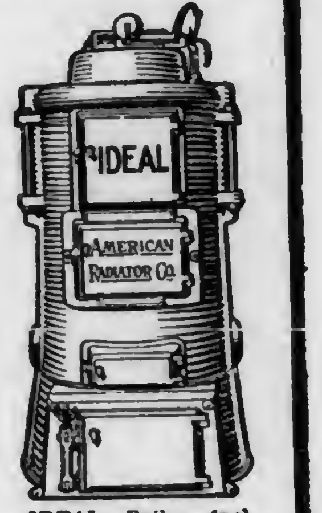
Our IDEAL Hot Water Supply Boilers will supply plenty of warm water for home and stock at small cost of few dollars for fuel for season.

IDEAL heating means big fuel savings

Careful and scientific burning of the low-priced fuel of your locality produce saving dividends which soon repay first cost. IDEAL Boilers are the greatest heat producers and fuel savers known. Thousands of farm houses equipped with them.

Get copy of valuable heating book free

We will gladly send you a copy of our illustrated and interesting book, "Ideal Heating," which we want you to read carefully. Write for it today—no obligation to buy.



IDEAL Boiler fuel pots mix the air and coal gases as in a modern gas mantle, extracting ALL the heat from the fuel.

Sold by all dealers. No exclusive agents AMERICAN RADIATOR COMPANY Write to Department F-30 Chicago

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof, sanitary and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 141 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

LET US TAN YOUR HIDE.

Horse or Cow hide, Calf or other skins with hair or fur on, and make them into coats (for men and women), robes, rugs or gloves when so ordered. Your fur goods will cost you less than to buy them and be worth more.

Our illustrated catalog gives a lot of information. It tells how to take off and care for hides; how and when we pay the freight both ways; about our safe dyeing process on cow and horse hide, calf and other skins, about the fur goods and game trophies we sell, taxidermy, etc.

Then we have recently got out another we call our Fashion book, wholly devoted to fashion plates of muffs, neckwear and other fine fur garments, with prices; also fur garments remodeled and repaired.

You can have either book by sending your correct address naming which, or both books if you need both. Address

The Crosby Frisian Fur Company, 571 Lyell Ave., Rochester, N. Y.

Plenty of Water for the Home

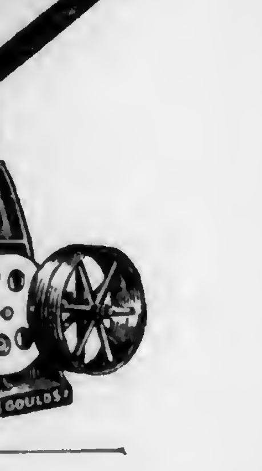
See that your family enjoys the same comfort afforded to your stock—an abundance of pure fresh water at all times. You can easily install a water system in your home and barns and have plenty of water with one of

GOULDS PUMPS FOR EVERY SERVICE

Over 300 types—all rigidly tested and guaranteed to do the work for which recommended. Write today for our free book, "Pumps for Every Service." Address Dept. 36.

The Goulds Mfg. Co. *Main Office & Wks:* Seneca Falls, N. Y.

Send today for this book.



Goulds Fig. 1454 Deep Well Working Head for air pressure or elevated tank water systems

20 MULE TEAM BORAX POWDERED FOR HOUSEHOLD USE PACIFIC COAST BORAX CO.

Let Borax
Do the *Hard* Work

DON'T rub and scrub and scrape to keep your home clean and wholesome. You, too, can get through your housekeeping duties quickly and easily as thousands of other women do by a generous use of

20 MULE TEAM BORAX

It takes the dirt off floors, walls and woodwork without scrubbing. Makes short work of greasy dishes and silver. Keeps pots and pans spic and span and imparts a wonderful lustre to glassware. And it sterilizes as it cleans. 20 Mule Team Borax is endorsed by all health authorities. Used wherever hygienic cleanliness must be maintained.

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Send for "Magic Crystal" Booklet. It describes 100 household uses for 20 Mule Team Borax.

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Paints, Stains, Varnishes.
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Ask your dealer for our free instructive booklet "Paint Pointers" or write us.

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A splendid baker Economical in operation. Has detachable hearth and large properly shaped firebox with powerful waterback. Duplex grates. Can also be furnished with basket grate in all sizes. Flue types reservoir. Adapted to hard or soft coal, wood or crushed coke. A range that will stand up under continual use. Before buying any range ask your dealer to show and explain to you all the economical devices of this Home Wincroft Ranges It will pay you to do so. Our descriptive booklet showing this and many other types—Free on request.

Wincroft Stove Wks., Middletown, Pa.

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DePUY'S SEEDS ARE FIRST AID TO GOOD CROPS
And Prices Reasonable.
OVER 400%

Increase in sales in two years, is proof that our VALUES ARE APPRECIATED. A post card will bring our 1918 SEED BOOK.

Don't buy SEED CORN, OATS, BARLEY, BEANS or PEAS, CLOVER, GRASS or other FARM and GARDEN SEEDS, 'till you have seen it.

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COFFEE
From Wholesaler Direct, fresh off the Roaster
5 POUNDS FOR Bean or Ground $1.25
DELIVERED FREE WITHIN 300 MILES
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Satisfaction Guaranteed or Money Refunded
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ESTABLISHED 77 YEARS

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$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here.

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125,000 now in use

ALBAUGH-DOVER CO., 2107 Marshall Blvd., CHICAGO

The Home Sewing—III

By M. JANE NEWCOMB,

Home Economy Department, Pennsylvania State College

Copyright by M. Jane Newcomb.

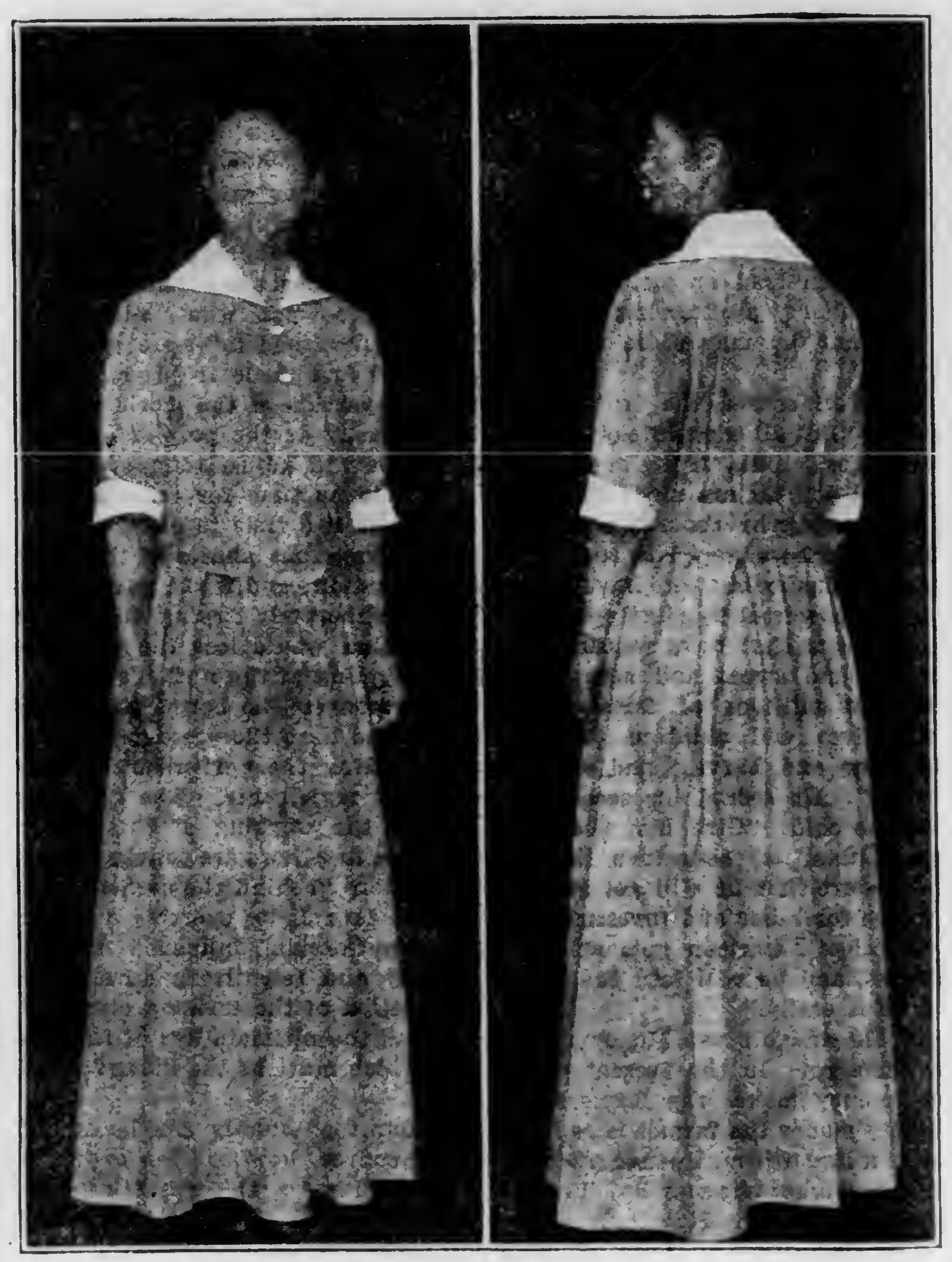
Article I of this series, published Jan. 12, explained how to take measures for adjusting patterns to individual needs. Article II in Jan. 19 issue explained such adjustment of patterns. The article this week deals with:

Use of Adjusted Waist Pattern

After the waist pattern has been carefully adjusted to the figure and is ready to use, there are many ways in which it can be used in addition to its use in the making of a waist.

For Underwear

The accompanying charts show how the pattern may be used for a corset cover, a nightgown or a one-piece housedress. This does away with an accumulation of patterns, and assures a good fit in all the garments made, because the waist pattern has been so carefully fitted to the individual.



House Dress Developed From Waist Pattern

To Develop Corset Cover from Shirtwaist Pattern (Fig. 1.)

The Front.—Using the fitted shirtwaist pattern as a basis, allow two inches more fullness on each front (Fig. 1—front), letting the front line run thru EF instead of ARG. To get the low neck desired for corset cover, from R (four inches below A at the shirtwaist neck) cut out the neck from R to S; from I to S should be one-third of the shoulder line.

The Back.—From A to R (Fig. 1—back) should measure four inches to get the depth of neck in back. And I to S should be one-third of the fronts. Thus, S to R will make the neck curve on the back of the corset cover. By laying the front pattern with the front edge, EF, on a fold of the goods, and the back pattern with edge ARG on a fold, one cuts both fronts and the back at once. And since the pattern is a perfect fit, it will go together and finish without any fitting, unless to adjust gathers at waist line in front.

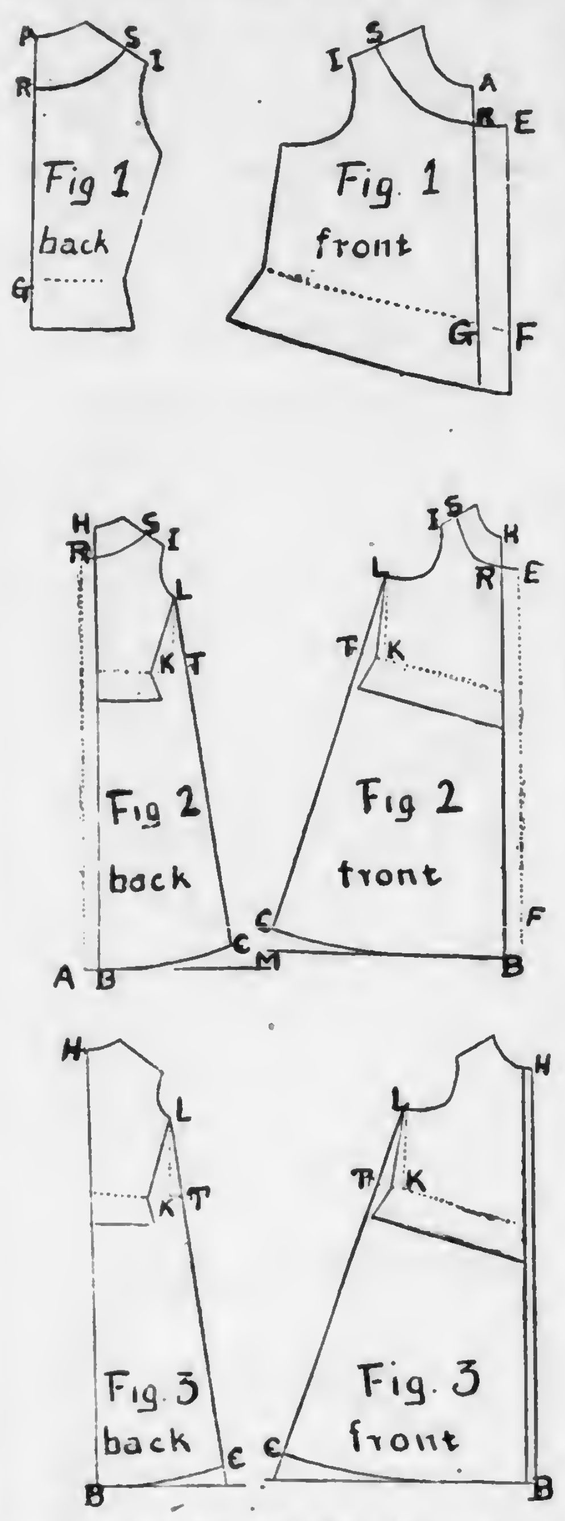
To Make Nightgown From Waist Pattern (Fig. 2.)

The Front.—Set edge E (Fig. 2—front) as much beyond edge HB of waist pattern as you desire your nightgown to be fuller than the waist. Make the nightgown as long as needed, getting the length by keeping EF always parallel with HB. Then, from L drop the line LK to the waistline parallel with EF. Now from K draw line KT three inches back at right angles with LK. Then thru T cut LTC, which will give you the proper swing to get the right fullness at the bottom of your nightgown. Point C, which represents the bottom of the underarm seam, should be up a few inches from the line BM in order to give the proper curve, BC, so that the sides of the garment will not hang longer than the front and back. Cut the neck as high or low as desired, adapting the instructions given for cutting the corset cover neck.

The Back.—(Fig. 2—back). Line RA will be a few inches outside of line HB on original waist pattern, in order to afford needed fullness for nightgown back. The line LK must be drawn to waist line parallel with HB Then mark T two inches beyond K in a line at right angle with LK; now cut the line LTC for the underarm edge.

To Make House Dress from Waist Pattern (Fig. 3.)

The Front.—The line HB should be just a little outside of the waist pattern front edge and, of course, parallel with it all the way down. Then trace LK to waist line parallel with HB; put T three inches beyond K, in a line at right angles with LK, and run LTC down for the underarm edge



Charts for Pattern Adjusting

The Back —Extend the back edge of the waist pattern to B for the length of back. Draw LK to waist line, parallel with HB, then get T by measuring two inches out on line at right angles with LK, and draw LTC for underarm edge of back.

Put together and finish with belt and collar and cuffs as shown in the photo, and you have a neat, quickly donned and easily laundered workdress. The belt is stitched to the dress under the arms, hence is always there. You may put pockets or any other trimming on it which you desire, or make any change so long as you alter the fundamental lines exactly in accordance with the instructions given. (Copyright, 1917, by M. Jane Newcomb)

A HANDY WINDOW SHELF

Absolutely the handiest thing in a friend's kitchen is a broad, strong shelf before a double window. Next to the window this shelf carries a full row of blooming plants, but it extends 18 inches or more beyond the needs of the plants. Hence, besides being a perfectly safe plant-stand, it makes an ideal window seat, or a very convenient place for the necessary accessories of one's sewing or other work. Having excellent light, drawing up a comfortable sewing rocker converts this spot into a most delightful sewing room. Papers and magazines in rack at one end are good rest-a-minute invitations. This shelf really contributes nearly as much real efficiency as a kitchen cabinet. — Mrs. E. M. Anderson, Chautauqua Co., N. Y.

Cranberry Tarts.—Wash, dry and prick 1 cup cranberries (unless cranberries are dried there will be too much liquid); cook berries with 1 cup white corn syrup into which 1 teaspoon of cornstarch has been stirred; when fruit is cold, fill tart shells. Vary this by using half raisins and half cranberries.

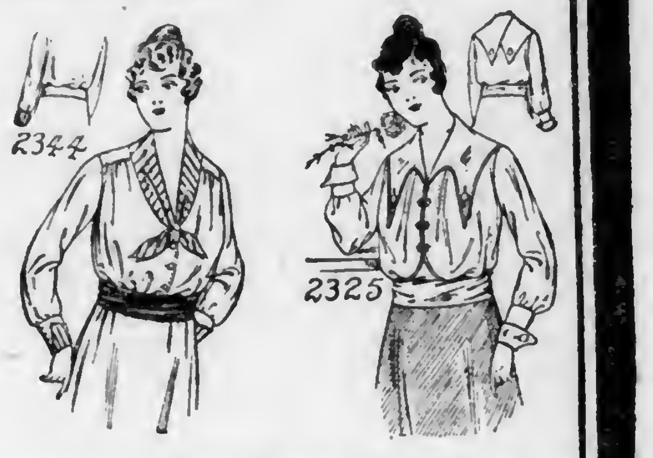
Apple Tarts. — Make an apple sauce, using white syrup instead of sugar; fill shells; sprinkle top with chopped nuts; place a square of currant jelly in center of each.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

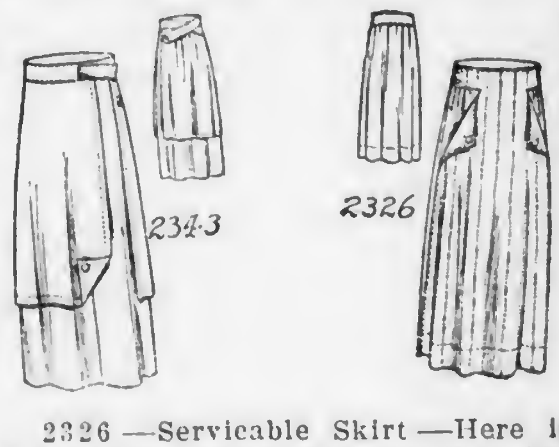
Frocks for Women

2344.—Attractive Waist. — The back extends over the shoulders in yoke effect, and joins the fronts in gathered fulness. The cuff may be closed with snap fasteners, and trimmed with fancy buttons. Pattern is in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 3¾ yards of 36-inch material. Price, 10 cents.



2325.—Pretty New Shirt Waist.—The fronts are faced in shaped outline. The collar is new and the sleeve is attractive. Pattern is in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 3¼ yards of 36-inch material. Price, 10 cents.

2343.—Skirt with Tunic. — The skirt has four gores, over which the tunic sections are draped. Pattern is in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Size 24 requires 4⅝ yards of 44-inch material. The skirt measures about 1⅞ yards at its lower edge. Price, 10 cents.



2326 —Servicable Skirt —Here is a practical design, with smart pocket sections and belt portions. The sides and back are gathered under the belt Pattern is in 6 sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. Size 24 requires 3½ yards of 36-inch material. The skirt measures about 2 yards at the foot. Price, 10 cents.

Pastry? Of Course!

PILLSBURY'S BEST XXXX

Why Use A Special Flour For Pastry?

You don't need a "special" flour for pastry. Pillsbury's Best makes good pastry as well as good bread. Try this Pillsbury recipe for pie crust:

1 cup Pillsbury's Best Flour.
(use ⅓ Pillsbury's Barley or Pillsbury's Pure Rye Flour if desired)
3 level tablespoons shortening
½ teaspoon baking powder
½ teaspoon salt.
Enough ICE-COLD water to make a soft paste.

Mix with a knife in the usual manner.

This recipe makes the finest, crispest pie crust imaginable. Not the leathery kind that bends under your fork like a sheet of rubber, but the light, flakey kind that crumbles into tender fragments at the slightest touch.

To make pie crust like this with Pillsbury's Best requires no special skill. Just remember to use lots of cold water, (ice-cold if possible) and to mix the paste as soft as can be easily handled. With these precautions you can use your own recipe with equally good results.

If you are already making good pastry, you can make better pastry with Pillsbury's Best. If folks knew what delicious pie crust they could make with this all-purpose flour, they would say good-bye to "special pastry" flours forever.

The Flour Question Settled
Because
Pillsbury's Best

Pillsbury Flour Mills Company, Minneapolis, Minn.

This is the Kind of Horse the Government Wants

No horse with a Spavin, Splint, Ringbone, Curb, Bony Growth, Capped Hock, Wind Puff, Strained Tendon or Sweeny can now pass the keen-eyed Inspectors of the Government Remount Stations.

Splendid-looking horses—otherwise sound—are being turned down because of some blemish that could be quickly cured with

Gombault's Caustic Balsam

GOMBAULT'S
CAUSTIC BALSAM
J. E. GOMBAULT
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Here is your chance to make money for yourself and at the same time help in the Government's great Thrift and Production movement.

Put your horse into condition with **Gombault's Caustic Balsam.** A safe and reliable remedy.

Gombault's Caustic Balsam if applied immediately after burns, bruises or cuts, is a perfect ant septic—soothing and healing. An absolutely safe external remedy for man or beast.

Every bottle of **Caustic Balsam** sold will surely give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by parcel post with full directions for its use. Send for descriptive circulars, testimonials, etc.

The Lawrence-Williams Co., Cleveland, Ohio

IRONCLAD KHAKI

(Twill Cloth)

Uncle Sam's Boys and Girls both wear garments of

Ironclad Khaki

the patriotic economy cloth. It's fast sulphur dyed—can't fade and wears like leather.

Be sure the Ironclad "army" label is sewed in every khaki work shirt, pants and overalls you buy.

Garments on sale by dealers—everywhere

Write for free samples of Ironclad Khaki Cloth and Miss Ironclad Khaki Cloth to

FRANKLIN MANUFACTURING CO.
Manufacturers of Cloth Only
123 Market Place, Baltimore, Md.

That One Mule

or horse, can harrow and cultivate just as thoroughly as the 3-horse team if you save the right tools. Hitch him to the

"Acme" Pulverizing Harrow

Models "G" and "H" are especially designed to do good work with only one horse or mule. The keen coulters slice, pulverize and turn the soil twice in one operation. Make a deep, smooth firm seed bed. Succeed on all soils. Sizes, 1-horse to 4-horse. Send today for free book, "The Acme Way to Crops That Pay."

Duane H. Nash Inc.

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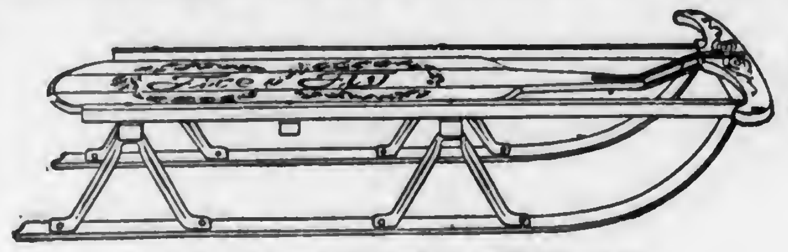
Size "H" 1-horse cultivator. Cuts 4 ft. 4 in. wide

Boys Don't You Want a Sled



A Fire Fly Coaster

Length, 32 in.; Height, 6 in.; Width, 11 in.

will be given as a reward to any boy or girl for securing three subscriptions to Pennsylvania Farmer for one year at 75 cents each or for 10 trial subscriptions for four months at 20 cents each.

START OUT AT ONCE

soliciting subscriptions among your neighbors before some other boys beat you to it. You can secure enough subscriptions to earn a sled in a couple of evenings after school. Send in the subscriptions together with the money collected and we will send you a Genuine Fire Fly Coaster by prepaid post.

Pennsylvania Farmer, 261 S. 3rd St., Phila., Pa.

Grange

AN APPEAL FOR AGRICULTURAL POLICY

An appeal to President Wilson to speed up governmental machinery in aid of production in such manner as to relieve the anxiety of farmers as to labor supply, credit facilities, seed shortage, and other vital questions was made January 22 when the Federal Board of Farm Organizations presented a memorial to him in behalf of more than 2,000,000 organized farmers. The board asked consideration of its memorial by the President and a reply to be given when farm leaders of America assemble in Washington on February 6. The memorial slightly condensed follows:

The President: The Federal Board of Farm Organizations respectfully calls your attention to a grave national danger.

We know that the world is short of food. The crops now available are barely sufficient to meet the urgent need, and next year the world shortage is certain to be worse. Insufficient food supplies involve a most serious threat to the early and victorious conclusion of the war, for a starving people can not fight. The conditions which prevent increased production are national conditions, and only the National Government can remove them. It is the duty of the nation to give the farmer a fair chance to succeed in raising the food the nation needs, just as it is the duty of the farmer on his part to leave no furrow unturned.

Chief Causes of Anxiety

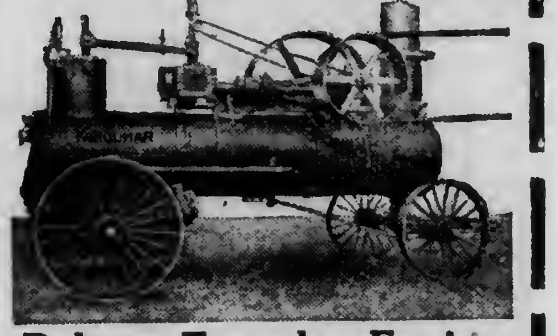
The chief causes which will inevitably bring about a smaller crop next year, unless promptly removed by National action, are six in number: The shortage of farm labor; shortage of seed; prices often below the cost of production; lack of reasonable credit; exclusion of the farmer from his right and necessary share in the conduct of the war; and deep-seated doubt whether he can raise the increased crops demanded of him and still support his family and pay his debts.

Draining Away of Farm Labor

Since the war began in 1914 and before the first draft was made, there is reason to believe that more farm workers had left the farms than there are men in our Army and Navy together. These men were drawn away by the high wages paid in munition plants and other war industries, and their places remain unfilled. In spite of the new classification, future drafts will still further reduce the farm labor supply.

Crops greater than those of last year can not be grown with less farm labor than we had before the war began. Neither can the present shortage in farm hands be made up by inexperienced boys from the high schools or laborers from the towns, as recent experience abundantly proves. Good farm hands are highly skilled and intelligent workmen, in great demand at high wages for numerous occupations. Many thousands of acres were left unharvested last fall because the necessary hands had left the farms. Sustained or increased production is impossible without enough skilled farm labor to grow the crops we need.

FARQUHAR



Belt to a Farquhar Engine

The Farquhar Locomotive Rig is the ideal general farm engine. For saw mill work we offer the celebrated Cornish wood burner. Both these outfits are convenient to move and extremely simple to operate. All parts are mechanically proportioned, accurately machined and fitted, thus insuring steady, dependable power with minimum fuel consumption.

We also manufacture a full line of Steam Farm Tractors. Catalog describing the complete Farquhar line of Engines and Boilers, sent free on request. These machines are the direct result of our sixty years manufacturing progress. Write today and profit by our experience.

A. B. FARQUHAR CO., Limited
Box 446 York, Penna.

Other Farquhar Products are: Gas Tractors and Portables, Saw Mills, Threshers, Potato Diggers, Grain Drills, Cultivators, Hydraulic Presses.

Lime Your Soil With

Peerless Brand Hydrated Lime

Sweeten the sour soil. Release fertility already in the ground and available when "Peerless Brand" is applied.

Order early to insure supply when YOU want it.

Write us for prices or further particulars.

Address Lime Dept.

Reading Chemical Company
25 N. 6th Street, READING, PA.

WHY NOT UTILIZE YOUR SPARE TIME

during the Winter months, when you possibly hav some leisure moments on your hands, and sell our Fertilizers in your locality?

A large, pleasant and profitable business can be worked up with a small effort on your part.

We will assist you, if you wish, not only by undertaking an advertising campaign, but also by sending one of our representatives to help you.

Write us promptly before your territory is taken.

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WOOLDRIDGE'S CROP GROWERS FERTILIZERS LAND IMPROVERS HIGH CLASS

MORE MONEY

for tenant more money for owner, in our Active Fertilizers.

Just ask us for new booklet. **Agents wanted.**

The R. A. WOOLDRIDGE CO.
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SUBSIDIARY OF THE AMERICAN AGRICULTURAL CHEMICAL CO.

Rider Agents Wanted

Everywhere to ride and exhibit the new **Ranger "Motorbike"** completely equipped with electric light and horn, carrier, stand, tool tank, coaster-brake, mud guards and anti-skid tires. **Choice of 44 other styles,** colors and sizes in the famous **"Ranger"** line of bicycles.

DELIVERED FREE on approval and **30 DAYS TRIAL.** Send for big **free** catalog and particulars of our *Factory-direct-to-Rider* marvelous offers and terms.

TIRES Lamps, Horns, Wheels, Sundries, and parts for all bicycles—at half usual prices. **SEND NO MONEY** but tell us exactly what you need. Do not buy until you get our prices, terms and the big FREE catalog.

MEAD CYCLE COMPANY Dept. P-78 CHICAGO

MAKE YOUR BIKE A MOTORCYCLE

at a small cost by using our Attachable outfit. FITS ANY BICYCLE. Easily attached. No special tools required. Write today for bargain list and free book **FREE BOOK** describing the SHAW Bicycle Motor Attachment. Motorcycles, all makes, new and second-hand, $35 and up.

SHAW MANUFACTURING CO.
Dept. 22C, Galesburg, Kansas.

365 Acre Farm in Buckingham Co., Va., 200 acres tillable. Ready to plant apple trees. 80 acre acorn orchard, fenced for hogs. $6,500 (half cash). 200 acres Central New York, $4000; 130 acres Connecticut, $3500; other smaller farms. HARRY VAIL, Owner. WARWICK, N. Y.

The farmer does not realize large returns. However burdensome the price charged by the distributor to the consumer what the farmer realizes is often below the cost of production. But he must get living prices for what he grows or abandon the farm. Whether he will or not what the farmer will plant next season is decided mainly by the price of what he harvested last year. Already great numbers of farms near excellent markets lie idle for lack of a living return. Sustained or increased production is impossible without the assurance of fair prices for farm products at least for the coming year.

Credit Improvement Demanded

Interest rates to farmers for short time loans should not be higher, nor conditions harder, than are customary for other borrowers of like responsibility. Millions of acres will be wholly or partly idle next summer because the money to buy seed and subsistence will be lacking. Many of the farmers thus affected are tenants whom misfortune will compel to abandon the farm. The loans of the Federal Farm Loan Banks are made for long periods and do not meet the immediate need of the farmers in raising crops, while we understand that the Federal Reserve Banks have taken steps which make it still harder for the farmers to get short-time credit. Sustained or increased production is impossible without reasonable short-time credit on fair and practicable terms.

Share in Responsibility of Winning the War

It is unwise to deny one-third of the people of the United States any real part in handling the problems of the war. So far as we have learned there is not a single genuine farmer or representative of the organized farmers of America, in any position of authority in the Food Administration, the Advisory Council or National Defense, or any of the other special boards charged with the conduct of the war. When contrasted with the recognition properly accorded to organized labor and the vast responsibilities entrusted to the representatives of organized business, such treatment amounts to notice to the organized farmers that their partnership is not desired. Sustained or increased production is impossible unless the organized farmers of America are given a voice in the conduct of the war commensurate with the importance of their part in winning it.

Confidence Must Be Restored

The farmers of America answered with high patriotism the appeal of the Government to raise larger crops in 1917. At a heavy cost in outlay and in labor they added largely to their production. But in far too many cases the lack of hands at harvest, with other causes, robbed the farmers of the fruits of their labor, and the losses which followed hit them hard. With an average yearly cash income of but little more than $400 beyond expenses, at the last census, they are naturally unwilling to repeat the same experience in the coming year. They have lost confidence that the Government understands the needs and difficulties of the farmer. Unless that confidence can be restored, it is useless to hope that we can maintain the food production of last year, and meaningless to talk of increasing it. It is imperative to give convincing assurance that it will be made possible for American farmers to raise the food without which we can not win the war.

We are face to face with the calamity of a smaller crop next year, unless the impediments we have set forth can be removed. If that be done, and done promptly, we believe that it is still possible to secure increased production from the farms of America at the coming harvest.

PATENT MEDICINE LABELS

Ten years ago there was no ailment to which human flesh is heir that some maker of patent medicines did not claim to be able to cure with such ease that it seemed almost the height of foolishness not to part with the price for his nostrums.

Today, because of the operation of the Federal Food and Drugs Act, the extravagant promises of cure that characterized the labeling of the patent medicines of ten years ago have practically disappeared from the preparations that enter interstate commerce. They may, however, still be found in newspaper and other advertisements that are not subject to the act. The "pure food law", as it is known, is concerned only with the package as it is shipped in interstate commerce. If one questions the truth of a newspaper advertisement of a patent medicine let him read the label on the carton or bottle at the corner drug store. The latter will come nearer telling the truth about the medicine.

Misbrandings, in regard to healing value of hundreds of alleged cancer cures, so-called "cures" for coughs, colds, consumption, kidney diseases, epilepsy, St. Vitus dance, and the like, have been corrected. This is told in the annual report of the Bureau of Chemistry, United States Department of Agriculture, which reviews the operation of the Food and Drugs Act in the safeguarding of the health of the American people.

The law requires the labels of patent medicines to declare the presence of any habit-forming drug, such as opium, cocaine, or alcohol, thus preventing the innocent development of the drug habit. This provision of the law is particularly valuable in warning mothers against the use of so-called infant soothing syrups containing opium.

When the act went into effect, drug addiction was so prevalent that frauds in the treatment of the victims were frequent and in most instances the remedy advertised so forcefully by the labels contained the very drug from which escape was desired.

In 1907, the Bureau of Chemistry found that 30 soft drinks contained small amounts of cocaine. Practically all of these were suppressed. The Food and Drugs Act is regarded as having been an important factor in bringing about passage of the Harrison Anti-Narcotic law, which more effectively controls habit-forming narcotics.

Much has been done, the report says, to control the indiscriminate use of so-called headache remedies containing dangerous, depressing drugs, and of dangerous cosmetics making claim to healing value; and in raising the quality of the supply of crude drugs thru the examination of imports. As a result of co-operative work with the Post Office Department, a number of fraud orders were issued by that department preventing the use of the mails in promoting the sale of fraudulent medicines.

AA AA

HELP *the* HELP

The Year Book of the Department of Agriculture contains this statement: "There is no question of the general value of commercial fertilizers in farm practice. The farmer who wisely and systematically applies commercial fertilizer to his fields will raise larger and better crops than his neighbor who, with similar conditions of soil, climate and rotations, and equal industry applied to cultivation, does not use fertilizers."

This is another way of saying that a day's labor on fertilized land will produce more than a day's labor on unfertilized land; and that for this reason fertilizer is a good weapon against the high cost of labor. The hired man is costing you more. Make him produce more by putting him to work on well-fertilized land.

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NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

CHAPTER XXVII

El Capitan

It was already well after midnight. A favoring spot was seized on by de Spain for the resting-place he wanted. A dry recess beneath an over-hanging wall made a shelter for the fire that he insisted on building to warm Nan in her soaked clothing. He found cedar roots in the dark and soon had a blaze going. It was dangerous, both realized, to start a fire, but they concealed the blaze as best they could and took the chance—a chance that more nearly than any that had gone before, cost them their lives. But what still lay ahead of the two justified in de Spain's mind what he was doing. He acted deliberately in risking the exposure of their position to unfriendly eyes far distant.

The mutterings above the mountains now grew rapidly louder and while the two hovered over the fire, a thunder-squall, rolling wildly down the eastern slope, burst over the Gap. Its sudden fury put aside for a time all question of moving, and Nan's face took on a grave expression as she looked in the firelight at her companion, thinking of how far such a storm might imperil their situation, how far cut off their already narrow chance of escape.

De Spain—reclining close beside her, looking into the depths of her eyes as the flickering blaze revealed them, drying himself in their warmth and light, eating and drinking of their presence on the mountainside alone with him, and pledged to him, his protection, and his fortunes against the world—apparently thought of nothing beyond the satisfaction of the moment. The wind drove the storm against the west side of the huge granite peak under which they were sheltered and gave them no present trouble in their slender recess. But Nan knew even better than her companion the fickle fury of a range storm, and understood uncomfortably well how a sudden shift might, at any moment, lay their entire path open to its fierceness. She warned de Spain they must be moving, and, freshened by the brief rest, they set out toward El Capitan.

Their trail lay along granite levels of comparatively good going and, fleeing from the squall, they had covered more than half the distance that separated them from the cliff, when a rush in from the desert, burst above their heads. Drenched with rain, they were forced to draw back under a projecting rock. In another moment the two storms meeting in the Gap, crashed together. Bolt upon bolt of lightning split the falling sheets of water, and thunder, exploding in their faces, stunned and deafened them.

Mountain peaks, played on by the wild light, leaped like spectres out of the black, and granite crags, searched by blazing shafts, printed themselves in ghostly flames on the retina; thunder, searching unnumbered gorges, echoed beneath the sharper crashes in one long, unending roll, and far out beyond the mountains the flooded desert tossed on a dancing screen into the glare, rippled like a madcap sea, and flashed in countless sheets of blinding facets. As if an unseen hand had touched a thousand granite springs above the Gap, every slender crevice spouted a stream that shot foaming out from the mountainsides. The sound of moving waters rose in a dull, vast roar, broken by the unseen boom of distant falls, launching huge masses of water into caverns far below. The storm-laden wind tore and swirled among the crowded peaks, and above all the angry sky moaned and quivered in the rage of the elements.

Nan leaned within de Spain's arm. "If this keeps up," he said after some time, "our best play is to give up crossing tonight. We might hide somewhere on the mountain tomorrow, and try it toward evening."

"Yes, if we have to," she answered. But he perceived her reluctant assent. "What I am afraid of, Henry, is, if they were to find us. You know what I mean."

"Then we won't hide," he replied. "The minute we get the chance we will run for it. This is too fierce to last long."

"Oh, but its November!" Nan reminded him apprehensively. "Its winter; that's what makes it so cold. You never can tell in November."

"It won't last all night, anyway," he answered with confidence.

Despite his assurance, however, it did last all night, and it was only the lulls between the sharp squalls that enabled them to cover the trail before daylight. When they paused before El Capitan the fury of the night seemed largely to have exhausted itself, but the overcharged air hung above the mountains, trembling and moaning like a bruised and stricken thing. Lightning, playing across the inky heavens, blazed in constant sheets from end to end of the horizon. Its quivering glare turned the wild night into a kind of ghastly, uncertain day. Thunder, hoarse with invective, and hurled mercilessly back and forth by the fitful wind, drew farther and farther into the recess of the mountains, only to launch its anger against its own imprisoned echoes. Under it all the two refugees, high on the mountainside, looked down on the flooding Gap.

Their flight was almost ended. Only the sheer cliff ahead blocked their descent to the aspen grove. De Spain himself had already crossed El Capitan once, and he had done it at night—but it was not, he was compelled to remind himself, on a night like this. It seemed now a madman's venture and, without letting himself appear to do so, he watched Nan's face as the lightning played over it, to read if he could, unsuspected, whether she still had courage for the undertaking. She regarded him so collectedly, whether answering a question or asking one, that he marvelled at her strength and purpose.

Hardly a moment passed after they had started until the eastern sky lightened before the retreating storm, and with the first glimmer of daylight, the two were at the beginning of the narrow foothold which lay for half a mile between them and safety.

Here the El Capitan trail follows the face of the almost vertical wall which, rising two thousand feet in the air, fronts the gateway of Morgan's Gap.

They started forward, de Spain ahead. There was nothing now to hurry them unduly, and everything to invite caution. The footholds were slippery, rivulets still crossed the uncertain path, and fragments of rock that had washed down on the trail, made almost every step a new hazard. The face of El Capitan presents, midway, a sharp convex. Just where it is thrown forward in this keen angle, the trail runs out almost to a knife-edge, and the mountain is so nearly vertical that it appears to overhang the floor of the valley.

They made half the stretch of this angle with hardly a misstep, but the advance for a part of the way was a climb, and de Spain, turning once to speak to Nan, asked her for her rifle, that he might carry it with his own. What their story might have been had she given it to him, none can tell. But Nan, holding back, refused to let him relieve her. The dreaded angle which had haunted de Spain all night was safely turned on hands and knees and, as they rounded it toward the east, clouds scudding over the open desert broke and shot the light of dawn against the beetling arete.

De Spain turned in some relief to point to the coming day. As he did so a gust of wind, sweeping against the sheer wall, caught him off his guard. He regained his balance, but a stone, slipping underfoot, tipped him sidewise, and he threw himself on his knees to avoid the dizzy edge. As he fell forward he threw up his hand to save his hat, and in doing so released his rifle, which lay under his hand on the rock. Before he could recover it the rifle slipped from reach. In the next instant he heard it bouncing from rock to rock, five hundred feet below.

Greatly annoyed and humiliated, he regained his feet and spoke with a laugh to reassure Nan. Just as she answered not to worry, a little singing scream struck their ears; something splashed suddenly close at hand against the rock wall; chips scattered between them. From below, the sound of a rifle report cracked against the face of the cliff. They were s startled, so completely amazed, that they stood motionless. De Spain looked down and over the uneven floor of the Gap. The ranch-houses, spread like tops in the long perspective, lay peacefully revealed in the gray of the morning. Among the dark pine-trees he could discern Nan's own home. Striving with the utmost keenness of vision to detect where the shot had come from, de Spain could discover no sign of life around any of the houses. But in another moment the little singing scream came again, the blow of the heavy slug against the splintering rock was repeated, the distant report of the rifle followed.

"Under fire," muttered de Spain. He looked questioningly at Nan. She herself, gazing across the dizzy depths, was searching for the danger-point. A third shot followed at a seemingly regular interval—the deliberate interval needed by a painstaking marksman working out his range and taking his time to find it. De Spain watched Nan's search anxiously. "We'd better keep moving," he said. "Come! whoever is shooting can follow us a hundred yards either way." In front of de Spain a fourth bullet struck the rock. "Nan," he muttered, "I've got you into a fix. If we can't stop that fellow he is liable to stop us. Can you see anything?" he asked, waiting for her to come up.

"Henry!" she was looking straight down into the valley, and laid her hand on de Spain's shoulder. "Is there anything moving on the ridge—over there—see—just east of Sassoon's ranch-house?"

De Spain, his eyes bent on the point Nan indicated, drew her forward to a dip in the trail which, to one stretched flat, afforded a slight protection. He made her lie down, and just beyond her refuge chose a point where the path, broadening the outer edge, gave him a chance to brace himself between two rocks. Flattened there like a target in midair, he threw his hat down to Nan and, resting on one knee, waited for the shot that should tumble him down El Capitan or betray the man bent on killing him. Squalls of wind, sweeping into the Gap and sucked upward by the huge expanse of rock below, tossed his hair and ballooned his coat as he buttoned it. Another bullet, deliberately aimed, chipped the rock above him. Nan, agonizing in her suspense, cried out she must join him and go with him if he went. He steadied her apprehension and with a few words reminded her, as a riflewoman, what a gamble every shot at a height such as they occupied, and with such a wind, must be. He reminded her, too, it was much easier to shoot down than up, but all the time he was searching for the flash that should point the assassin. A bullet struck again viciously close between them. De Spain spoke slowly: "Give me your rifle." Without turning his head he held out his hand, keeping his eyes rigidly on the suspicious spot on the ridge. "How far is it to that road, Nan?"

She looked toward the faint line that lay in the deep shadows below. "Three hundred yards."

"Nan, if it wasn't for you, I couldn't travel this country at all," he remarked with studious unconcern. "Last time I had no ammunition—this time, no rifle—you always have what's needed. How high are we, Nan?"

"Seven hundred feet."

"Elevate for me, Nan, will you?"

"Remember the wind," she faltered, adjusting the sight as he had asked.

With the cautioning words she passed the burnished weapon, glittering yet with the rain-drops, into his hand. A flash came from the distant ridge. Throwing the rifle to his shoulder, de Spain covered a hardly perceptible black object on the trail midway between Sassoon's ranch-house and a little bridge which he well remembered—he had crossed it the night he dragged Sassoon into town. It seemed a long time that he pressed the rifle back against his shoulder and held his eye along the barrel. He was wondering as he covered the crouching man with the deadly sight which of his enemies this might be. He even slipped the rifle from his shoulder and looked long and silently at the black speck before he drew the weapon back again into place. Then he fired before Nan could believe he had lined the sights. Once, twice, three times

his hand fell and rose sharply on the lever, with every mark of precision, yet so rapidly Nan could not understand how he could discover what his shots were doing.

The fire came steadily back, and deliberately, without the least intimation of being affected by de Spain's return. It was a duel shorn of every element of equality, with an assassin at one end of the range, and a man against El Capitan at the other, each determined to kill the other before he should stir one more foot.

Far above, an eagle, in morning flight, soared majestically out from a jutting crag and circled again and again in front of El Capitan, while the air sang with the whining dice that two gamblers against death threw across the gulf between them. Nan, half hidden in her trough of rock, watched the great bird poise and wheel above the deadly firing, and tried to close her eyes to the figure of de Spain above her, fighting for her life and his own.

She had never before seen a man shooting to kill another. The very horror of watching de Spain, at bay among the rocks, fascinated her. Since the first day they had met she had hardly seen a rifle in his hands.

Realizing how slightly she had given thought to him or to his skill at that time, she saw now, spellbound, how a challenge to death, benumbing her with fear, had transformed him into a silent, pitiless foeman, fighting with a lightning-like decision that charged every motion with a fatality for his treacherous enemy. Her rifle, at his shoulder, no longer a mere mechanism, seemed in his hands something weightless, sensible, alive, a deadly part of his arm and eye and brain. There was no question, no thought of adjusting or handling or haste in his fire, but only an incredible swiftness and sureness that sent across the thin-aired chasm a stream of deadly messengers to seek a human life. She could only hope and pray, without even forming the words, that none of her blood were behind the other rifle, for she felt that, whoever was, could never escape.

She tried not to look. The butt of the heating rifle lay close against the red-marked cheek she knew so well, and to the tips of the fingers every particle of the man's being was alive with strength and resource. Some strange fascination drew her senses out toward him as he knelt and threw shot after shot at the distant figure hidden on the ridge. She wanted to climb closer, to throw herself between him and the bullets meant for him. She held out her arms and clasped her hands toward him in an act of devotion. Then while she looked, breathlessly, he took his eyes an instant from the sights. "He's running!" exclaimed de Spain as the rifle butt went instantly back to his cheek. "Whoever he is, God help him now!"

The words were more fearful to Nan than an imprecation. He had driven his enemy from the scant cover of a rut in the trail, and the man was fleeing for new cover and for life. The speck of black in the field of intense vision was moving rapidly toward the ranch-house. Bullet after bullet pitilessly led the escaping wretch. Death dogged every eager footfall. Suddenly de Spain jerked the rifle from his cheek, threw back his head, and swept his left hand across his straining eyes. Once more the rifle came up to place and, waiting for a heartbeat, to press the trigger, he paused an instant. Flame shot again in the gray morning light from the hot muzzle. The rifle fell away from the shoulder. The black speck running toward the ranch-house stumbled, as if stricken by an axe, and sprawled headlong on the trail. Throwing the lever again like lightning, de Spain held the rifle back to his cheek.

He did not fire. Second after second he waited, Nan, lying very still, watching, mute, the dull-red mark above the wet rifle butt. No one had need to tell her what had happened. Too well she read the story in de Spain's face and in what she saw, as he knelt, perfectly still, only waiting to be sure there was no ruse. She watched the rifle come slowly down, unfired, and saw his drawn face slowly relax. Without taking his eyes off the sprawling speck, he rose stiffly to his feet. As if in a dream she saw his hand stretched toward her and heard, as he looked across the far gulf, one word: "Come!"

They reached the end of the trail. De Spain, rifle in hand, looked back. The sun, bursting in splendor across the great desert, splashed the valley and the low-lying ridge with ribboned gold. Farther up the Gap, horsemen, stirred by the firing, were riding rapidly down toward Sassoon's ranch-house. But the black thing in the sunshine lay quite still.

CHAPTER XXVIII

Lefever to the Rescue

Lefever, chafing in the aspen grove under the restraint of waiting in the storm, was ready long before daylight to break orders and ride in to find de Spain.

With the first peep of dawn, and with his men facing him in their saddles, Lefever made a short explanation.

"I don't want any man to go into the Gap with me this morning under any misunderstanding or any false pretense," he began cheerfully. "Bob Scott and Bull will stay right here. If, by any chance, de Spain makes his way out while the rest of us are hunting for him, you'll be here to signal us—three shots, Bob—or to ride in with de Spain to help carry the rest of us out. Now, its like this," he added, addressing the others. "You, all of you know, or ought to know—everybody 'twixt here and the railroad knows—that de Spain and Nan Morgan have fastened up to each other for the long ride down the dusty trail together. That, I take it, is their business. But her uncle, old Duke and Gale, and the whole bunch, I hear, turned dead sore on it, and have fixed it up to beat them. You all know the Morgans. They're some bunch—and they stick for one another like hornets, and all hold together in a fight. So I don't want any man to ride in there with me thinking he's going to a wedding. He isn't. He may or may not be going to a funeral, but he's not going to a shivaree."

Frank Elpaso glanced sourly at his companions. "I guess everybody here is wise, John."

"I know you are, Frank," retorted Lefever testily; "that's all right. I'm only explaining. And I don't want you to get sore on me if I don't show you a fight." Frank Elpaso grunted. "I am under orders." John waved his hand. ""And I can't do anything—"

"But talk," growled Frank Elpaso, not waving his hand.

Lefever started hotly forward in his saddle. "Now look here, Frank." He pointed his finger at the objecting ranger. "I'm here for business, not

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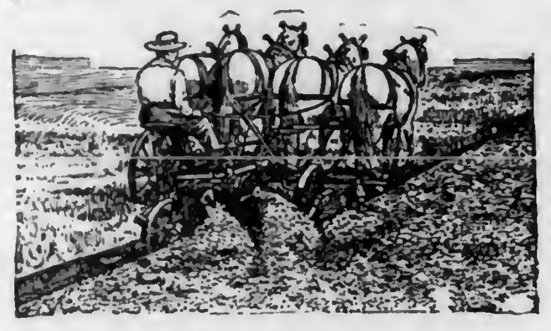

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for pleasure. Any time I'm free you can talk to me—"

"Not till somebody gags you, John," interposed Elpaso moodily.

"Look here, Elpaso," demanded Lefever, spurring his horse smartly toward the Texan, "are you looking for a fight with me right here and now?"

"Yes, here and now," declared Elpaso fiercely.

"Or, there and then," interposed Kennedy, ironically, "some time, somewhere, or no time, nowhere. Having heard all of which, a hundred and fifty times from you two fellows, let us have peace. You've pulled it so often, over at Sleepy Cat, they've got it in double-faced, red-seal records. Let's get started."

"Right you are, Farrell," assented Lefever, "but—"

"Second verse, John. You're boss here; what are we going to do? That's all we want to know."

"Henry's orders were to wait here till ten o'clock this morning. There's been firing inside twice since twelve o'clock last night. He told me to pay no attention to that. But if the whole place hadn't been under water all night, I'd have gone in, anyway. This last time it was two high-powered guns, picking at long range and, if I'm any judge of rifles and the men probably behind them, some one must have got hurt. Its all a guess—but I'm going in there, peaceably if I can, to look for Henry de Spain; if we are fired on—we've got to fight for it. And if there's any talking to be done—"

"You can do it," grunted Elpaso.

"Thank you, Frank. And I will do it. I need not say that Kennedy will ride ahead with me, Elpaso and Wickwire with Tommie Meggeson."

Leaving Scott in the trees, the little party trotted smartly up the road, picking their way thru the pools and across the brawling streams that tore over the trail toward Duke Morgan's place. The condition of the trail broke their formation continually and Lefever, in the circumstances, was not sorry. His only anxiety was to keep Elpaso from riding ahead far enough to embroil them in a quarrel before he himself should come up.

Half-way to Duke's house they found a small bridge had gone out. It cut off the direct road, and, at Elpaso's suggestion, they crossed over to follow the ridge up the valley. Swimming their horses thru the backwater that covered the depression to the south, they gained the elevation and proceeded, unmolested, on their way. As they approached Sassoon's place, Elpaso, riding ahead, drew up his horse and sat a moment studying the direction of the ranch-house, which lay under the brow of a hill ahead.

When Lefever rode up to him, he saw the story that Elpaso was reading in the roadway. It told of a man shot in his tracks as he was running toward the house—and, in the judgment of these men, fatally shot—for, while his companions spread like a fan in front of him, Lefever got off his horse and, bending intently over the sudden page torn out of a man's life, recast the scene that had taken place, where he stood, half an hour earlier. Some little time Lefever spent patiently deciphering the story printed in the rutted road, and marked by a wide crimson splash in the middle of it. He rose from his study at length and followed back the trail of the running feet that had been stricken at the pool. He stopped in front of a fragment of rock jutting up beside the road, studied it a while and, looking about, picked up a number of empty cartridge-shells, examined them, and tossed them away. Then he straightened up and looked searchingly across the Gap. Only the great, silent face of El Capitan confronted him. It told no tales.

"If this was Henry de Spain," muttered Elpaso, when Lefever rejoined his companions, "he won't care whether you join him now, or at ten o'clock or never."

"That is not Henry," asserted Lefever with his usual cheer. "Not within forty rows of apple-trees. Its not Henry's gun, not Henry's heels, not Henry's hair, and thereby, not Henry's head that was hit that time. But it was to a finish—and blamed if at first it didn't scare me. I thought it might be Henry. Hang it, get down and see for yourselves, boys."

Elpaso answered his invitation with an inquiry. "Who was this fellow fighting with?"

"That, also, is a question. Certainly not with Henry de Spain, because the other fellow, I think, was using soft-nosed bullets. No white man does that, much less de Spain."

"Unless he used another rifle," suggested Kennedy.

"Tell me how they could get his own rifle away from him if he could fire a gun at all. I don't put Henry quite as high with a rifle as with a revolver—if you want to split hairs—mind, I say, if you want to split hairs. But no man that's ever seen him handle either would want to try to take any kind of a gun from him. Whoever it was," Lefever got up into his saddle again, "threw some ounces of lead into that piece of rock back there, tho I don't understand how any one could see a man lying behind it.

"Anyway, whoever was hit here has been carried down the road. We'll try Sassoon's ranch-house for news, if they don't open on us with rifles before we get there."

In the sunshine a man in shirt sleeves, and leaning against the jamb, stood in the open doorway of Sassoon's shack, watching the invaders as they rode around the hill and gingerly approached. Lefever recognized Satt Morgan. He flung a greeting to him from the saddle.

Satt answered in kind, but he eyed the horsemen with reserve when they drew up, and he seemed to Lefever altogether less responsive than usual. John sparred with him for information, and Satterlee gave back words without any.

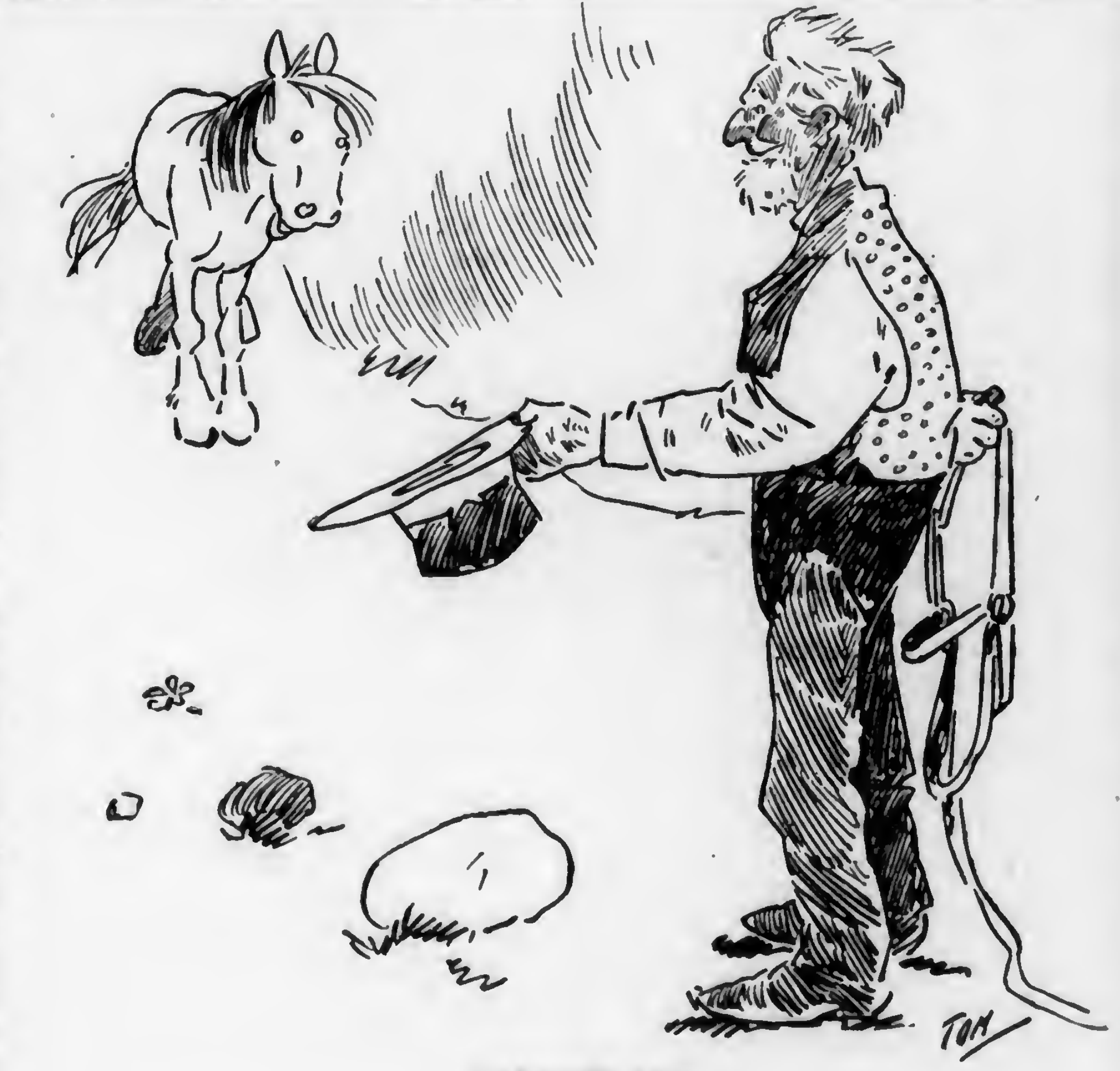
"Can't tell us anything about de Spain, eh?" echoed Lefever at length. "All right, Satt, we'll find somebody that can. Is there a bridge over to Duke's on this trail?"

Satt's nose wrinkled into his normal smile. "There is a bridge—" The report of three shots fired in the distance, seemingly from the mouth of the Gap, interrupted him. He paused in his utterance. There were no further shots, and he resumed: "There is a bridge that way, yes, but it was washed out last night. They're blockaded. Duke and Gale are over there. They're pretty sore on your man de Spain. You'd better keep away from 'em this morning unless you're looking for trouble."

Lefever, having all needed information from Scott's signal, raised his hand quickly. "Not at all," he exclaimed, leaning forward to emphasize his words and adding the full orbit of his eye to his sincerity of manner. "Not at all, Satt. This is all friendly, all friendly. But," he coughed slightly, as if in apology, "if Henry shouldn't turn up all right, we'll—ahem—be back."

None of his companions needed to be told how to get prudently away. At a nod from Lefever Tommie Meggeson, Elpaso, and Wickwire wheeled their horses, rode rapidly back to the turn near the hill and, facing about, halted with their rifles across their arms. Lefever and Kennedy followed leisurely, and the party withdrew leaving Satterlee, unmoved, in the sunny doorway. Once out of sight, Lefever led the way rapidly down the Gap to the rendezvous.

(To be continued.)



CAMOUFLAGE

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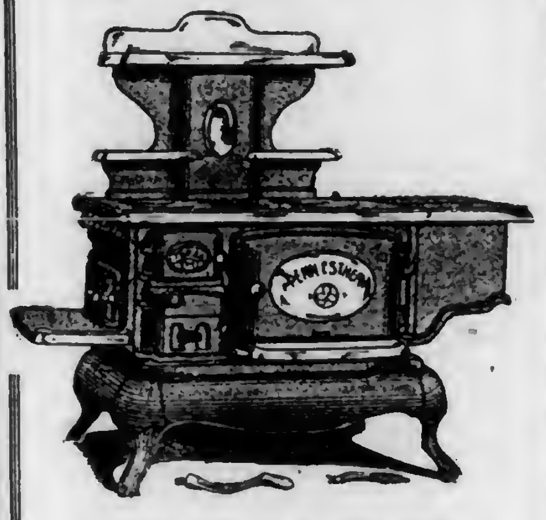

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SOME BOOKS WORTH READING

I wonder if many farm folks are not like myself sometimes and become much perplexed in the selection of the books which occupy their limited time for reading. With the thought of aiding such to make a wise selection, I am writing this article. I write from the standpoint of a busy farmer who finds time to read many books.

The literature of the farm ought to be in harmony with the spirit of the farm, and a bond of sympathy should exist between the author and the reader, and at the same time bring to the reader a broader vision and a greater faith.

I have always found it best to go into a book by the front door. The book is thus more generous and you are quite likely to find the occupants more agreeable. Entering in any other way has a suggestion of burglary. The reading of the title page, preface and tables of contents conveys a general idea of the scope and character of the book and prepares for a better understanding of it.

As to farmers' reading, I often pity the poor soul who has only his documents, yet is set in the egotistical belief that the documents constitute the sum total of human wisdom. Happy that man whose aim is strengthened and trained to efficient constructive labor, and whose mind is master to intelligently guide that arm, and whose soul is trained to the music and rythm and infinite power of the Cosmos.

What is perhaps the greatest story of American farm life ever published is "A Son of the Middle Border" by Hamlan Garland. It is a plain story of that stoical, heroic age following the Civil War which will find a responsive chord in the hearts of every one who has passed thru the hardships of farm life during that period. This new volume by a gifted author forms a true and timely chapter in the history of American agriculture. It is worthy of a careful reading by every student of American farm life.

Eight years ago the reading public was offered a very unusual biographical and historical story, "Nathan Bruke" by Mary Watts. This is a volume of pioneer days in Ohio of exceptional merit and real worth. Yet it has never attained a great popularity. The Holy Earth, by L. H. Bailey, has already become a classic, and after reading this little volume five times, I consider it the most valuable single contribution of the century, to the agricultural literature of America. It is a book with a vision and presents a view of the relationship of the farmer to the earth and its Creator which is soul-expanding in its scope. Those who are seeking food for an expanding soul will go back to that remarkable volue "In Tune with the Infinite" by Ralph Waldo Trine and follow his as he leads away from dogma and creed thru The Life Books, to a new heaven and a new earth.

In the stress of a great world crisis, I have found it worth while to dig up and re-read several times "The Simple Life", by Chan Wagner.

At another time I will recommend something really worth while for the younger readers. In the meantime, I hope they may all read The Song of the Cardinal, by Gene Stratton Porter. This splendid volume may now be had at a very moderate price. When you have read it, write and tell me your impressions of the story.—J. T. Campbell.

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PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 28, 1918.

The heavy snow storm which visited Philadelphia on Monday had its effects on the movement of all kinds of fruits and vegetables this week, and it was several days before conditions righted themselves. During the progress of the storm there was no movement in potatoes from the delivery yards whatever, and the day following the storm the hauling conditions were so very bad that the movement was of necessity very light. As a result there are ample supplies of potatoes on hand to meet all requirements, and altho prices are showing very little if any change over last week's quotations, there is an easy tone to the market. With the high demurrage rates on unloaded cars, now in effect, receivers are compelled to move their holdings more quickly. Pennsylvania potatoes are selling generally at $2.40 to $2.65 per cwt. for fair to choice stock with extra fancy well graded and selected at $2.75 to $3. New York state potatoes are in light supply and selling mostly at $2.25 to $2.50 per cwt., with fancy stock in 100-lb. sacks bringing $2.60 to $2.65. Only a comparative few are being hauled in by nearby farmers and these are drawing around 80 to 90 cents per ⅝-bushel basket.

The heavy storm has caused a reaction in the sweet potato market, and after a rather dull period which was in evidence all last week, sweet potatoes are again active, with best New Jersey stock selling at $1.25 to $1.35 per hamper and mediums at $1 to $1.15. There have been but very few fresh arrivals of Delaware and Maryland sweets, and these are selling all the way from $1 to $1.90 per hamper as to quality.

Vegetables

The supplies of dried beans are comparatively light, but the demand is not overly active and prices are a shade easier than last week. Choice hand-picked Marrows are now selling at $15.50 to $15.75 per cwt., with pea and medium at $13.25 to $13.50, and red kidneys at $14. The severe snow storm handicapped the movement of all southern stock as well as from the North, and there have been no fresh arrivals of Florida beans, egg plants or peppers on the market for several days, but supplies carried over from former arrivals of these commodities are selling at practically the same prices as those quoted in these columns last week, viz: Beans, $6 to $8 per hamper; egg plants, $4 to $5 per crate and peppers $6 to $8 per crate. New beets from Florida are in light supply and bringing good prices ranging from $2.50 to $3 per box. Root stocks of all kinds from nearby Pennsylvania and New Jersey points are in very light supply, the storm having shut off all fresh supplies, and as a result the market is very firm and active on all such. Old winter beets have been finding a ready market at $3 to $3.50 per barrel, with carrots at $2.75 to $3.25 per barrel, while parsnips are very scarce and selling generally at $3.50 to $4 per barrel, with now and then an occasional fancy lot bringing up to $4.25. Brussel sprouts after having been on the decline for several days have again taken a turn for the better, and under light supplies the market is firm at 20 to 23 cents per quart.

Supplies of old cabbage are running fully equal to all requirements and the market is ruling about steady on fancy small heads at $47 to $52 per ton, with large heads and frosted stock selling from $40 to $45 as to quality. There is quite a sprinkling of new cabbage from Florida now arriving on the market and when of fancy quality is selling at $2 to $2.25 per hamper. There was, however, some very poor quality here and this sold as low as $1.25 per hamper. Cucumbers continue very scarce with hot-house stock being the only ones here. These are selling promptly at $1 to $1.50 per dozen. No improvement is noticed in the celery market which is over-supplied with poor New York state stock, much of which has been more or less frozen. The best is selling at $3.50 per crate with poor as low as $1 per crate. The oversupply and poor quality of the New York state stock is having a bad effect on the better quality of Pennsylvania stock which is arriving and as a result has to be sold at lower prices which are now ranging from 10 to 15 cents per bunch. Horse radish continues in light supply and ruling firm and active at $6 to $8.50 per barrel. There has been no Norfolk spinach or Kale on the market for the past several days. Some spinach arrived on the market from the state of Washington and this found a ready market at $3.50 per bushel box.

The market has been abundantly supplied for the past two or three weeks with Florida lettuce and this commodity has been ruling very weak and low. Most sales have been ranging from 75 cents to $1.25 per hamper with occasional extra fancy lot bringing up to $1.50, and some very poor stock has been sold to pay freight charges. At the present writing the market is very weak, and few sales are being made over $1 per hamper. Fancy Pennsylvania hot-house mushrooms have been in light supply and ruling very firm and active at 50 to 60 cents per pound. After a slight spurt last week, onions have eased off, and with supplies fully ample for all demands the market has weakened, and at this time best stock is being sold at $2.65 per cwt., with some poor at $2.25 to $2.50 per cwt. Some white onions in Cummer crates are bringing $1.50 to $1.75. The market is bare of fancy peas and when any are here are commanding extreme prices, some Floridas in bushel hampers having sold up to $8.50. Parsley is in a little more plentiful supply and the market has eased off a little. Curley parsley is now selling at $8 to $10 per barrel, while plain parsley sold at $5 to $6. Shallots have taken another advance and are now selling at $5.50 to $6 per barrel. Squash continues in extremely light supply and when here is bringing extreme prices, ranging up to $4.50 per box. Rutabagas are in light supply and continue firm and active when of small and medium size, at $2 to $2.25 per cwt., but there have been some very large sized ones thrown on the market and these are moving slowly at $1.50 to $1.75 per cwt. The extreme weather had a bad effect on the tomato market which is fully 50 cents per crate lower than last week. Fancy 144's are now selling at $2.50 to $4 per crate as to quality and choice 180's at $2 to $3. Hot-house tomatoes continue scarce and firm at 25 to 35 cents per pound. Watercress is a little more plentiful than last week and some of it is rather poor in quality. Best is selling at $4 per hundred bunches, with poor at $2 to $2.50.

Fruits

There is very little change to note in the apple market. While receipts are not heavy they have been fairly liberal, and fancy fruit has been in active demand. Considerable of the offerings have been showing frost and these have been sold accordingly. Sales are being made according to quality upon about the following range of values: Baldwins, $3.50 to $5.50; Ben Davis, $3 to $4.25; Ganos, $3 to $4.50; Greenings, $3.50 to $6.25; Kings, $4 to $6; Hubbardstons, $3.50 to $5; Northern Spys, $3.50 to $5.50; Stayman Winesap, $4 to $6.25; York Imperials, $3.50 to $5.50; Winesaps, $3.50 to $6; Rome Beauty, $5 to $6. Box apples seem to be better, probably on account of the better quality of the fruit, as all the frosted accumulations have been cleaned up. Rome Beauty are selling at $1.75 to $2.25; Spitz, $1.75 to $2.40; Jonathans, $1.75 to $2.25; Delicious, $2 to $2.75; Pearmain, $1.75 to $2.25 and Winesaps, $1.75 to $2.25.

The demand for the few remaining pears that are being offered is very limited, and sales are ranging from $1.50 to $2.50 per barrel, as to quality. The few remaining stocks of cranberries left in the market are held very firm at $16 to $17.50 per barrel. There are but very few strawberries arriving on the market and they are meeting an indifferent demand at 60 to 70 cents per quart.

Poultry

Since our last report the supplies of nearly all kinds of dressed poultry have been very light and the market is ruling strong and higher. Very few fancy turkeys have been on the market and sales are being made quickly at 35 to 38 cents, and occasionally 40 cents for some extra fancy. Fowls are selling quickly at 30 to 32 cents per pound for the large heavy fat sizes, with smaller moving freely at 27 to 29 cents. Fancy, soft-meated roasting chickens are also very scarce and readily bring 30 to 32 cents per pound, with smaller sizes 26 cents and upwards. Old roosters are in good demand at 23 to 24 cents, and there is also a good inquiry for ducks at 27 to 30 cents.

Live poultry is also ruling firm with fowls readily bringing 28 to 31 cents, and spring chickens 26 to 30 cents. There are very few broilers here and very good prices are being paid, ranging from 37 to 42 cents per pound. Ducks are selling at 28 to 30 cents; geese, 26 to 28 cents while live turkeys are in light demand at 27 to 30 cents.

Eggs

The severe stormy and cold weather which has been prevailing all over the country has practically shut off all shipments of eggs for several days and very few arriving. Quotations for the most part are merely nominal as in most instances premiums are being easily obtained for the offerings. Nearby firsts are quotable at 66 to 68 cents; current receipts, 65 to 66 cents; western, 64 to 68 cents; southern eggs, 63 to 65 cents. Fancy, selected and graded and candled eggs are being jobbed out at about 70 to 75 cents per dozen.

NEW YORK PRODUCE

New York City, Jan. 28, 1918.

Fine, fresh butter is steady. Cheese firmer, and cold weather adds strength to egg market. Little movement in dressed poultry. Apples are plenty and weaker. Potato market steady for choice. Trade in vegetables, fair.

Butter.—Creamery, extras, (92 score), per pound, 51½c; higher score, 52@52½c; thirds to firsts, 41@51c; state dairy, 42@51c; ladles, 37@40c.

Eggs.—Fresh gathered extras, 66c; extra firsts, 64½c; nearby white, fine to fancy, 66@68c; ordinary to good, 63@68c; browns 66@67c.

Dressed Poultry.—Philadelphia and Long Island broilers, fancy, 45@50c; old roosters, 22@23c; squabs, $2.75@7.25 per dozen. Spring ducks, per lb., 22@28c; turkeys, fresh killed, 38c; capons, 35@42c lb.

Vegetables and Greens.—Beets, per 100 bunches, $2@4. Onions, per 100-lb. bag, $2@3. Potatoes, Jersey, $2.75@3.33 per 100 lbs; state and western, $2.75@3 per 100 lbs. Carrots, $2@3.50 per barrel.

Apples.—McIntosh, $4@6.50; York Imperial, $3.75@4.75; Twenty Ounce, $4@5.25; King, $4@5.50; Baldwin, $3.50@5.25.

LANCASTER PRODUCE

Lancaster, Pa., Jan. 28, 1918.

The egg market today was so well stocked that it brought memories of Summer. Every farmer had them, and as a result the prevailing rate dropped from 60 to 55 cents per dozen. The supply was too large for the demand and there were many eggs unsold at the close of business. Butter was more abundant and brought 55 cents a pound, the lowest price in three months.

Butter and Eggs.—Creamery butter, 55c; country butter, 55c; fresh eggs, 55c; storage eggs, 48c.

Vegetables and Fruits. — Paranips, 5c box; spinach, 20c per ½ pk; turnips, 18c ½ pk; potatoes, 12@20c ½ pk; do., $1.10@1.40 bu; sweet potatoes, 30c ½ pk; cabbage, 5@10c; cauliflower, 15@20c head; lettuce, 5@12c head; lima beans, 18c pint; tomatoes, 20c box; apples, 20@30c ½ pk.

Poultry.—Dressed old chickens, $1.25@1.75; young dressed chickens, $1@1.25; live chickens, $1.75@2 per pair; old live chickens, 35c lb.

Grain Market.—Milling wheat, $2; damp wheat, $1.80; new ear corn, $1.50; rye, $1.65; oats, 65c; No. 1 timothy hay, $25; clover hay, $18; wheat straw, $12; oat straw, $10.

YORK PRODUCE MARKET

York, Pa., Jan. 28, 1918.

With the exception of butter and eggs, prices are unchanged. These two commodities are very weak, the demand showing very light. Altho milk has advanced in price, butter is likely to drop back towards the old price of last winter. We spent some time in the Harrisburg markets the past week and find that produce is from 5 to 25 percent higher this winter in the Capitol City than in our own. We also have to say that we saw the very poorest quality of apples that we have ever seen from a country district. Apples of the common grades are more than 100 percent higher than in the York markets. This is a pretty strong statement but I went over the question very carefully and am certain it is not too strong.

Eggs.—56@58c per dozen.

Butter.—Country, 50@54c lb; separator, 52@55c lb. Milk, 10c quart.

Poultry.—Hens, 20c lb; dressed, 60c@$1.25 each.

Vegetables.—Potatoes, 12@16c ½ pk; few sold; 80c@$1.10 bu; lettuce, 5@15c hd; cabbage, 4@12c hd; beets, 5c bch; radishes, 5@7c bch; onions, 12@15c bx; 25c ½ pk; lima beans, 35c qt; 20c pt.; celery, 5@10c stalk; turnips, 20@25c ½ pk; corn meal, 10@12c qt.

Fruit.—Apples, 15@40c ½ pk; pears, 10c bx; 15@20c ½ pk.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c lb; back-bone, 26@30c lb; ribs, 30@32c lb; tenderloin, 40@48c lb; steak, 34@38c lb; pudding, 24@28c lb; cured hams, 40@42c whole.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 90c; rye, $1.75; bran, $2.30 cwt; middlings, $2.70 cwt.

Wholesale Grain Market.—Wheat, $2.05; corn, $1.60; oats, 75c; rye, $1.50; bran, $44 per ton; middlings, $52 per ton.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Jan. 28, 1918.

Beef Cattle.—Embargoes in the West held up receipts to a considerable extent and the market ruled firm, with prices of bulls, cows, and calves slightly higher. Demand was fairly active.

Steers, best, $14; fair to good, $12@13; common, $10.50@11.50; bulls, $8.25@11.25; extra choice, higher; cows, fat, per lb, 9@10½c; extra choice, higher; medium, per lb. 7½@9c; ordinary, per lb., 6@7¼c; calves, exceptional lots, $17@18; good to choice, $15.50@16.50; medium, $12@13; common, $10@11; Tennessee and southern, $8@16.

Sheep and Lambs.—Sheep sold fairly and ruled firm under light offerings. Lambs were pretty well cleaned up at the late advance.

Sheep.—Wethers, extra, $13.50@14; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $11@12. Lambs, choice, $19.25@19.75; do., medium, $17.50@18.50; inferior, $15@16.50.

Hogs.—Receipts were light, owing partly to railroad congestion, and the market ruled firm and higher, with demand fairly active. Quotations for best western, $19@19.50.

City Dressed Stock.—Considerable stock was held in transit and the market ruled firm, with some kinds slightly higher. Demand was fairly active.

Steers, 16½@22c; heifers, 16@20c; cows, 12@18c; calves, 24@25c; southerns and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 27@28c; extra, 29c; hogs, 26c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Jan. 28, 1918.

Butter.—Supplies were small and prices were well maintained, but as usual on Saturday there was not much wholesale trading.

Western, fresh solid-packed creamery, extra, 54c; higher-scoring goods, 55@56c; extra firsts, 51@52c; firsts, 48@50c; seconds, 46@47c; sweet creamery, extra, 55c; undergrades, 52@54c; nearby prints, fancy, 58c; do., average, extra, 55@57c; firsts, 50@52c; seconds, 47@49c; special brands jobbing at 59@61c.

Cheese.—The market ruled very firm under a fair demand.

New York, full cream, fancy June, 25½@26c; specials higher; do., September made, 25½c; do., fair to good, 23@25c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Jan. 28, 1918.

Baled Hay and Straw.—Receipts, 96 tons of hay and 2 cars of straw. Hay of fine quality was well cleaned up and firm. Straw met with fair sale and values were firmly held.

Timothy hay, according to location—No. 1 large bales, $29.50@30; No. 1 small bales, $29.50@30; No. 2, $28@29; No. 3, $25@26; sample, $20@22; no grade, $16@18. Clover-mixed hay—Light mixed, $28@29; No. 1 do., $26.50@27.50; No. 2 do., $23.50@24.50.

Straw.—No. 1 straight rye, $18@18.50; No. 2 do., $17@17.50; No. 1 tangled rye, $16.50@17.50; No. 2 do., $15.50@16; No. 1 wheat straw, $15.50@16; No. 2 do., $14.50@15; No. 1 oat straw, $15.50@16; No. 2 do., $14.50@15.

Bran.—The market was quiet with small but ample offerings at former rates.

Wheat.—No. 2 red winter, $2.24.

Oats.—No. 2 white, 98@99c; Standard, 97½@98c

TOBACCO MARKET

The Tobacco Growers' Association held an important meeting the first of the year. The attendance was more than 100, there being many new members. With reference to markets, it was reported that but few sales have been made recently, owing to bad roads, etc., prices ranged from $28 to $32 per hundred. There is but a small percentage of the crop unsold, probably the largest offering being in the vicinity of East Petersburg where it was reported some 100 acres is yet unsold. It seems strange that, in many instances, tobacco is not yet entirely cured, but such is true; there being many soggy stems. It was suggested that such tobacco, after stripping, may be piled with butts outward, thus giving it a chance to dry. There was an unusual demand for tobacco seed, indicating at least an average production this year. In general it may be said that it was still hampered by cold weather, the movement being remarkably slow for the time of year. At points where deliveries were possible the congested conditions in transportation was a greatly hindering feature. In some instances, tobacco shipped last October has not been delivered and the situation seems to be getting worse from day to day. It is not surprising that buyers refuse offerings which are wet and soggy as they would rot in hogsheads enroute to factories. Those who expect to sell on auction markets had best defer delivery until a time when their tobacco is in proper condition and when transportation is better.—H. E. Tweed, Jan. 28, 1918.

NEW YORK MILK MARKET

New York City, Jan. 28, 1918.

The market is slightly over supplied. The Federal Milk Commission has been in session here since last Thursday. It has been taking the testimony of distributors regarding surplus for January, preparatory to announcing the February rate early this week. In view of the fact that a suggestion has been made by Dr. North, a milk expert, that the burden of the surplus be borne by producer as well as distributor by means of two prices, one for fluid, and another lower rate for surplus taking into consideration the value for manufacture, it may be that the commission will adopt two rates for February. This is only a surmise, however, and perhaps is not warranted for the question of surplus would have a bearing on price in any event. If it should do this, perhaps it would adopt a pooling plan for equitable distribution of the fluid and surplus rates.

Receipts of milk and cream in 40-quart cans for the week ending January 26 were as follows:

Railroad	Milk	Cream
Erie	38,535	2,107
Susquehanna	5,896	19
West Shore	9,375	825
Lackawanna	54,960	990
N. Y. Central (long haul)	95,773	1,029
Ontario	34,960	1,460
Lehigh Valley	42,944	484
New Haven	4,665	15
Pennsylvania	9,075	170
Other sources	5,690	150
Totals	291,673	7,249

NEW BULLETINS

Agricultural Law, Bulletin No. 83, issued by the New York Department of Agriculture, Albany, N. Y.—This bulletin is a compilation of the laws of interest to farmers and those interested in farming, giving the legal requirements relative to dairy products, vinegar, feeding stuffs, fertilizers, fruit packing, etc. The bulletin also contains a digest of town law, labor law and general business laws. Every farmer should have a copy of this pamphlet, and other state departments of agriculture would do well to publish a similar bulletin.

Soybeans: Their Culture and Use: Bulletin No. 312. Published by the Ohio Agricultural Experiment Station, Wooster, Ohio.—Every phase of soybean culture is described in a clear, concise manner, including soil requirements, seeding and cultivation, harvesting, varieties, etc. The uses of soybeans are also discussed, telling how and what to use for the different special uses. Charts showing the comparative values with other feeds, also the relative money and feeding value per 100 pounds.

FARM MEETING CALENDAR

New York State Grange, Syracuse, N. Y., February 5-8

New York Farmers' Week, Ithaca, N. Y., February 11-16.

New York State Potato Association, Ithaca, N. Y., February 12-13

New York Vegetable Growers' Association, Ithaca, February 12-14.

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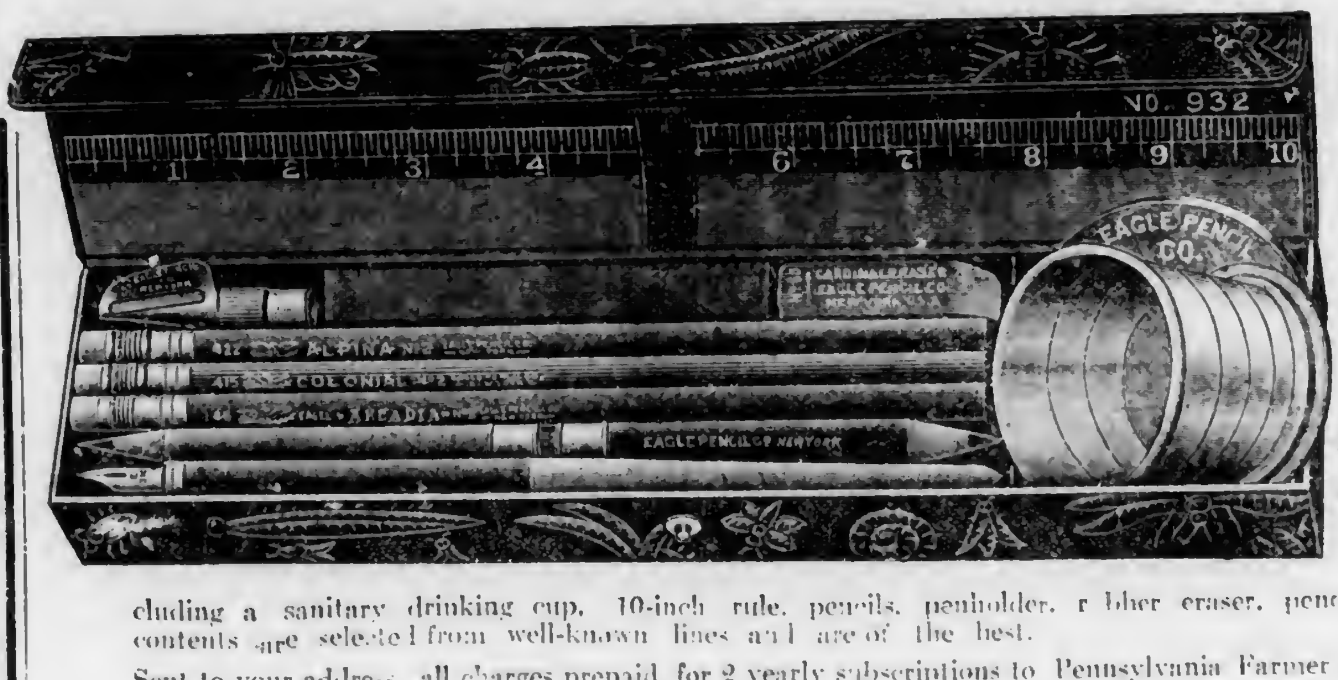

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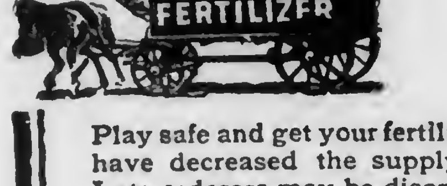

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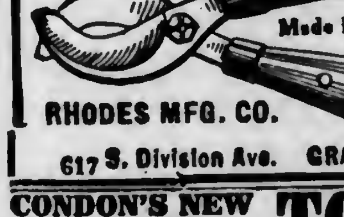

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Veterinary

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Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Worms.—I have 12-year-old horse that I purchased some 2 years ago. His coat is rough, appetite good, is fed 6 quarts of oats daily, has all the hay and corn fodder he will eat, but is not thriving. I forgot to say he passes a few worms. A. H., Lambertville, N. J.—Increase his grain ration, give him 1 teaspoonful powdered sulphate iron and same quantity salt at a dose in feed, once daily, until he shows glossy coat and is thriving.

Scratches. — Have pair of four-year-old horses that have been troubled with scratches for the past six weeks and simple home remedies fail to cure them. Their hind legs swell and they start stiff. G. A. F., Lakewood, Pa.—Clip hair off sore parts, apply 1 part Liquor Cresolis Compositus and 20 parts water, or apply 1 part coal-tar disinfectant and 20 parts water, three times a day. Give each horse a dessert spoonful Fowler's solution at dose in either feed or drinking water, three times a day for thirty days. Standing horses in filthy stables, failure to dry the legs when coming in wet, or washing dirty legs and allowing them to remain wet are common causes of cracked heels (scratches). Keep their bowels open and active.

Quittor.—Sometime ago I wrote you regarding my horse that was then lame, now horsemen tell me it is a clear case of quittor; if so, write and tell me how to cure him. S. M., Callicoon, N. Y.—In order to successfully treat quittor it is generally necessary to do a certain amount of surgical work; for if not, a cure cannot be effected. Try and obtain drainage to tumor, apply 1 part iodoform and 3 parts boric acid, once a day. Fairly good results often follow injecting some tincture iodine into cavity three times a week. The foot should be kept clean, wound covered with oakum and bandage.

Indigestion. — A year ago last spring I bought a horse, 7 years old, weight, 1400 lbs. He was in good condition and remained so all summer, but in the fall he commenced to grow thin; since then he has not gained, but is weak, tiring easily when worked and his bowels are too loose. He has been treated by three different veterinarians who have failed to help him. A. C. W., Cazenovia, N. Y.—First of all you should make careful examination of his grinder teeth for they may require floating, or he may have decayed tooth, which should be extracted. Give him 1 dram fluid extract nux vomica, 1 oz. tincture cinchona, and ½ oz. Fowler's solution at dose in either feed or drinking water, three times a day for 30 days. A change of food supply is perhaps as important as giving him drugs.

Weakness.—I have nine-year-old horse which weighs about 1200 lbs. that seldom lays down, also passes urine too often and his water is thick and stringy. His appetite is good and he is fed 12 quarts oats daily, but he remains thin. I. H., Brockton, N. Y.—If you keep him in single stall, change to box stall. Feed 1 part wheat bran, 2 parts corn meal and 3 parts oats, also let him have some clover and roots. Give him a teaspoonful powdered sulphate iron, 1 tablespoonful cooking soda and the same quantity of ground gentian in feed, three times a day.

Stunted Filly.—We have filly 6 months old that is not growing, but she is fed one quart oats 3 times daily; also has all the timothy hay she will eat. J. V., Mountain Gap, Pa. —Feed filly 1 part wheat bran, 1 part ground corn, 3 or 4 parts ground oats, adding small quantity of oil meal to grain ration once daily. Instead of feeding all timothy, feed mixed hay, also give her few roots once a day. Groom her twice daily and keep her in stable during cold, blustery weather.

Capped Hock.—Have horse which has capped hock. Would like to know what will reduce the bunch. B. W. S., Chadwick, N. Y.—Apply equal parts tincture iodine and spirits camphor to swelling, three times a week.

Heifer Fails to Come in Heat.—I have heifer that freshened Nov. 1, which has not yet been in heat. What can I give to help her in heat? A. K. M., Parkersburg, Pa.—Give her one dram ground nux vomica, 2 drams ginger and one dram ground capsicum in feed, two or three times a day.

Unthrifty Calf. — Indigestion. — I have calf 9 months old that eats well, but is in very poor condition. This calf first began to get out of condition September 1, at which time he had diarrhea. I have another calf that was fed too many potato parings which did not agree with him and his bowels became loose, causing him some bowel pain. H. L. P., Troupsburg, N. Y.—Give him ½ oz. cooking soda and ½ oz. ground gentian at dose in feed, three times a day. Give the other calf 60 drops dilute hydrochloric acid in ½ pint water either in feed or drinking water after meals, three times daily. Doubtless a change of feed would help both cases.

Hog Question.—I would like to know what causes steam to leave the body of hogs when they first get out of their nest. In the next pen which is nice and clean the hogs do not steam when they get up. W. E. B., Shippensburg, Pa.—The moisture on body of hogs and the more closely they huddle together in their nest the warmer they get, which accounts for the steaming of body when they first leave their nest. Fleshy hogs are most likely to throw off vapor and some breeds are inclined to perspire more than others. These are not bad symptoms.

Choking.—I have a pig 4 months old that has thrived until about one week ago; since then he takes fits, when he first commences to eat. I feed slop made of bran and shorts and some soft corn. While eating, pig suddenly stops, rears up, falls over, and seems to be in great pain, lying there for a few minutes, then gets up and goes to eating as tho nothing happened. J. D., Huntingdon, Pa.—If you will feed warm swill and make it good and sloppy, your pigs will not choke very often.

Cracked Heels.—I have a mare troubled with sore heels in both hind legs. Recently she has been driven in mud and slush, but I have washed her legs every evening when she came in from work and have applied coal-tar disinfectant and water, but she is gradually getting worse. S. W. T., Porters Sideling, Pa.—First of all, you perhaps made a mistake in not drying the legs properly after washing them. Dissolve one-quarter lb. acetate of lead, three ounces sulphate of zinc and two ounces of tannic acid in a gallon of clean water, which has previously been boiled. After washing legs with tepid water, wet the sores with this lotion, then cover legs with cotton and leave bandage on for two or three hours. Give her a teaspoonful of acetate of potash and a tablespoonful of bicarbonate soda at a dose in feed or drinking water, twice a day.

Wart On Ear.—Have a two-year-old heifer with small wart on ear, but so far as I can tell this is the only one on body. What will take it off? P. W., Mercer, Pa.—War's are not deep seated and can be cut out easily, then apply equal parts powdered alum and tannic acid to wound daily. If you will apply a saturated solution of salicylic acid in grain alcohol and apply this mixtureture once every two or three days, it will take it off.

Roarer. — I would be pleased to know thru the columns of Pennsylvania Farmer what can be done for my mare which seems to be thick winded. When she pulls heavy load or is driven moderately fast she whistles, partly chokes and almost falls. This shortness of breath can not be on account of ill health, for she is healthy. E. F. B., Carlisle, Pa. —She is what is called a roarer, or whistler. The ailment frequently follows an attack of strangles, sore throat or injury. Giving her medicine or applying it to throat will not have any good effect, but she can perhaps be relieved by a surgical operation. However, I might say this is work for an experienced and skillful veterinarian.

Swollen Glands.—I bought a cow (2½ years old) some two months ago. She had freshened three weeks before I purchased her and was giving 9 quarts of milk daily, but is now milking only six quarts a day. They fed her corn stalks, timothy hay and ground grain consisting of corn meal, alfalfa meal, oil meal and bran, salt daily and charcoal twice a week. She has lumps on her udder. They come and go, but never open or become painful. At times she becomes restless when I milk her. The lumps are hard. I wash her bag before and after milking, and also apply carbolized vaseline on these bunches. What had I better apply to bunches? Am I feeding her all right? When I bought her they stated that she was not in calf, but the herd bull ran with them all the time and I would like to know if she is likely to be in calf. E. L., Dunellen, Pa.—Apply iodine ointment to bunches on udder, twice daily. Your druggist can supply you with this ointment. You are feeding her a fairly good milk ration. If she fails to come in heat, she is perhaps in calf.

Sprained Hip.—One of our cows slipped and fell on ice, since then she has been lame in left hind leg. The only tender spot is on hip. What kind of liniment shall I apply? J. K. B., Meadville, Pa. — Apply equal parts turpentine, aqua ammonia and raw linseed oil, once daily, until she recovers.

Chronic Ringbone.—For the past four years one of my work horses has had bunch on right hind pastern, but it has never caused any soreness or lameness. This blemish cuts down his selling value and as I can spare him thought I would put him in good market condition before I offered him for sale. I wish you would tell me what will reduce this bunch without disturbing the hair. H. D., W. Troy, N. Y.—In my opinion it would be little short of folly to treat this horse. Just tell the buyer that he has traveled sound for four years. A bunch of this kind cannot be removed without leaving a bald, unattractive blemish which, of course, would depreciate his value. Besides, treating him may start bunch growing and ruin him. Leave him alone.

Scurvy.—Several of my pigs are troubled with some sort of skin ailment which roughs up skin. The hide is in a scurvy-like state. Some of the pigs scratch themselves, but there are no raw spots on body. P. T., Watertown, N. Y.—Perhaps your pigs are not sufficiently well supplied with clean bedding. Mix one part oxide zinc in eight parts petrolatum and apply some of this ointment to rough parts of skin, twice a week.

Catarrh.—I keep on my farm a flock of sixty hens. They do not have extra good care, and this winter several of them have watery discharge from eyes and beak. They eat as well as ever. What shall I give them? C. W. D., Rutland, Vt. Are you sure that your hens are not roosting in a drafty coop? Place muslin over every outside opening leading into coop. Keep the henhouse dry and clean. The birds will be most benefited by generous feeding and good care, not by giving them drugs. If they show no improvement in ten days, write again.

Partial Loss of Power.—I am feeding fourteen shoats for market and two of them seem to have difficulty in getting on foot and until they move about some have rather poor use of their hind quarters. I am feeding them all the corn they will eat, besides they have separator milk and middlings, once a day. These shoats are kept in a pen with cement floor which I believe is large enough for this number of hogs. What do you recommend? D. O. S., Girard, Pa — Place these two shoats in a pen by themselves, as the other hogs may climb on or over them and perhaps injure their backs. Their ailment may be the result of feeding food which contains too little protein. Feed more shorts, tankage, oil meal and less corn to these two hogs, besides, you had better hand rub their backs twice a day. It is perhaps needless to say that they should be kept in a dry, comfortable place

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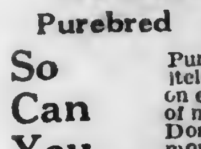

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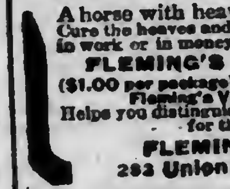

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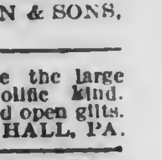

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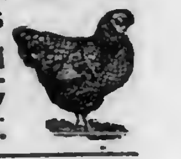

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Soybeans in Northern Pennsylvania

Cuts Cost of the Feed Bill when used as Ensilage or Soiling Crop

By D. K. SLOAN,

RRADFORD CO. FARM BUREAU.

Not as a war measure, but more as a common sense necessity, farmers that reside in the north tier counties of Pennsylvania are on the look-out for something to solve their big problem, the regular "Feed Bill". This situation is especially true for the specialized dairy farmer who, as a matter of fact, is the most common class of farming in this part of the state. If you will total the value and annual income from live stock and its products for these counties, you will find dairying the "Big Business" of their farming operations.

Concentrated Feeds are Purchased

Practically every dairyman purchases most of the grain feeds that he uses in his dairy business. When you consider that there are over 40,000 cows in Bradford County alone, which is typical of the north tier dairy centers, you can see that there is an immense amount of money paid out annually for feed. Under normal feed prices we estimate, in this county, that there is an annual feed bill for dairy cows alone of about $800,000. This represents cash transaction and is not accounted for by home-grown materials. When we consider that the annual receipts from dairy products is about $1,750,000 and that almost one-half of this goes for purchasing grain, it is not difficult to understand why the dairymen are interested in some method that will give them a profitable home-grown ration.

Of the total amount of feed that is purchased, the protein material is a big part. This is due to the fact that climatic and soil conditions are not favorable to the normal, profitable production of such feeds. In other words, non-leguminous crops grow most naturally on our farms. This fact is due in most cases to a lack of lime as well as poorly drained soil conditions.

We realize that with our natural handicaps, we will not be able to accomplish results equal to those areas which have more favorable soil and climatic conditions available. However, we do believe that we can materially reduce the amount of purchased grain by a greater use of concentrated roughage. Corn silage, produced from properly-matured corn, will materially affect the amount of corn meal r hominy purchased as compared with ensilage made from juicy, immature varieties. Where lime is applied and drainage conditions are corrected, it is not difficult to grow good yields of red clover as a source of protein from roughage. Alfalfa can be grown in this territory where all the fundamental requirements of that plant are cared for. In a test on 150 different farms conducted by the Bradford County Farm Bureau, we found it possible to obtain a good stand of alfalfa; this being possible only where they carried out the many details as drainage, fertility, lime, inoculation, and good seed beds.

Thus it can be seen why our people are interested in any crop that will assist them in their great problem by giving them a concentrated roughage or possibly a grain concentrate equal to cottonseed meal. We believe, or at least have faith, that the soybean will accomplish something for us along these lines.

Shallow Covering of Soybean Seed is Important

Proper Variety Important

There is considerable variation in the habit of growth as well as time required for maturing different varieties of soybeans. While practically all varieties will mature under southern conditions, there are very few that will develop sufficiently to be properly grown for their use as ensilage or for grain. It is important therefore for any community or individual to first gain information as to what varieties would best suit their climatic and soil conditions. Five years ago we conducted tests for this purpose in cooperation with the agronomy department of the Pennsylvania State College. Of the five varieties tested at that time, the Wilson soybean and Medium Green were the most favorable varieties. We hoped to find a variety that would set the pods and have the beans sufficiently matured to at least reach the dough stage. Beans matured to that condition are of a desirable quality for ensilage, which is the most practical method of utilization for this territory to date.

Variety Test Plot on C. M. Horton Farm, Bradford Co., Pa., to Determine Best Variety For County

Method of Planting

By far the most corn in this county is planted with the grain drill. Consequently, it has been necessary to plant the soybean with the corn with this kind of a machine. Unfortunately, many growers have not been successful in getting a uniform stand of corn and beans. This is due to the fact that the two seeds are of different sizes, thus the soybeans will always sift to the bottom of the seed box and they will feed out faster than the corn, thus giving many stalks of beans without any corn and vice-versa. Where precaution was taken to keep the seed well mixed in the drill box, very good results can be obtained in planting with the grain drill.

Within recent years there has been put on the market the regular two-row corn planter which has special equipment consisting of seed box, plates, etc., for planting the soybeans just the same as corn. This machine enables one to plant two crops at the same time with all the desired depths or distances, depending on size and shape of the seed. Another method of planting the crop practiced in this vicinity is to drop the beans in the hill with the corn after it has been planted in the check rows. Many local farmers, as soon as completing the planting of the corn with what are known locally as stab planters, will immediately proceed with the soybeans, placing about eight to ten beans in a hill with three to four grains of corn. One precaution necessary in this method is to avoid putting the beans in too deep, as it is a common practice of using a stab planter to push your grain too deep in the ground. In planting with a regular corn and soybean planter, there should be dropped a grain of corn about every eight to ten inches and a soybean every two and one-half to three and one-half inches.

One important detail to keep in mind in connection with the planting operation is to avoid having the seed placed too deeply in the ground. This seems especially important for such conditions as exist on the volusia type of soils. There is usually experienced at least a week or ten days of cold, wet weather during the first or second week of June or soon after the beans have been planted. When they are placed too deep in the ground the heavy rains, causing a crust to form over the surface, make it difficult for the plants to get started in their growth. We have known of cases where deep planting has resulted in absolute failure of this crop. If they are planted the first week in June which is the most favorable date for the northern part of the state, and could be covered one inch, I believe it would be sufficient.

When soybeans are to be grown as a separate crop for seed or ensilage, they could be sown rows 28 inches apart planted with the ordinary grain drill, using about a half bushel of seed per acre. This will permit cultivation which is important for obtaining proper growth.

Contrary to expectations, the growth of corn is not reduced as a result of growing the beans in the same row. In 1914 the Purdue University extension department conducted seven demonstrations in comparing the yield of corn alone and corn and soybeans grown together for silage. In every case the combination produced more silage per acre than corn alone and the average increase was 2,521 pounds. The largest gains were obtained in sections where moisture conditions were favorable and the least gains in sections where the season was very dry. In 1915, a wet season, four more demonstratons were conducted and the average increase for the corn and soybeans over corn alone was 3,660 pounds per acre. During the past season, which we know was especially moist, the Susquehanna County Farm Bureau reported increased yield of three tons per acre of the green soybeans with no decrease in the yield of corn.

Results in Feeding

From various sources, information has been obtained which shows that corn silage which is being renforced to any apprecable extent with soybeans has given very good results, and especially in feeding dairy cattle. The Ohio Experiment Station found that soybean or alfalfa hay in a feeding ration would replace concentrated protein feed with satisfactory results. Local dairymen have expressed different degrees of success along this line. One grower last season, who had a very good stand of beans and corn, claims that he reduced the amount of grain feed at least one-third on account of the soybeans in his ensilage. A recent report on this detail is as follows from a dairyman from this county:

His report was that where he planted three beans to every grain of corn, the corn being six inches apart in the row, he had a very good growth of beans which were present in the ensilage in a noticeable degree. In feeding this ensilage as compared with ensilage made from corn alone, with other conditions the same, his herd of ten cows increased 35 pounds of milk per day in a week's time and maintained it uniformly. This increased production at the present scale of prices would amount to about one dollar increased returns, due entirely to the soybeans in the ensilage.

According to research data the protein combination of soybeans is of such nature as to materially stimulate milk production. We believe that definite results can be expected with soybeans in ensilage corn in proportion to the amount of their presence in the mixture. Those growers that have only a small amount of beans in proportion to corn naturally could not expect the same degree of results as where the beans are more abundant. Where a gross tonnage is obtained of twelve tons per acre of soybeans and corn of the proper proportions, I believe it would be wise to increase the soybean content by mixing at the cutter as it goes into the silo one ton of beans to every six tons of corn with beans. This combination should make a showing for increased production with less grain.

In cases where the plant has been grown separately, to be fed either as soiling crop or hay there are various records of value concerning their use. In this county we have not cured them to any great extent as hay because it is difficult, under our seasonal conditions at that time of the year, to dry them properly. They possess a coarse, woody stem which makes them a difficult crop to handle without mold. As hay, in analysis and feeding tests, they are reported to be equal to alfalfa, and especially so when they can be cured without loss of the leaves from the stem.

All stock, and especially dairy cattle, seem to relish the crop handled as a green soiling crop. In many cases local farmers have fed it as such with an immediate response in increased yield of milk. For this purpose the crop should be cut just about the blossoming stage. One precaution is necessary: The cattle should be fed in gradual amounts to avoid possible digestive trouble.

During the past season we have tested nine different varieties with the idea of obtaining information concerning the possibilities of maturing this crop for threshing as grain. If this is possible, and we believe it is, this crop will prove very valuable in our grain ration as a substitute for cottonseed meal. The four varieties found most favorable are Medium Green, Wilson, Manchu and Chestnut. Next year we expect to sow quarter-acre plots with the idea of curing them out to use for seed or feed.

Inoculation

We have found that inoculation is not entirely necessary to obtain the crop of soybeans. However, when the seed has been treated with pure culture inoculation there has resulted a better growth in foliage and an increased amount of nitrogen has been left in the soil for the succeeding crop.

The following results from an experiment on the Miami County Experiment Farm, Ohio, showing the effect of soybeans in a rotation on soil fertility, may be of interest. The experiment was started in 1911. One rotation is corn, oats, wheat and clover; the other is corn, soybeans, wheat and clover. The 1915 crop on the check plots, or those receiving no fertilizer treatment, were as follows:

	Oats Rotation	Soybean rotation
Corn	34.5 bu.	51.7 bu
Wheat	7	18.8
Clover	3863 lbs.	4398 lbs

Soybean Acreage Increasing

Up until five years ago there had been very few farmers that had attempted to grow soybeans in this part of the state. Of that number, those that had been successful were most enthusiastic concerning their results. With the various demonstrations and tests available in the various communities there has been established considerable interest along this line. During the past season there was planted 1,500 acres of ensilage corn with soybeans in this county. Their general hardiness as a legume crop and the attractive results in feed tests stimulates my belief that they are sure to become an important crop in reducing the feed bills of the dairymen of this section.

Farmers and the Income Tax

A Duty That Must Not Be Neglected

Perhaps you have paid no attention to the income tax heretofore. Failure to report your income before March 1, 1918 will cost you dearly—for the penalty is from $20 to $1,000 fine and in addition fifty percent of the tax due. If you fail to give truthful answers to the questions on the blank, the fine will not exceed $2,000 or will not exceed one year's imprisonment or both, in the discretion of the court. In case of sickness or absence from home you may get an extension of time by written application to the Collector of Internal Revenue, in which must be stated the reasons why the return cannot be rendered in the time prescribed by law.

If you "dodge" the tax this year and next, or for years to come, look out for the day of reckoning when somebody reports you and the government collects all back taxes with the penalties of 5 percent of the amount of tax due and one percent interest for each full month during which the tax remains unpaid. It is cheaper to pay every year, and not try to dodge it.

Who Must Report Incomes?

Every unmarried person having a net income of $1,000 or more, and every married person having a net income of $2,000 or more in 1917, must report before March 1, 1918 to the Collector of Internal Revenue for the district in which the tax payer resides. It is necessary that you find out whether you have an income that will make you taxable under the new law. So you had better get out your pencil and do some figuring.

The law defines income as profit, gain, wages, salary, commissions, money or its equivalent from professions, vocations, business, commerce, trade, rents, sales or dealings in property, real or personal, and interest from investments except interest from government bonds or any state, municipal, township or county bonds. Income from service as guardian, trustee or executor; from dividends, pensions, royalties, or patents, or oil or gas wells, coal lands, etc., and income from all sources are taxable under the law, if the net income from all sources come to the sums named.

It is going to be some task for a farmer to find out what his income was. Few keep books, especially of the smaller items bought and sold. It is counted as sale if you take butter, eggs, apples, potatoes or any product you have raised to the store and "trade it out" for groceries, wearing apparel, or what not. Living expenses cannot be deducted, so you must figure the value of the farm products traded for something, as tho you sold the products for cash. It is nothing to the tax collector whether you got cash or sugar for the product.

The same is true of real estate. If you sold part or all of the farm they figure as profit or income the difference between the cash value March 1, 1913, and the price for which sold, or the difference between its cost and selling price if acquired on or after March 1, 1913. Rents are considered income whether paid in cash or in part of the crop or otherwise.

What Is Exempt?

Of course there are exemptions. The single person who is supporting dependent children or dependent parents or crippled relatives who cannot help support themselves is considered the head of a family and has the same exemption—$2,000—as a married person. Unmarried persons with incomes of less than $1,000 and no dependents are exempt from the tax.

Where husband and wife both have incomes they can report together and claim one exemption or report separately, and divide the one exemption between them. In case they are divorced or living apart the one caring for the children can claim full exemption and the other only $1,000.

There is an exemption to the extent of $200 for each dependent child under eighteen years of age. Suppose your net income figured up to $2,800 and you have four dependent children under eighteen years, you would be allowed $800 deduction for them.

Other Exemptions

There is a certain depreciation in the value of property which is exempt. It runs as follows: Five percent on frame buildings and 2½ percent a year on brick or stone buildings; 10 percent on the cost of farm machinery and implements. But this deduction must be based upon actual depreciation thru use or partial destruction. If its value is the same as the year previous, there is no deduction.

In case of loss by fire, theft or storms, not covered by insurance, you can deduct the fair market value of the property. This applies also to machinery, implements and farm buildings. You can deduct losses in trade or business provided the loss was actually suffered. But you can't deduct for hogs lost from cholera or cattle from sickness unless you had bought them, and then only in the amount you paid for them. Neither can you deduct for loss of any stock or grain or feed that you have produced because you are not required to report on these until sold.

You can deduct incomes from liberty bonds, and certain other public bonds, and gifts to religious or charitable or educational institutions to the extent of fifteen percent of your taxable income provided no part of the gift goes to an individual stock holder in said institution for his benefit.

All salaries or compensation paid by the state or political sub-divisions of the state are exempt. That is, if you are a county supervisor or something whereby you get a per diem or salary, this does not have to be counted in the income tax report.

What Is Not Exempt?

Your living expenses are not to be deducted from the total. And you can not deduct any charge for any personal service rendered in the business, or for any member of the family working at home. You can't allow for a salary to yourself. But you can deduct for cash paid hired help as a part of the running expenses of the farm. Even where sons or daughters work for the parents at a wage, the wage must be paid in cash as to strangers and then this expense may be deducted. If this is done to avoid the tax, there is severe penalty.

"All necessary expense actually paid within the calendar year in carrying on the business" may be exempt from taxation. The question is: What is necessary expense? The family and personal expenses are not so considered. Your groceries, fuel, light, clothing, things like a piano for the home, are personal or family expense and not deductable.

But you can deduct taxes, except income taxes and those assessed against local benefits. Deduct interest paid on your indebtedness, insurance except on your dwelling; seed and feed purchased; stock bought for re-sale; cash paid for hired help, but cannot deduct as part of the wage the value of their board, lodging or washing.

You can deduct for the necessary repairs, but not for permanent improvements, nor for new machinery. You can deduct for small tools, and for the cost of running your machine such as a tractor, threshing machine, etc. However, you can not deduct for the cost of running the family auto if used as a pleasure car. If used only as a part of the farm machinery to run about on business its cost of operation can be deducted.

In brief this is the new income tax law. It is up to you to see the income tax man. Don't think the tax does not apply to you. Find out by talking with him and when you go to see him have all figures ready showing what you took in and what you paid out. The government is going to send its income tax men out where it will be easy for you to get to them. An income tax man is going to be in every county in every state in the Union sometime between January 2nd and March 1st. Watch the local newspapers or ask your banker or postmaster when he'll be there, or near your place, and then go to see him. He will have a tax form for you, help you make it out, answer all your questions, and won't charge anything for his services.

Don't neglect the income tax because if you do you'll regret it later when the government finds you out, as it will, and makes you pay the penalty for failure to obey the law.

Penalties

For failing to file income report before March 1, 1918, not less than $20, nor more than $1,000, and in addition 50 percent of the amount of the tax due. For failing to pay tax before June 15, 1918, 5 percent of the amount of tax due, and 1 percent interest for each month tax remains unpaid. For making false report, not exceeding $2,000, or not exceeding one year in jail or both.

What Can I Do For The Wheat Crop

Wheat was sowed late and in too many instances commercial fertilizers and yard manure were not used, owing to prevailing high prices of labor and fertilizer. The addition of a little lime was also omitted from the seed bed, rendering a good catch of clover less certain. Some of these farmers are now asking what can be done to get better returns in wheat and clover from these acres.

The Pennsylvania Farmer a year ago called attention to this same condition, stating that as labor and seed were represented in these wheat acres it would be profitable to apply a light dressing of manure before the trying days of March came; thus adding plant food and at the same time mulch protection to the plants. I have tried this out on exposed portions of fields with excellent results, getting in one instance more grain from the unfavorable but protected portion of the field.

A light application of acid fertilizer can be used on the wheat in March or April without injury to the plants, or floats may be applied depending on subsequent crops to get some benefit from the application. I would not hesitate to take a drill or lime spreader on this field and apply lime in the raw ground rock form a few weeks after the fertilizers or manure were applied. Then I could look for some benefit to both wheat and clover resulting from such treatment.

While the above is not the best way to meet the requirements of the wheat and clover plants, yet these essentials are better late than never.—D. H. Watts, Clearfield County, Pa.

Good Stand of Soybeans With Ensilage Corn. Planted With One-Row Corn Planter

By the Way

By

Father Penn

The following is quoted from a letter commenting upon an article which appeared in this column some time ago:

"'Father Penn' has brought up the very interesting question of how we are going to meet the new conditions forced upon us by the war, and how the farmers will be affected by the extension of socialistic measures and the change from private to common ownership of land. He writes: 'In spite of our national opposition to such measures and the seeming loss of individuality and the encroachment upon 'our rights', the line of progress is in the direction of greater contributions from the individual to the public welfare.'

"I am not surprised that Father Penn is just a little bit uneasy about the growth of socialistic ideas in governmental affairs; but, uneasy or not, he feels that a better and more unselfish citizen is desirable—one who will give some time and thought to questions of public welfare.

"Philadelphia is the birthplace of the Declaration of Independence which boldly and unequivocably stated that the right of all men to life, liberty and the pursuit of happiness was inalienable. Philadelphia is also the birthplace of Henry George, who just as boldly and unequivocally stated that life, liberty and the pursuit of happiness for all men is simply impossible, if the land (on which all men must live and from which they must draw their sustenance) is permitted to become the private property of the few. He discovered a plan which should be closely studied by all those who, like Father Penn, believe that the line of progress is in the direction of greater contributions from the individual to the public welfare."

The phrase, "Make the world safe for democracy", struck a responsive chord in the heart of all mankind. It may be that the idea is but a hazy generality in the minds of most people, yet the unanimous approval shows that it is in keeping with that impulse in the human race which ever spurs it upward and onward. As we come to better understand it, we find that it includes not only safety from military attack from without, but that a better social and economic order must prevent the strong and aggressive from preying upon the weak in all ways—business as well as military.

There are those who tell us that business practices among men are the result of environment, opportunity and custom, and that they can be modified and improved only by developing man's spiritual and moral natures; that it is not the proper function of government to limit the posibilities of individual enterprise. This philosophy descends to us from the days of feudalism when might made right, and they who had the power might justly take what they chose. But democracy has absolutely nothing in common with feudalism. In fact, the one is the antithesis of the other.

One of the problems which democracy finds always before it for solution is how best to stimulate individual enterprise, and at the same time prevent monopoly and consequent extortion. In times past it was claimed that only unrestricted profits would encourage the individual to do his best. In every country that "best" has been measured in terms of volume of business and in the size of individual fortunes, regardless of the waste of human life and natural resources occasioned by the process. When the world is really and truly safe for democracy it will be when the common-good is of first consideration and individual enrichment secondary.

I said that the phrase "make the world safe for democracy" struck a responsive chord. There has been universal approval, but the test of sincerity, or perhaps the understanding, is yet to be tested. Do we all have the same ideals? Are we of one mind and purpose that there shall be equal rights for all and special privileges to none? A condition in which a few may not have power to exact unjust tribute from the many, or to withhold their just share of taxes in the support of the government? If we take what we read as an index of thought there are those who fear that the "brutal majority" may have more authority in the future than in the past. Note the following:

"It would be a sad outlook indeed if the march onward of mankind were to be a march away from freedom; if our industrial goings and comings were to be at the dictation of a master, and that master the most arbitrary, ignorant and merciless yet known—the majority. The tendency would inevitably be toward destruction of initiative, invention and interest in work—toward making the American people as inert industrially as the Germans are politically."

What do such understand freedom to mean? Is it the privilege to take where you can, to do what you please, to ride rough-shod over the rights of others? Is the prevention of such actions by the majority the act of the "ignorant and merciless"?

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Local Option in New Jersey

We congratulate the people of New Jersey upon the advance step they have taken in the line of prohibition by the passage of the local option law. But if its passage lulls the citizens to sleep and stops agitation for the ratification of the national prohibitory amendment it will probably do just what the politicians of the state desired when they urged passage of the local option law. The time was when the cry, "half a loaf is better than none" was consistent since it urged doing the best possible thing under adverse circumstances; but now there is the opportunity to get a whole loaf and people are foolish who would be faked into accepting half a loaf.

It is but a short time since the majority of the city papers were against local option. The steady march of prohibition has become so ominous that, in order to save as much as possible, they now plead for local option but oppose the national amendment. This attitude is consistent with their almost universal policy to represent the city point of view or ignore or belittle the rural citizens' desire for the betterment of the state or nation as a whole. The question of prohibition has always been slurringly referred to as an idea of women, reform cranks and rural communities. This attitude is well illustrated in an editorial appearing in a recent daily paper. After approving of the "sane policy" of New Jersey, it goes on to say:

> "Local option is always a patriotic issue. It makes it possible for Uncle Josh and Uncle Silas to attend to their village affairs and sets us all free to give our best advice to Uncle Sam on the biggest and broadest affair he has ever had to handle."

In other words, it gives country people, "Uncle Josh and Uncle Silas", an opportunity to manage their little country affairs without interfering with the city's business. Perhaps "Uncle Josh and Uncle Silas" would be partially satisfied with this adjustment if it were a reciprocal arrangement, and the city would be content to attend strictly to its own business and not attempt to exert any influence beyond the city lines. But this, of course, is as impossible as it is undesirable. World progress and improvement is made as provincialsm disappears, and we are beginning to understand that what is good or bad for one community is good or bad for the whole. In these days of leveling and of breaking down barriers communities may not isolate themselves and set up their own standards of right and wrong. "If the foot shall say, because I am not the hand, I am not of the body; is it therefore not of the body?"

President's Message

President Wilson's message to the farmers' conference at the University of Illinois last week must be taken as a direct message to all of the farmers of the country. We have waited long for some official recognition of the farmers' problems in meeting the demands of the war program. We have waited in vain except for such pronouncements as have come from the Department of Agriculture and the Food Administration. These have so persistently urged greater production with so little consideration of the means by which greater crops could be grown as to justify the conclusion that the government officials do not know the seriousness of the farmers' situation, or that they are acting on the blind hope that farmers will meet every demand regardless of hindrances and handicaps. And this conclusion cannot be greatly changed after a careful reading of the message.

The President gives full credit for the unprecedented production of the past year and adds that this achievement must not only be repeated, but must be greatly exceeded. He acknowledged that this would mean "not only labor but serious sacrifice, the painstaking application of every bit of scientific knowledge" and "the utmost economy, even to the point where the pinch comes". He asks the farmers to give the kind of sacrifice and concentration "that is involved in the field of battle itself". He fully justifies this call with a re-statement of the principles for which we are fighting and a call to duty that must appeal to every citizen in every line of work; and he expresses full confidence that the farmers will do their important part.

There can be no doubting the sincerity or the urgency of the message coming from the Chief Executive to the most important industry in the successful prosecution of the war. But there is a woeful and disheartening lack of understanding of the serious economic factors that will prevent full response to his demands. There are at least four factors that will limit production of farm crops next year, regardless of the best efforts of the farmers. Shortage of labor is perhaps first and most far-reaching. Shortage of supplies and high prices of fertilizers, seeds and farm machinery is second. Inability of farmers to finance emergency operations is a third. And the assurance that the crop grown will pay the cost of production and justify the necessary expense of maximum production is an important fourth. None of these are satisfactorily discussed by the President. All are vital factors now and all appear to be beyond the ability of individual farmers or communities to handle for themselves. They are factors that should have government consideration as vigorous and as serious as is being given to ship building or transportation. Yet they are passed over in such general terms as to indicate that they have been but lightly considered.

As to labor, the President assures us that "the best agencies of the Nation are addressing themselves to the task of solving the problem so far as it is possible to solve it". So far as 1918 is concerned, the problem should be solved now. Farmers can seed only what they know they can harvest. They seeded last year on the promise of help at harvest time. A heart-breaking harvest and vast quantities of products going to waste because of lack of help last year will prevent full seeding this spring. The President says that the War Department will interfere with the farm labor supply as little as possible and that under the new draft regulations farm labor will be "very much less seriously drawn upon than it was under the first and initial draft". This would be very satisfactory if we were but approaching a shortage, but if food is the first essential to the winning of the war, as we all know it is, then the problem is not one of "lessening the drain on farm labor" but one of filling the existing shortage that now stands in the way of full production.

The government activity in supply of needed materials is as lightly touched upon. The President assures us that the government is doing its utmost to assist the farmers in securing a full supply of ferilizers. If the 100,000 tons of nitrate of soda purchased and yet to be distributed at a liberal price and the long delayed promise of manufactured nitrates represents the government's utmost effort, we must be satisfied. But these efforts poorly compare with the government activity in building ships, whose important function will be to transport the crops that the farmers are expected to produce. We are further told that the Department of Agricultore is actively assisting in locating, safeguarding and securing at cost an adequate supply of sound seed; that it has $2,500,000 available for such purpose and is asking for six million dollars more. Let hs hope that these seeds are located in time and delivered to the farmers for the planting season, but with the Department's record for speed as a distributing agency, Congress will need to act quickly if any part of the requested appropriation is to be used for 1918 production.

The farm loan banking system is recommended as a remedy for the farmers' credit ills, "giving the farmers access to the great lendable capital of the country". The farm loan system has been a great help to the farmers. It has provided a means of securing money at reasonable rates for permanent improvements on long term loans. It has apparently influenced bankers to give more liberal terms to farm borrowers for other forms of loans. But as a quick-acting emergency measure, such as is needed now, it is of little value. It will be a negligible factor in influencing crop production in 1918.

As to the fixing of prices, the President declares that the impression that the Government seeks to fix the price of foodstuffs while not seeking to fix other prices which determine the expenses of the farmer, is a mistaken one. He points out that prices have been successfully regulated on many fundamental materials underlying all of the industries, and predicts that further legislation will further prevent profiteering. He assures us that the interests of the farmers have been kept in mind in all price-fixing and reminds us (very justly and reasonably) that mankind as well as the farmer must be served, and everything takes on the rigid aspect of duty in time of war. There are too many generalities in his discussion of this point to be most satisfying to farmers. There is much difference of opinion among producers on the theory of price fixing. We believe that there is general confidence in the sincerity and purpose of the Food Administration. But there is at least basis for the belief that markets have been regulated with too delicate a regard for the rights and privileges of the distributing agencies. Price regulation has not cut down the spread between producers' and consumers' prices as both classes had reason to expect. Regulation at the cost of production, even of a few commodities, appears like poor business in a time when the greatest need of our country, of its people and its allies, is more and more food.

On these four most important factors, the President's message leaves much to be desired. They are the important limiting factors for the crop of 1918, which promises to be fully as important as men, munitions, ships or the railroads in deciding the war. We believe that they should receive equal recognition with these industries in the war councils at Washington. We believe that the President's message indicates that they are not fully considered, and that the great problem of "feeding the world" is permitted to rest is the weakest link in our chain of offense and defense. We believe that it indicates a complacence on the part of the Department of Agriculture, which should be the President's chief advisor on the subject, that is not justified by conditions in the field. We have every confidence in the willingness and ability of the farmers to do their best. But there is a limit at which human effort, supported by the most fervent and enthusiastic patriotism, must stop. For the sake of the great principles for which we are fighting, for the men who are giving their all in the trenches, for humanity everywhere that is depending upon the American farmers in the coming cropping season, and for the safety of liberty and democracy over the world, may the farmers meet the greatest demands without reaching that limit.

The greatest incentive and the most hopeful note of the message are contained in these words of the President: "You will realize, as I think statesmen on both sides of the water realize, that the culminating crisis of the struggle has come, and that the achievements of this year on the one side or the other must determine the issue." These words from the President put the problem squarely before us. It is do or die in 1918, with the greatest dependence upon the doing of the farmers

HARRISBURG NOTES

Priority and the Draft.—Pennsylvania state officials have brought to attention of the United States government the two vital questions confronting Pennsylvania agriculture, and while headway has been made in one there is no assurance of much being done in the other. The national transportation authorities have been asked to give priority to shipments of farm machinery, especially tractors, for this state's farms; fertilizers and ingredients; seed corn and cattle feeding stuffs and arrangements have been made that all except machinery shall be given preference, altho in the present state of congestion of freight that is not as valuable a concession as it seems. There are hopes that the tractors and machinery may also be placed on the preferred list and action may be looked for next week. Secretary of Agriculture Patton says that the number of tractors sold is a surprise and he is making efforts to get notes on sales so that the proposition of giving them right of way over other machinery can be presented again to the government. The other question is labor. In addition to working to have tractors put on the preferred list the state authorities are asking some more definite ruling regarding drafted men. The request may even be put up to have some of the men accustomed to farm work given leaves from cantonments if the government is not ready to send them abroad at the time they are most needed on farms. The completion of the classification by occupations of the men in the draft is to be followed by a concerted movement on Washington to have drafted men kept on the farm as long as possible. The urgency of the situation as regards Pennsylvania is now being presented, it being set forth that this state is not only a coal producer and arsenal for munitions, but a big link in transportation and also high up in agriculture and that raising of home food supplies is vital.

The Farm Training Camps.—Funds have been provided for establishment of over 100 training camps for boys to be taught to work on the farm. It is the intention to utilize the labor of the high school boys. These camps, which were tried out in Pittsburgh, Philadelphia and other districts, will be established at various points. The boys will be mobilized, as has been done in Adams and other fruit growing counties, and placed under care of men accustomed to farming and asked to do their share The details of the plan will soon be announced by state committee of Public Safety. There are many farmers who have to accustom themselves to having the boys work for them and with them, just as there will be some city people shocked to see women in the fields of Pennsylvania this year. It is the hope of the state employment authorities, who have been co-operating with the Public Safety Committee, to work out a plan whereby labor can be supplied to farmers on the same plan that men are now being sent to shipbuilding and other plants. One thing has been done by this joint control and that has been elimination of the labor "scout" who gobbled up men for the big industries. It is possible that a plan whereby men would get leaves from industries to work on farms or be required to do that form of work if fitted for it may be considered.

Abnormal Conditions. — Weather conditions are generally reported to the State Department of Agriculture from all over the state to be abnormal beyond recollection of even that fanciful character, "the oldest inhabitant", and life in the country is more isolated than ever. The disorganization of coal distribution, traceable to failure to unload cars and lack of motive power, has been increased by weather conditions, while many activities have been curtailed. In some sections of the state four or five feet of snow are reported, the fields generally being covered by more snow than ever known. Live stock, according to state reports, has wintered well in spite of conditions and the price of feed, but the loss in poultry is high, while game has almost disappeared from some sections.

State to Make Sure.—The State Defense Commission has placed half a million dollars at the disposal of the state highway department for road maintenance. The idea is so that if the $2,000,000 which it is expected to realize from automobile licenses for 1918 by March 1 is exhausted in keeping roads open and repaired for emergency use that there will be more cash available. As a matter of fact, the half million dollars will not be handed right over to the highway department and there is no reason why it should. Under ordinary conditions $2,000,000 ought to be enough to keep roads open and to do a large measure of repair work after snows disappear, while the left over from 1917 and the $1,500,000 expected from licenses after March ought to care for later repairs. If the theory is to have a big force of men employed before the May primary and make a shovel and a vote go hand in hand there will probably be a howl. However, by voting the $500,000 the state makes sure that it will have money for maintenance and repair of roads in the fall no matter who is nominated.

To Close Counties. — A general movement for petitioning of the state game commission for closing of counties to hunting of ruffed grouse is under way in the state. The idea is to increase this great game bird as was done with the wild turkeys a few years ago. If the state is closed by petition of 200 in each county a year will be saved as the legislature does not meet until 1919. In event of closing, grouse will be bought and distributed. Over a dozen counties are now closed to grouse shooting.—Hamilton, Harrisburg, February 4.

NEW YORK LETTER

New Milk Prices Announced.—The Federal Milk Commission's new price schedule, as approved by Mr. Hoover, will be a general price to farmers in the eastern or New York City zone. Beginning February 1, the wholesale price will be $3.34 per 100 pounds of milk testing 3 percent butterfat. For each tenth percent higher fat content an extra 4 cents per 100 pounds will be added. The new price is 9 cents less than the January price, or the same as the November price. The retail price for New York City has been ordered cut by the commission from 17 to 16½ cents a quart for Grade "A" milk, and from 15 to 14½ cents for Grade "B". Grade B dipped milk at stores remains unchanged at 11 cents. A further cut in retail prices is expected next month to obtain in March. Pints of Grade "A" milk will sell for 9 cents instead of 10 cents as formerly. The change in prices is a result of a comprehensive hearing of the expense of both producing and distributing milk, raising the price to the farmers, who were killing their herds because there was no profit in producing milk, and reducing the price obtained by dealers who were found to be peddling milk at unnecessary expense and profits. The commission is of the opinion that there is little danger in loose milk sold under the sanitary conditions prevailing in its handling.

To Standardize Farm Tractors.—A movement was started in Syracuse a few weeks ago to standardize farm tractors. A conference on the subject was held in Albany on Wednesday and arrangements were made to bring the matter before the federal government. The conference was attended by leading farm organizations, colleges and Farm Bureaus of the state. The dean of the agricultural college of Syracuse says that the mechanical engineers of the college and of the three great tractor-making companies of Syracuse and others are equal to the task of developing a small farm tractor adapted to hillside conditions and free from all objections heretofore indicated. The college has made a study of 146 types of tractors, and has compiled a list of 16 conclusions that the various types suggest a very exhaustive discussion which should enable manufacturers to steer clear of the most common objections.

Shortage of Seed a Mistake.—The expected scarcity of seed corn in the vicinity of Auburn has failed to develop. It was thought the late maturity and exceeding cold had injured the germinating qualities, but the Farm Bureau has tested much of the comparatively large store of seed and found it unexpectedly good in growing qualities. This is welcome news to farmers over a wide territory.

To Ask for Early Close of Schools. —Representative Mott of Oswego has had so many requests from the farmers of his district that he has consented to ask Dr. Finley, state commissioner of education, to close the public schools of the state, particularly the high schools, early so that parents may have the help of their children in putting in crops.

The Tuberculosis Menace.—At the state convention of veterinarians held in New York City January 25, Dr. Keernan, chief of the tuberculosis division of the bureau of animal industry at Washington, said that unless radical measures are promptly taken to eradicate the disease over 90 percent of the cattle and the swine of the country will be affected with the disease. The losses of the fiscal year ending June 1917 due to it was about $25,000,000, and of the 14,000,000 head slaughtered 3,397,000 were found to have the disease. Pasteurizing of milk that goes back to the farm to be fed to hogs will take care of the disease in those animals, he said. And a 60-day quarantine and severe tests are needed and are now taken to safe-guard herds shipped from one state to another.

State's Supply of Nitrate.—The government stock of nitrate of soda is being distributed thruout the state. The cost price is $75.50 per ton, plus freight and handling charges from port of arrival, making the total cost not far from $84 in some sections. Few farmers are buying, the purchasers being mostly truckers or market garden men.

State a Bean Producer.—According to federal authorities New York is third in bean production and fourth in acreage. The entire bean acreage in the United States was increased 70 percent last year, but the yield per acre was less, owing to the wet season.

Women To Be Factor. — In the Western New York fruit belt the women-help factor will be a big one this year. A few camps of college girls proved of such value last year in saving the crop that as many as possible will be engaged this year. —F.

NEW JERSEY FARM NOTES

In the Legislature.—A feature of the past week in the Legislature was a hearing given by the House Judiciary Committee on the two election reform bills, which have been introduced in the Legislature. One of them would limit the amount candidates for Governor and United States Senator can spend in their fights for nomination and election, and the other contemplates the use of school houses as polling places and the drafting of school teachers in all communities of 10,000 population or over for members of election boards.

School Boys for Farms.—The State Department of Education has adopted plans for carrying out the work begun last year of permitting school boys of the state to be given credit for work on farms as assistants to agriculturists during the coming spring and summer in the campaign to increase food production and to meet the farm labor shortage. Because of the importance of this work the State Department of Public Instruction will ask Governor Edge for a contribution from the emergency fund to hire a special assistant to direct this work, and to mobilize the boys under the Junior Industrial Army plan of last year. Only boys between 14 and 15 years of age will be enrolled.

To Name U. S. Senator.—New Jersey is particularly interested at this time in whom will be named United States Senator to succeed the late William Hughes, of Paterson, who has just died. With Joseph S. Frelinghuysen in the United States Senate the interests of the farmers of New Jersey are now well represented, and there is no need to fear that the new man may not be close to the agricultural interests, and consequently that the latter may be lacking in proper representation at Washing in the upper branch of Congress. Mr. Frelinghuysen has long been identified with farming interests of New Jersey, being at present a member of the State Board of Agriculture. Governor Edge will probably make a temporary appointment until the people of the state, next November, elect a man for the remainder of the unexpired term of Mr. Hughes, which ends March 4, 1919, and also choose a United States Senator for the six-year term, which begins on the same date.

Local Option Law.—Local optionists having placed on the statute books of the state the "wet" and "dry" measure, known as the local option law, and the companion measure to regulate saloons, plans are now under way to have New Jersey adopt the Federal Constitutional amendment providing for a total prohibition. Republican Leader Pierson has introduced in the House a proposed law which would permit a referendum on the question of ratifying the Constitutional amendment for national prohibition and also on woman suffrage. However, the Anti-Saloon League of New Jersey is opposing this proposition because it would not be binding in effect and would be really in the nature of a straw vote.

CORRECTION IN FERTILIZER ANALYSES

An error in report of the analyses of Mapes Manures, as published in our issues of January 26 and February 2 did not give full credit to the grades known as Top Dresser and Tobacco Manure. The average of the station analyses of these grades should have read: Top Dresser, Full Strength, 12.12 percent ammonia, against 12 percent guaranteed; 6.27 percent available phosphoric acid, against 5 percent guaranteed; 8.36 percent total phosphoric acid, against 8 percent guaranteed, and 2.25 percent potash against 1 percent guaranteed. The report of analyses of Tobacco Manure should have read 10.24 percent ammonia found against 10 percent guaranteed; 8.45 percent total phosphoric acid against 8 percent guaranteed and 1.82 percent potash against 1 percent guaranteed.

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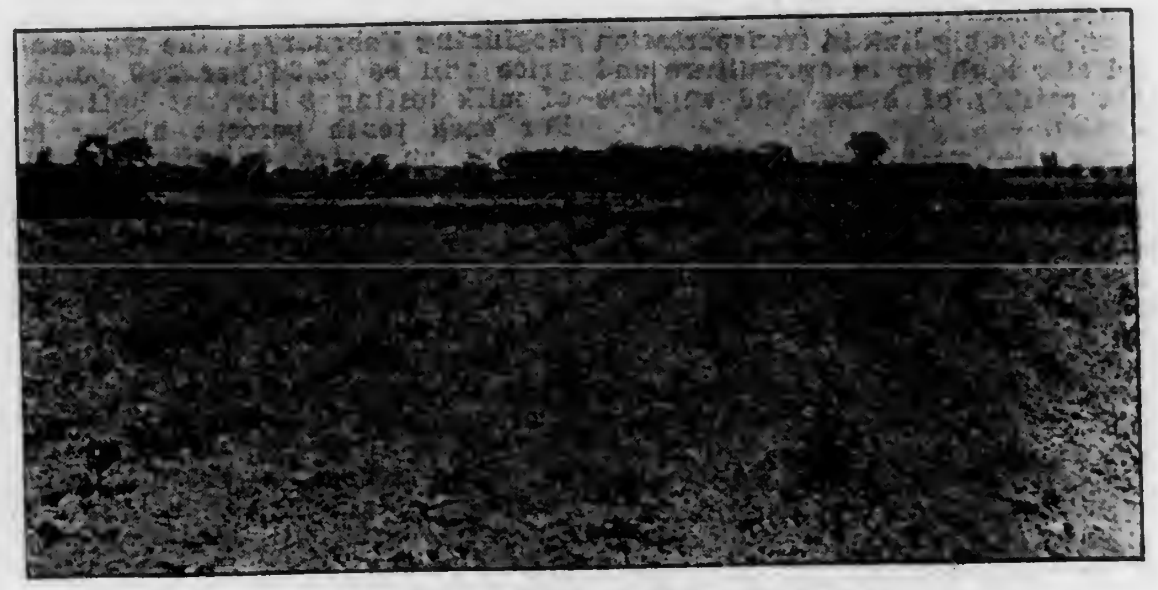
Penna. Horticulturists Meet

Report by Dr. J. P. Stewart, State College

The 55th annual meeting of the State Horticultural Association of Pennsylvania was held at Harrisburg on January 22nd to 24th. The writer has attended the meetings of this organization for eleven years, and the present meeting was one of the "livest" and best during that period. The attendance was good, and the interest was well maintained thruout. Most of the growers there had evidently a fairly satisfactory season, as nobody seemed to be complaining. They were not without their troubles, however, as the shortage of labor, and high prices of spraying materials and fertilizers were facing them as well as others. But there was no disposition to quit. They were anxious to learn the best ways of meeting the new conditions; and were always ready to offer suggestions and swap experiences. Altogether, the meetings were pervaded by a feeling of quiet optimism and earnestness, which bodes well for the coming years.

Insect Control

The session was opened by the address of the President, W. J. Lewis, who emphasized the need of standing by the orchards and not allowing them to decline on account of extra difficulties now. He also called for wider and more loyal support for the association, which undoubtedly should have a far larger membership than it now has. He was followed by Prof. Hadley, the extension entomologist of the N. J. State Experiment Station, who outlined the latest and best methods of controlling the aphis and redbugs, which were so prevalent in many parts of the state last year. He emphasized the need of the proper kind of materials for these insects—nicotine being preferred—the proper timing of the applications, and the need of extra attention to the tips and buds in applying the sprays.



Crop Failure Due to Poor Drainage

Orchard Care

After him came a paper on Peach Problems by Joseph Barton, a successful grower from Moorestown, N. J. He said in part that growers must not only take care of current production, but decide what to do about more planting. The good prices of the year just past do not justify "plunging". All produce has been high and the general peach crop relatively short. Peaches were really lower than most other produce, and the lean years of 1915 and 1916 must not be forgotten. Also, every ounce of effort should be made immediately productive, so that normal plantings, with a proper system of intercropping, are all that should be undertaken at present.

The proper intercrops to use is determined chiefly by the local conditions. For the grower near large markets, with a vegetable soil, the following system, largely used in Jersey, is excellent. First year, plant peas in March, in rows 5 feet apart and 2½ feet from the trees. In April, plant cantaloupes in the tree row and between the rows of peas. Cultivate once or twice before peas fall over; harvest the peas and plow the vines under with a one-horse plow. About June 15th, set a tomato plant between each hill of cantaloupes in the same row, so hills will be about 4 feet apart. Any tomatoes which fail to ripen before frost can be ripened under glass. When cultivating cantaloupes last time, sow a winter cover of vetch, crimson clover, and turnips. You will get some turnips if fall is wet enough; otherwise, not much is lost. On lighter soils, watermelons can be worked into the combination, and on heavier soils, cucumbers can be used. Peas followed by late tomatoes is a more simple system and still a very good one.

He still prefers lime-sulphur solution for controlling scale and leaf curl, and if deferred until just before buds start, can often prevent an outbreak of brown rot in the blossoms and twigs. Dusting has proved practical against peach scab and may be useful in the summer sprays, where the acreage is large enough to warrant the purchase of the extra outfit required

These papers were followed by the "Question Box" which was conducted by A. F. Mason, of the Pa. College Extension staff. The growers participated freely in the discussions, and a part of the questions were considered at the close of each session.

Curb Markets

"The Curb Market" was discussed by J. S Critchfield, of the Public Safety Committee of Pennsylvania. This type of market has had a large development in Pennsylvania this past year, and a still larger development is likely next year. It is considered a "direct and invaluable weapon for use in winning the war", because it gets perishable food from the producer to the consumer with a minimum of cost and waste, and thus insures increased production, lowers prices to the consumer, lessens the demand on the staples, and saves food which otherwise would surely be lost.

The crub markets control the price naturally by bringing the producer and his customer into direct contact—the one controlling the supply, the other the demand Practically all producers who gave the curb market a fair trial in 1917 are expecting to go the limit on production this year. So long as the present conditions continue, of a demand in excess of supply, this attitude will remain. The effect upon the consumer was just as satisfactory, as the introduction of the curb market generally forced down prices of perishables all over the cities in which they were located. These markets were also valuable in conserving much food which would never have reached a consumer otherwise, as it was of such a grade or appearance as to have prevented its sale to a regular grocer or commission man.

The only failures of the curb markets in 1917 came where unnecessary restrictions were placed upon them. The many splendid successes were all obtained where they were admitted without special ordinance and with an absolute minimum of rules. It is "far better to use any spare energy in developing a wide-open opportunity than in putting fences around it."

Pest Suppression

New Problems of Best Suppression was outlined by Doctor Sanders, the State Economic Zoologist; and Apple Production in Virginia, and Packing and Marketing the Apple Crop were clearly and effectively described by Senator S. L. Lupton, one of the largest apple growers of that state. The "Operation of the Washington Apple Grading and Packing Law" was presented by C. D. Carey, of North Yakima, Washington. This law is very thoro in its provisions, is effectively inspected and enforced partly at the growers' own expense, and yet is welcomed by the grower because the official stamp practically frees him from complaints and rejections of his fruit at its destination and also secures an advance of 3 or 4 cents a box in price, which more than covers the personal cost of the inspection.

Home Markets

In his discussion of Opportunities in Pennsylvania Horticulture, Dr. Fletcher, of State College, pointed out that Pennsylvania is fast becoming urban. This furnishes an abundance of excellent markets right at home. The soil and climate are as good as in New York or any of the neighboring states, and the transportation by rail is perhaps superior. The home orchard is passing on account of age, high heading, and not being an economic unit. The new orchards will be commercial, cared for by fruit-growers instead of farmers, and will be located near the centers of consumption.

In a follow-up talk by G. W. Cochran, the general contour, winter temperatures, and frost-free periods of the different parts of the state were mapped out, and their influence on the possibilities of fruit-growing in the various sections were indicated. The results of his studies have shown a very high rank for the Cumberland Valley section for deciduous fruit productions of all kinds.

Fertilizers

An illustrated talk on the efficient use of fertilizers in orchards was given by the writer, who also presented the report of the general fruit committee earlier in the meeting. The effect of fertilization with nitrogen, phosphorus, potash, lime and manure, singly and in various combinations, was shown in the talk, and the great importance of an actual test in the orchard was pointed out.

Fire Blight

The next talk was an illumination

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DROPS SEED
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will help you wonderfully to reduce the high cost of living. It is read by tens of thousands, professionals as well as amateurs, as an authoritative guide to all garden work, both for Vegetables and Flowers

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(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable easy-working pump placed *outside* the barrel—prevents rusting—all parts easy to reach. 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for our free booklet.

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of our No. 1 Auto-Spray and grip the auto-pop shut-off with your thumb; the Auto-Spray will do the rest—no clogging, and no waste of solution.

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outfits are made in 40 styles, operated by hand, traction and gasoline. Used by State Experiment Stations and by over 400,000 farmers, gardeners, poultrymen and home owners.

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Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

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of the old subject of Fire Blight by E. L. Nixon, extension pathologist of State College. The term illumination is used advisedly, because Mr. Nixon has been doing some real investigation on this disease, and he now has some definite light to shed on it. His findings are likely to revolutionize both the methods of control for this disease and the kinds of stock used in propagating the apple.

Dust vs. Spray

Dusting received considerable attention at the meeting, and a roundtable was conducted on it by Mr. Hadley. The time-saving feature which it offers seems to appeal to many growers, and it may have a place for emergency work in the large orchards, and especially for some of the summer applications on the peach. It can not take the place of the wet sprays entirely, however, and its cost per tree is generally considerably higher thru the wet applications, where accurate comparisons are made. It is therefore hardly advisable as yet unless one can afford the cost of the extra outfit.

Tractors

Tractors received much attention at the meeting. Many kinds were on display, and a big talk was given on them by Prof. R. U. Blasingame, of State College. He is also conducting a series of weekly courses in running them. These courses began in the college on Monday, Jan. 28, and will continue as long as the demand lasts. They are open to anyone in Pennsylvania without any charge for instruction. This is done to help Pennsylvania boost her food production this year, and thus do one more bit toward winning the war.

New Officers

F. H. Fassett, of Meshoppen, was elected President of the Association for the following year, and Edwin W. Thomas, of King-of-Prussia, and H. F. Hershey, of Gettysburg, were reelected Treasurer and Secretary respectively. The official report of the meeting should be unusually valuable this year, and is expected to be available soon. It is sent only to members. Membership is securable simply by sending your name and fee of $2 for annual, or $20 for life membership, to the Secretary.

The vegetable growers also had a full program on the same days. It will be fully reported in the same annual report which covers the fruit. Resolutions were passed: (1) Favoring national legislation on inspection on apple grades and packing; (2) favoring the Week's bill concerning the importation of pests on nursery stock and other plant materials, and (3) favoring the construction of a room or building in the development of the new Capitol Park, which will be suitable to house a fruit-products show.

ESTABLISHING A CHERRY ORCHARD

With good culture I have learned by experience that it takes at least six years to bring a cherry orchard into profitable bearing. I planted my trees in a rich clay loam and they have been well fertilized and given good culture. I do not see how they could have been safely forced to have made a larger growth. They bore small crops at four and five years old, and last year at five years the average trees about half covered the 18-foot space between them. The main variety is Montmorency, but there are some Early Richmonds and English Morrellos which are the earliest and the latest sour cherries. These were planted to extend the season of ripening.

Before selecting the varieties for planting I visited the cherry growing sections in New York, and decided that the Montmorency was the best sour cherry I saw. It was larger when well grown, handsome because of its deep red color, and when fully ripe not too sour to enjoy eating out of hand. I think the Morrelos I saw bore larger crops according to the bearing surface of the trees, but they were smaller, and seemed more desirable to sell to canning factories than for any other purpose. The Montmorency seemed better for home uses. For market, I have found that a cherry which ripens as soon as the strawberry season is over is the best for market. Then is the time people look for cherries and the grower who has them gets the most customers.

I purchase my trees from a nearby nurseryman who sells direct to the planter at wholesale prices. I bought one-year-old and two-year-old trees At five years old, I can see but little difference in the size. The one-year-old costs a little less, and are much easier to plant; in fact, it requires but little digging when a deep trench is made with a heavy plow and two horses. The ground was made very mellow by deep harrowing, and the trees were set early in the spring 18 feet apart each way. The space between the trees was set to Marshall, Wm. Belt, and Brandywine strawberries, about two feet apart each way, and were kept strictly in hills. The cultivation was mostly done with a horse and cultivator, going both ways between the trees. After taking off four crops of strawberries, the land was plowed under in July, and at once set to cabbage. The next year it was set to strawberries, in which it will be kept until the trees occupy the land. I will narrow down the section of strawberries as the trees spread over them. One year, the sales of berries was at the rate of $700 per acre. I estimate the strawberries have paid for land worth $300 per acre two or three times. For two or three years to come I will take off two profitable crops from the land, and then it will be given up to the trees, and a thoro system of cultivation and cover crops will be practiced.

The fertilizer used on the strawberries in the young cherry orchard is the scratching litter from a 1000-hen poultry plant. The straw used in the hennery, after it has been worked up fine by the hens, with what poultry droppings there is on the floor, is used to mulch the strawberries. I plan to amend the poultry manure with acid phosphate which is scattered over the dropping boards and spread over the floor before drawing out the straw litter. When I can buy wood ashes to better balance this fertilizer I do so, as the poultry manure is so rich in nitrogen that, in a wet season, it causes too large a growth of strawberry plants which do not fruit well. The cherry trees do not show any bad effects of such liberal applications of poultry manure.

The cherry troubles which one should try to prevent are leaf blight and borers. When the cherry orchard comes to a bearing age, it should be systematically sprayed with fungiide to prevent the blighting of the eaves, especially late in the summer.

Community Cattle Brseding

The Lesson of Pennsylvania's Record Breaders

By Prof. FRED RASMUSSEN, PENNA.

More and better live stock is a universal slogan today in nearly every corner of the United States. More and better live stock means a greater utilization and a more efficient utilization of straws, fodders, grains and pasture lands. More and better live stock will mean increased production of food, increased fertility of the soil, and increased yearly profit to the farmer. Increased fertility of the soil is not only a valuable asset to the owner of the farm, but it is a National asset. It is worth while preaching the gospel of good live stock; it is worth while listening to that gospel, but greater still is the actual work of selecting, breeding, feeding, and of improving the herds and flocks, by properly directed efforts.

"It is a great improvement" is one of the most common phrases of the twentieth century. Invention has followed invention in farm machinery, in labor saving devices, and in the industries. The inventions of one man have made improvements benefitting in a very short time the whole world. There will be no new invention for a short-cut to a rapid improvement in our live stock. The fundamental principles for stock improvement were established years ago and expressed in the simple statement that "like begets like". Of course it does; it looks so simple and self evident that it is hardly worth giving a second thought.

Wheelbarrow to Open Swinging Doors

It is not the lack of knowledge that has retarded the improvement in live stock, but the lack of application of fundamental principles of the known laws of heredity by too many farmers. "Like begets like" is getting a second thought thruout the country today, in the great campaign for live stock improvement which is going on. The impetus to this campaign comes, first, thru the need for greater economy in converting the raw materials from the farms into human food to meet the very rapid increase in price of land, labor and materials; and secondly the great demand for live stock and live stock products brought about by the World war.

Pennsylvania Cows

Do not get the impression that progress has not been made. Some breeders have been successful far beyond the expectations of man. A few years ago no one would have ventured the thought that a cow, think of it, just one single cow, would give 31,246 pounds of milk in a year. Only a few years ago it would take 15 average cows to give this amount of milk! No one thought that a cow in one year would produce 1,205 pounds of butterfat. Unbelievable, and the end is not yet! The breeders of the State of Pennsylvania have done their share in making dairy history.

The Jersey cow, Passport, owned by J. C. Sibley, Venango Co., Pa., produced 19,744 pounds of milk, and 837 pounds of fat, which is the world's record production of milk for all Jerseys.

Lucky Farce, owned by The International Correspondence Schools Demonstration Farm, Lackawanna Co., Pa., produced 12,260 pounds of milk, and 636 pounds of fat, which is the world's record for Jerseys under two years of age.

The Guernsey cow, May Rilma, owned by E. B. Cassatt, Chester Co., Pa., produced 19,673 pounds of milk and 1,073 pounds of fat, which was the world's record for fat of all dairy breeds at the time this record was made.

The Ayrshire cow, Garclaugh May Mischief, owned by Percival Roberts, Jr., Montgomery Co., Pa., produced 25,329 pounds of milk and 899 pounds of fat, which is the world's record of milk for all Ayrshires.

The Holstein cow, Keystone Beauty Plum Johanna, owned by George E. Stevenson & Sons, Lackawanna Co., Pa., produced 25,787 pounds of milk and 1,035 pounds of fat, which was the world's record for fat of Holsteins four and one-half years old, until one month ago.

The Shorthorn cow, Rose of Glenside, owned by L. D. May, Bradford Co., Pa., produced 18,075 pounds of milk and 625 pounds of fat, which is the world's record of fat and milk for all Shorthorn cattle.

Truly these are wonderful records, but let us not get confused and too amazed by these figures of great quantities of milk and fat, and overlook the great lesson to be derived. These figures of quantities of milk and butterfat are the undisputed evidence of the marvelous adaptability of the dairy cow and the readiness with which she responds to man's application of the principles of breeding, feeding and management. Few farmers can have the pleasure and honor of producing world record cows, yet these records should be an inspiration to the average dairy farmer, because it would not seem a difficult task by applying the same

Put Your Faith In A Kalamazoo

A silo is a *permanent* investment; therefore purchasing a silo is not a question of paying a few dollars more or a few dollars less, but of getting a silo that is *right*—in design, in material, in construction.

"Kalamazoo" is the answer. For more than twenty-seven years thousands of successful farmers in all parts of America have put their faith in

Kalamazoo TILE AND WOOD SILOS
"The World's Standard"

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They're built to meet the needs of farmers who know and appreciate the feeding va'ue of ensilage and know how a silo should be built to make and preserve ensilage *right*. Kalamazoo Silos excel in design, material and workmanship—combining every desirable feature a silo should have and embodying the knowledge acquired through long experience in silo building. You can't go wrong in buying a Kalamazoo.

GLAZED TILE SILOS—"Permanent as the Pyramids"—fire-proof, frost-proof, storm-proof, moisture-proof, acid-proof, decay-proof, vermin-proof. Galvanized reinforcing. Require no paint, no upkeep expense or repairs. First cost is the last cost. Easy to build—and once built your silo problem is solved *forever*.

WOOD STAVE SILOS—Your choice of four of the best time-defying woods. Kalamazoo Silos are manufactured complete ready to set up. Quickly and easily erected by inexperienced home labor. All Kalamazoo Silos, whether wood or tile, have the famous Kalamazoo Galvanized Steel Door Frames and continuous doors which are universally recognized as the best ever designed.

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Order a 100 lb. trial sack from your dealer. If he does not handle it write us his name and we will see that you are supplied. Fill out and mail us the coupon for free book on care and feeding of the calf.

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SCHUMACHER FEED has been the **"stand-by"** and standard of dairy stock feeds for so long, it needs no special endorsement as to its merit. It has to its credit more **World's Champion Long Distance Milk and Butter Records** (as the carbohydrate portion of the ration) than all other feeds combined.

Such cows as **Finderne Pride Johanna Rue,** a Holstein World's Champion Milk and Butter Cow; **Sophie 19th of Hood Farm,** a World's Champion Jersey; **Dolly Dimple,** a World's Champion Guernsey; **Auchenbrain Brown Kate 4th,** a World's Champion Ayrshire; **Jean Duluth Beauty,** a World's Champion Red Poll, and **22** other World's Champions made their records with SCHUMACHER as the base of the ration. Of these **27** World's Champion Records, over **20** were on *yearly production.*

SCHUMACHER FEED

The secret of the exceptional merit of SCHUMACHER is in the fact that it supplies the **energy, stamina, "back bone", vigor, "stand-up-ability"** so vitally necessary for **long milking periods—yearly production.**

It is without doubt the **most scientifically proportioned** carbohydrate ration on the market, due to its quality, **wide variety** and palatability of ingredients. Fed with BIG "Q" DAIRY RATION, our new **high protein** feed, you have a mixture which can be made suitable for any cow, in any lactation condition, which will produce results hard to beat.

For hogs, horses and cattle SCHUMACHER takes the place of any grain ration, being a balanced **ground** grain ration, suitable to feed with any kind of roughage. It saves the waste of feeding whole grain—produces much better results at less cost. A trial tells. At dealers. If yours can't supply you, write us.

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More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

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$17.95 Upward Sent on Trial *American* Cream SEPARATOR

Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: **a brand new, well made, easy running, easily cleaned, perfect skimming separator only $17.95. Skims warm or cold** *milk closely.* **Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—**

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Whether dairy is large or small, or if you have *separator* of any make *to exchange,* do not fail to get our great offer. Our richly illustrated catalog, *sent free* on request, is a most complete, elaborate and interesting book on cream separators. **Western orders filled from Western points:** Write today for catalog and see our big money saving proposition.

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Mention Pennsylvania Farmer when writing to advertisers.

RUNS EASY No Backache
weighs only 45 lbs.
EASILY CARRIED
SAWS DOWN TREES

9 CORDS IN 10 HOURS

BY ONE MAN. It's **KING OF THE WOODS.** Saves money and backache. Send for **FREE** catalog No. B106 showing low price and latest improvements. First order gets agency.
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Quaker City Feed Mills

Grind corn and cobs, feed, table meal and alfalfa. On the market 50 years. Hand and power. 23 styles. $4.80 to $40. **FREE TRIAL.** Write for catalog.
THE A. W. STRAUB CO
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Dealers — Write for contract.

principles of breeding, feeding and management to raise the average production of a dairy herd from 5,000 pounds to 7,000 pounds of milk a year, which in most cases will mean the difference between an unprofitable and a profitable business.

Pennsylvania's Average Cows

In spite of the world record cows in Pennsylvania, the average production of milk per cow in Pennsylvania, according to the 1910 census, is 441 gallons, or 3,793 pounds. The average production is probably slightly above this amount at the present time. The production per cow will vary on different farms and in different sections, depending upon the importance of the dairy in relation to other farm enterprises. There is not only room for improvement but great need for improvement of the dairy cow if the business is to be profitable. The question is, what are some of the obstacles to rapid improvement in the dairy, and how are they to be overcome?

The State of Pennsylvania has 191,194 farms reporting dairy cattle with an average of about five cows to the farm. The small herds in many sections probably are the greatest obstacle to rapid improvement and development of the dairy cow, as the small farmer alone can not afford to keep an expensive bull. Second, the lack of concentration of a particular breed in sections where the breed is best suited from the standpoint of climatic conditions, general adaptability of the breed, and the use to which the milk is put. Finally, in many sections the farm crops grown are not those which best meet the needs of milk production, and the grains purchased are not always those which will best fit in with the home-grown feed to produce milk most economically.

Note.—Prof. Rasmussen's next article will discuss in detail the organization and advantages of community breeders' association. It will be published in an early issue.—The Editors.

SOYBEANS WITH CORN

Since silage has become such a large factor in our feeding operations any crop that can be grown with corn to increase the nutritive value of the silage is a material gain. The soy bean is the best crop we have for this purpose. It adds protein to the silage, and as protein is one of the essential and most expensive elements of feeds the soybeans provide an economical and practical method of securing the protein in the silage.

Our experience in growing the soys with corn extends over three years, and for silage purposes it has become a permanent fixture on our farm. It is said to have a tendency to neutralize the acidity in the corn. I have found that if it is fairly well matured when ensiloed with corn it makes a sweet, palatable feed. I have never seen an animal that refused to eat it; even hogs are fond of it. One of our neighbors winters his brood sows on it, giving in addition a little salvage of burnt corn or wheat.

One of the chief points I would suggest in growing the soys with corn is to secure a variety that produces an abundance of foliage and which matures in about the same number of days as the corn. In this way a large yield of soys will be secured and they will be well enough matured to make the silage rich in both the seed and stems of soys. We have been growing the Hollybrook, which grows tree like, and when planted near the 10th of May with Reid's Yellow Dent corn is ready to be ensiloed in September. There are other varieties that are as well adapted to this purpose. Each user should investigate adaptability of varieties to his own section.

Some who have tried growing them with what is called silage corn say that a rank-growing silage corn tends to shut out the sunlight and stunt the growth of the soybeans later in the summer. They require sunlight to mature properly, and in commonly grown varieties of corn they reach up and produce a luxuriant growth. One cannot expect them to do well on worn soil, but they will produce a good crop anywhere corn will grow well. They make their rankest growth on fertile soil. One of our neighbors planted some with corn for silage on a newly cleared field, and they grew so rank and tall that they fell over and many of them were consequently missed by the binder. Usually tho, the corn tends to hold them up if they make a rank growth.

I have often been asked if the beans affect the growth or maturity of the corn. In fields grown side by side with and without soybeans I could see no material difference, altho experiments carried on on a nearby farm show the yield of corn was reduced between two and three bushels an acre. However, it seems that from two to four tons of extra feed produced by the soys would far outweigh the value of the reduced yield of three bushels of corn. We have never yet had a field of corn to fire where soys were grown with the corn, altho I do not mean that they will prevent firing for no doubt corn will fire as readily with as without them, but their presence does not appear to have a tendency to cause firing.

We plant a little larger acreage of the corn with the soybeans than will be needed to fill the silo, as the surplus can be utilized for hogging down and pasturing with cattle and sheep after the hogs have pretty well riddled it. Last year it took 9.88 acres to fill our 110-ton silo, but neither the corn nor soys were as heavy as in the two years prior. This was due partly to checking them instead of drilling as formerly and partly to the backward season; also some of it got a little too weedy to ensilo. A heavier yield can be secured by drilling, corn yielding from 45 to 60 bushels per acre making from 12 to 15 tons of silage per acre with the soybeans. After cutting his silage one of my neighbors went thru about an acre of soybeans and corn with a corn knife and cut off the vines from which he got seven bushels of fine seed, enough to plant next year, then turned in his hogs to clean up the rest with the corn. He figures that acre made him $35 in soybeans alone.—Justice.

"BLOOD WILL TELL"

The purebred animal is more and more appreciated. It has been a long hard drive to teach the importance of heredity in animals. The advantages of breeding good animals form an old topic, still not fully valued by the farmer because with him action talks, and he does not see the action until he has once owned and bred some real "blooded" stock. But it is noticeable that the breeder of purebred animals never returns to grade scrubs, or mongrel animals. It is not economic, efficient business, or

BIG MILK PRODUCER

Here is a **high protein** feed we brought out some time ago to meet a strong demand for a protein feed having as **wide a variety** of protein materials as our SCHUMACHER FEED has in carbohydrates.

Dairymen wanted a **"big milk producer"** which would **maintain heavy flow** over long periods, realizing that it's the cows which give **big yields month after month** that swell the profits.

BIG "Q" DAIRY RATION has more than made good the dairyman's highest expectation. It is a different protein mixture than they have ever had. Its protein materials **are right**—quality **the best** and in **a variety** which insures long time milk production and maximum daily yields.

THE BIG Q DAIRY RATION

combines in the most scientific and efficient degree, the five great essentials of a big producing, health maintaining, high protein ration. These are unusual **palatability—digestibility—variety—nutrition and bulk.** Its results in **greater** milk production, especially when fed with SCHUMACHER FEED, will be a surprise to you. Its ability to keep your cows "going strong" over long lactation periods will be even more gratifying.

Try it in the following suggested rations and let your own cows render the verdict.

General Herd Ration with Ensilage or Roots { 1 part SCHUMACHER FEED, 1 part BIG "Q" DAIRY RATION
To Fresh Cows with Green Feed { 2 parts SCHUMACHER FEED, 1 part BIG "Q" DAIRY RATION
To Dry Cows { 4 parts SCHUMACHER FEED, 1 part BIG "Q" DAIRY RATION
Test Ration { 1 part SCHUMACHER FEED, 2 parts BIG "Q" DAIRY RATION

(Increase Big "Q" Ration if cow can handle more protein without bad effects.)

Now is the time for biggest milk production—prices are good—profit will be greater if you feed liberally these two ideal feeds. At dealers; if yours can't supply you, write us.

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Better Food Sweeter Silage

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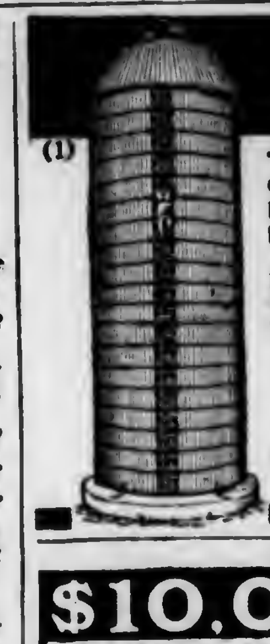

Hinge-Door Silo

(1)

The one silo forming a perfect ladder, steps 15 ins. apart, 7-in. clearance.
Convenience and safety in every-day use—no risk.
Doors always in place and easy to operate—no lost doors.
Lock operated by one hand closes door by easy sliding pressure. Any boy or girl can operate the Hinge-Door.
Keeps ensilage perfectly next to the door—no spoilt silage.
Prevents freezing in winter and drying-out in summer.
Will not sag, freeze in, bind nor stick. Always in place and workable.

THE MAN WHO CLIMBS THE SILO always votes for the Hinge-Door. IT'S SAFE AND EASY TO OPERATE.

Send for circular. Good Agents Wanted.

LANSING SILO COMPANY, LANSING, MICH.
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PEERLESS Fodder Shredder

If you have 3 H P. engine you can run this 14 inch machine successfully. Will pay for itself in one year's use. Will not pulverize blades and tops. Sold on 30 days free trial. Write for price and catalog.

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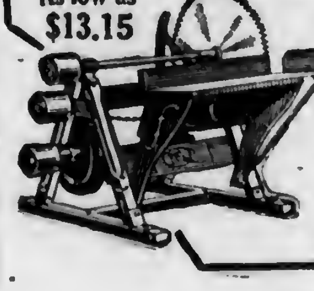

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is easy to operate. Only $13.15 saw made to which ripping table can be added. Guaranteed 1 year. Money refunded if not satisfactory. Send for catalog.

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and avoid higher prices and delayed shipments later. Globe silos have adjustable door frame with ladder combined. 5 ft. extension roof, window free.

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Dr. Hess Stock Tonic

25-lb. pail, $2.00; 100-lb. Drum, $6.50

Except in the far West, South and Canada.
Smaller packages in proportion.

Why Pay the Peddler Twice My Price?

Remember:

I have no peddler's wagon and horses expenses to pay; that's why I can sell you my Stock Tonic through a local dealer in your town—a man with whom you trade every week—at rock-bottom prices.

Condition Your Stock Drive Out the Worms

Spring is here—your animals have long been on dry feed and as grain, hay and fodder do not contain the laxatives so abundantly supplied by grass, they are apt to be out of fix.

Now's the time to feed Dr. Hess Stock Tonic to **your horses,** to condition them for spring work, so that when the sun shines they will be rid of their old coat, full of stamina and ready for business.

And don't overlook the spring **pig crop**—the money-makers. Start them off free from disease—free from worms, by a course of Dr. Hess Stock Tonic.

Your cows will be benefited by Dr. Hess Stock Tonic, and it will keep your **feeding cattle** right up on their appetites during the finishing period.

Excellent for **ewes** at lambing time.

Dr. Hess Stock Tonic contains laxatives to regulate the bowels, diuretics to remove dropsical swellings, tonics to improve the appetite and increase digestion, and vermifuges to expel worms.

There's a dealer in your town that will supply you with Dr. Hess Stock Tonic and guarantee it to do these things.

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry PAN-A-CE-A
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Dr. Hess Instant Louse Killer Kills Lice

More Beautiful -More Durable

and gives you better silage

Vitrified tile—the ideal silo material—lasts for generations. No upkeep cost—no painting—no hoops to tighten. Write for catalog.

Lansing Vitrified Tile Silo

—with the "ship lap" blocks. Ends overlap—adds strength. Notches in ends prevent mortar from slipping. Extended shoulders top and bottom—less mortar exposed—silage settles better. More beautiful wall—blocks all same shade. Steel hip roof—extra space in silo—steel chute—fireproof—continuous doorway. Write for Catalog and Prices.

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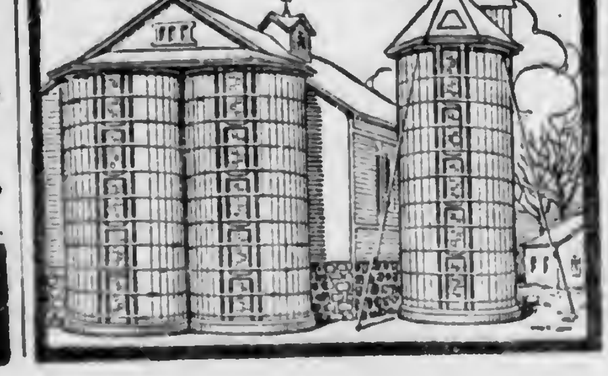
PAY BEST BY EVERY TEST—WRITE—EUREKA CHEMICAL CO. BALTO., MD.



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Every Economy Silo is equipped with the Storm Proof anchoring system that makes it *permanent*—it can't be blown down or warped out of shape. Ensilage from an Economy Silo is always fresh and green. The Patented continuous doorway makes the Silo absolutely air tight. The doors are perfect fitting and self-adjusting—no need of hammer or wrench. No metallic parts inside to rust or spoil the ensilage. Hoops form easy ladder. Built to last a lifetime—of long leaf Yellow Pine or Oregon Fir. Write for free catalog and we'll prove to you that money can't buy a better Silo. Also all sizes Water Tanks. "Economy" means quality plus. Factories at Frederick, Md., and Roanoke, Va. Write today.

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tasteful to him.

A few examples showing how "blood will tell" prove the importance and value to the farmer of scientific breeding. A Virginia Cow Testing Association composed of twenty-six farmers, owning 600 cows, of which 266 were tested for the entire year, showed that ten cows made a record of 10,000 pounds of milk or better as follows: Holstein, 10,296 pounds of milk, value $289.58, cost of feed, $91.27, profit above feed, $198.31. Holstein, 10,039 pounds of milk, value $255.40, cost of feed $85.18, profit above cost of feed, $170.22. Shorthorn, 10,092 pounds of milk, value $271.97, cost of feed, $110.44, profit above cost of feed, $161.53. Grade Holstein, 10,876 pounds of milk, value $286.38, cost of eed, $117.89, profit above cost of feed, feed $168.49. Holstein, 11,468 pounds of milk, value $298,25, cost of feed, profit above cost of feed, $193.17. Holstein, 11,499 pounds of milk, value $298.25, cost of feed, $105.08, profits above cost of feed, $168.49. Holstein, 11,468 pounds of milk, value $315.41, cost of feed, $100, profit above cost of feed, $215.42. Holstein, 10,150 pounds of milk, value $286.78, cost of feed, $90.40, profit above cost of feed, $196.38. Holstein, 11,815 pounds of milk, valued at $323.20, cost of feed, $115.02, profit above cost of feed, $208.18. Holstein, 12,569 pounds of milk, value $343.68, cost of feed, $87.52, profit above cost of feed, $256.16.

This list is remarkable and illustrates the point, showing only purebred and grades.

This same principle of heredity produces excellence in any stock. An off-color feather may be plucked from a cockerel and make him a winner in the show ring, but that feather will reappear sooner or later in his progeny. The egg basket, the milk pail, and the pork barrel are more easily and more readily filled by good stock. "Blood will tell."—John H. Voorhees.

DEHORN THE DAIRY HEIFER

There are two methods of dehorning dairy animals. One that is widely practiced is to allow the horns to grow until the animal is fairly mature and then cut them off with special dehorning clippers. This method removes the horn but it is a painful and bloody operation. The other method is to prevent the horns from developing.

The calves should be treated when they are from 5 to 10 days old, or when the horns are just beginning to show as small buttons and before they break thru the skin. The hair should be clipped away from this part of the head with a pair of shears. As soon as the skin is thus made visible it should be broken with a sharp instrument, directly over the center of the appearing horn. A deep cut should not be made. As soon as the skin is broken a stick of caustic potash should be rubbed on the horn until the skin is removed over an area slightly less than the size of a dime. The caustic can be purchased in small white sticks about the size of a pencil. One end should be wrapped with paper to protect the fingers. Rubbing should continue over the surface until it begins to turn white. Too much rubbing may give bad results. As soon as this is complete it is well to grease around the treated area with vaseline.

It is usually better to use the caustic in a dry form rather than to use it wet because when too much moisture is present it may run down into the calf's eyes and cause injury. The caustic should be kept in an air-tight bottle because in the presence of air it becomes wet and sticky and is difficult to handle. With a little experience one can perform this operation in about five minutes and horns will never develop. In case it is not properly done, short spurs will develop. These may be clipped off after a year or two with very little trouble or injury to the animal.—W. W. Swett, Mo. Col. of Agriculture.

New Milk Prices

Reduction for February

As a result of co-operation between the Federal Milk Commission for Philadelphia and the farmers and distributors, the prices of milk to the Philadelphia consumers, starting Feb. 4 and until further notice, will be 13 cents per quart and 7 cents per pint. Starting on the morning of Feb. 7, the farmer will receive 8¾ cents per quart for 4 percent milk. Prices above or below 4 percent will be as per the following schedule issued by the Interstate Milk Producers' Association:

Test per cent	Price per 100 lbs.	Price per quart
3.	3.63	7.9
3.1	3.67	8.0
3.2	3.71	8.05
3.3	3.75	8.1
3.4	3.79	8.2
3.5	3.83	8.3
3.6	3.87	8.4
3.7	3.91	8.5
3.8	3.95	8.6
3.9	3.99	8.7
4.	4.03	8.75
4.1	4.07	8.8
4.2	4.11	8.9
4.3	4.15	9.
4.4	4.19	9.1
4.5	4.23	9.2
4.6	4.27	9.3
4.7	4.31	9.4
4.8	4.35	9.45
4.9	4.39	9.5
5.	4.43	9.6

When milk is not tested the price is to be 8¾ cents per quart. The Federal Commission warns the city consumers that the best insurance they will have against a future increase in price will be to increase the consumption of milk and make it possible for producers to maintain their herds. The slaughter of cattle is the inevitable result of a loss to the farmers.

New York Prices

The Federal Milk Commission for the New York market reported that the price to farmers, beginning Feb. 1, would be $3.34 per cwt. for 3 percent milk with the usual variations for test. This price is the same as was paid for November milk. The price to the consumers will be 16½ cents per quart for Grade A milk and 14½ cents for Grade B milk.

AYRSHIRE HEIFERS TO PENNSYLVANIA STATE COLLEGE

Pennsylvania College of Agriculture has recently purchased two purebred Ayrshire heifers for its Dairy herd. These two animals were secured from Highland Farms, Montgomery Co., Pa., and are sired by the great herd bull, Substantial of Highland.

THIS Silo speaks for itself

AN INDIANA SILO is a safe, sure investment, not an experiment. It is strong and serviceable. It is easy to erect, easy to fill, easy to feed from, easy to pay for. It is good. Sixty thousand are now in use.

INDIANA SILO

Go to any Indiana Silo owner and look at his silo. Get inside of it. Note the joints; no iron to rust. Examine the wood; see how free it is from defects; how close-fitting it is. Then examine the silage against the wall. You will find it is as free from mold as in the center. When silage is made in the wood it is good silage. You and your hired man or neighbors can put up an Indiana Silo. No skilled labor required.

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$2.00 Brings you this SEPARATOR

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Biggest money-maker on the farm. Pays for itself quickly—that's why we sell the Maynard on these remarkably easy terms—$2.00 down and the rest in a year. The Maynard beats any cream separator at any price. Yet it sells for $30 to $40 less than others. Skims every drop of milk eight times. The wonderful new one-piece aluminum skimming device gets every ounce of butter fat. Frictionless shafts, ball bearings, easy to operate. One-piece supply tank, open cream spout, one-piece skimming device, easy to clean. Strong, rugged, honestly built, will last a lifetime.

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Any of the four sizes of the famous Maynard sent on 60 days' free trial. Guaranteed for life. Act now, and get the benefit of its saving all season.

Sent Free—Our 1918 Separator Plan—Write for your copy today. Read every word before you buy any kind of separator. It will open your eyes.

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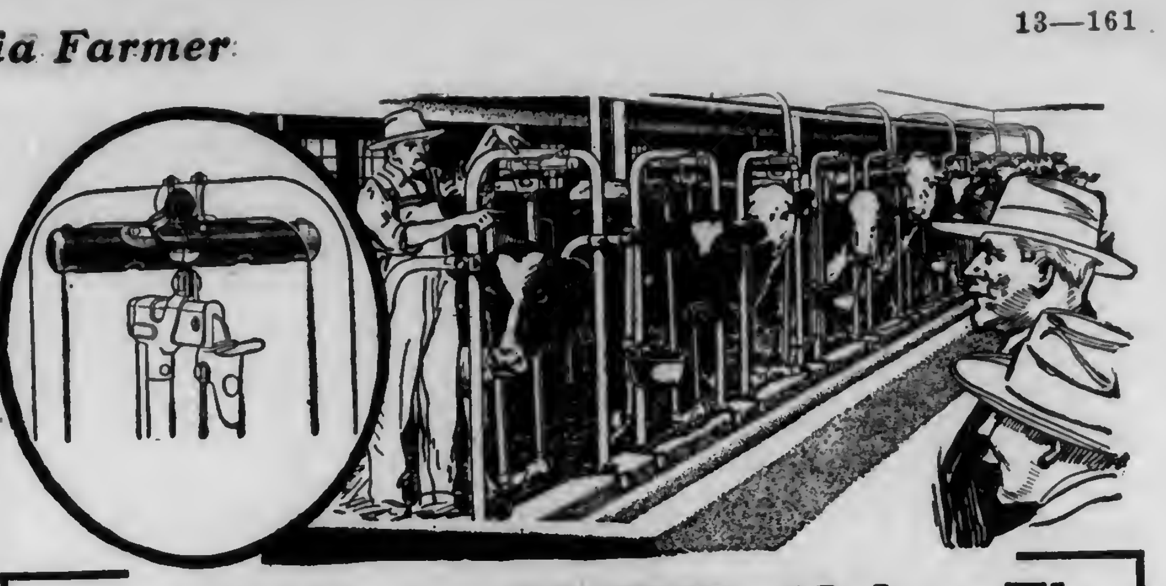

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Long Cows—short cows—and all sizes between—the STAR Adjuster makes STAR Steel Stalls **instantly** fit each animal. One simple turn of a lever lengthens or shortens the cow bed to suit. And the entire operation takes no longer than it does to lock a stanchion.

If desired, the Adjuster can be added to STAR Stalls at any time after they are in use. It is just one of the many exclusive STAR Features, found in no other make of equipment, that puts STAR Barn Equipment in a class by itself.

STAR Steel Stalls, Stanchions and Litter Carriers

STAR Stalls require no assembling—they are shipped ready to erect. The Unit System of construction permits your stalls to grow with your herd and the sanitary Arch gives strength. The Curb Clamp facilitates quick erection and the Adjuster is described above.

The giant STAR Stanchion is woodlined and strong. It is easily adjustable and carries the STAR Automatic Sure Stop. No matter what the needs in your barn, we have a STAR Litter and Feed Carrier to meet them. Double Lock Tubs—easy raising and lowering and Swinging Booms to keep the barn yard clear, are a few of the things that will interest you. Write for our big, finely illustrated catalogues.

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You can have 30 days' FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your $2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct-from-factory offer. Buy direct and save money. Write today.

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develops big, sturdy animals, economically. Digester Tankage (60% protein) builds bone and meat; Meat Meal is similar and costs less; Soluble Blood Flour is concentrated nourishment for cows, calves and sheep—a cure for scours. Steam Bone Meal builds up soils.

Write for free book about Scientific Stockraising.

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during the Winter months, when you possibly have some leisure moments on your hands, and sell our Fertilizers in your locality?

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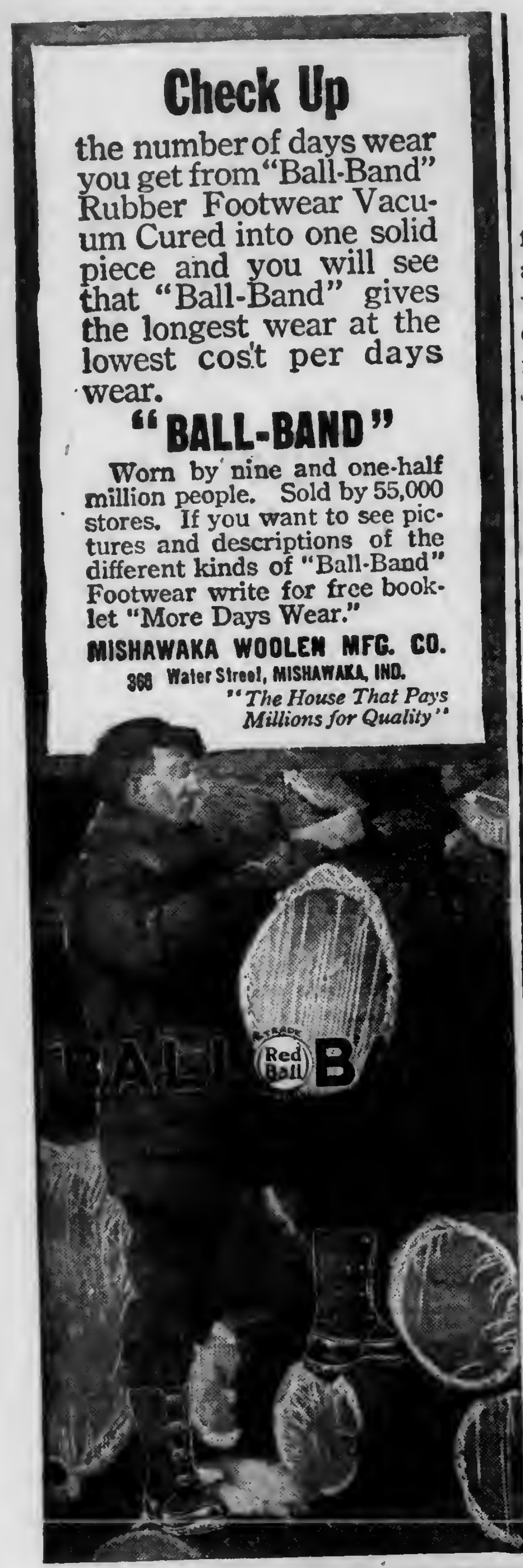
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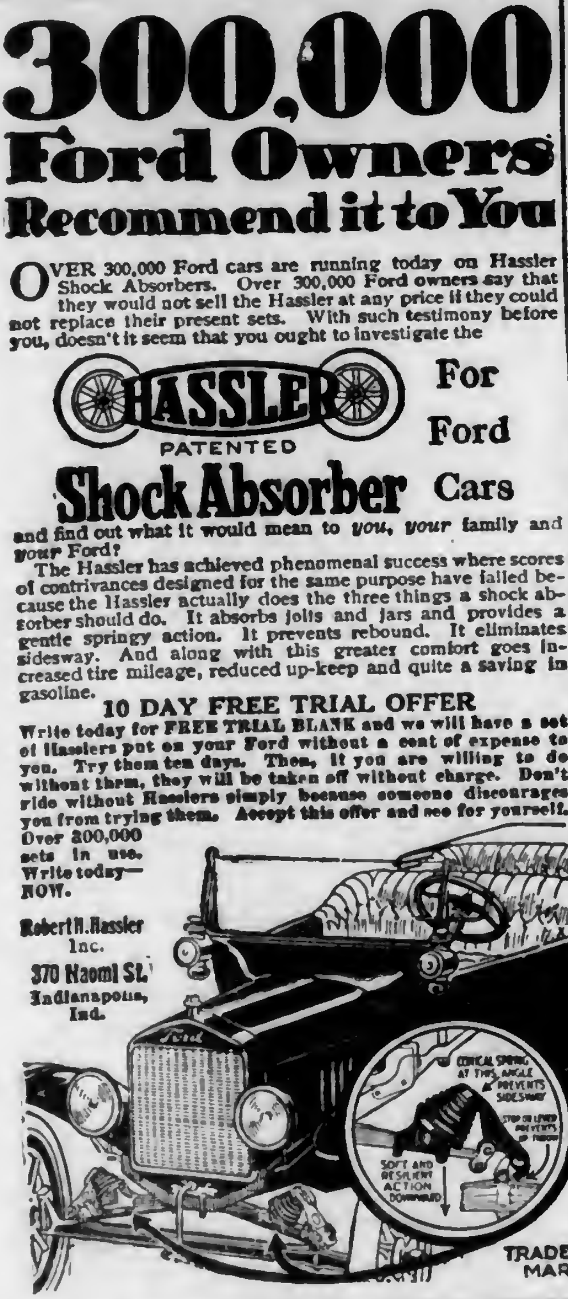
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Points on Turkey Raising

By Mrs. Cora B. Williams, Ohio

After successfully raising turkeys for several years I should like to give a few practical hints on the subject which may be of benefit to others, especially the beginner who has so much to learn in regard to handling this delicate fowl.

Turkeys are considered more difficult to raise than are other fowls, on account of their being more sensitive, when young, to the dampness and cold of springtime, and for this reason most people do not try to raise them at all.

Time to Hatch

If turkeys are not hatched before May 1st, it is less trouble to care for them and they are more likely to live, tho very sensitive to changes of weather and to quality and quantity of food at an early age. After the red develops the little poults become hardy, all their delicacy vanishes and they are quite able to care for themselves, and need but little attention until frosts cut off their supply of wild foodstuffs.

Attention to details is the only way to success and those who are not willing to give these necessary attentions had better not try to raise turkeys. Success or failure depends upon the care given during the first weeks. An important part of turkey raising is to know just what care the tiny poults need and when to give it.

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Start Small

It is best to start with a small flock. Never keep over winter more than three hens and a gobbler. I prefer keeping two hens and a gobbler, which makes enough for all practical purposes. Two hens will lay a large number of eggs and if rightly incubated and attended will result in a sufficient number of poults to handle successfully.

Breeding Stock

Be sure to get your gobbler and hens of different flocks in starting so that they will not be related. It is best to obtain the breeding stock in the fall, as prices are generally lower, and there is an opportunity to observe their health and vigor before the breeding season begins. The gobbler is always considered "half the flock". He should be well formed, having a full breast and long body.

Inbreeding is the cause of most of the troubles or diseases among turkeys. Most of the causes of blackhead can be traced to inbreeding. Fresh blood is imperative if vigorous poults are to be had. Inbreeding also is a frequent cause of blindness. Never keep a bird for breeding purposes that has had any disease.

Laying

To encourage turkey hens to lay where their eggs can be found, make several large roomy nests close by the yards, in rather hidden places, if possible. Boxes or barrels arranged so as to be covered with straw or brush will attract the turkeys. Where all of the eggs are to be hatched, chicken hens may be used, as they make very desirable mothers. The first settings may be given to them for the turkeys hens will lay a second setting, if broken up when broody. They should be allowed to hatch and raise the second setting.

Hatching

If the nests are not made directly on the ground, place sods or loose dirt in the bottom of nests. Eggs not set on the ground should be sprinkled with warm water a day or two before it is time for them to hatch. When the breeding stock is good, turkey eggs are fertile and hatch well. Lice must be guarded against. No poults can be raised where lice exist. The hens should be dusted with insect powder twice during incubation and also before she is placed with the poults in her coop. Common sulphur makes a good insect powder to use on the hens, and it is a good plan to sprinkle plenty of it on the dirt in the nest just beneath the nesting material.

A hen that is to set for four weeks should be well fed and cared for. Give her plenty of fresh water and exercise and a small feed of grain each day, but do not overfeed.

When a brood of little poults are first hatched they are very delicate and should not be taken from the nest for at least twelve hours. Warm, waterproof coops should be provided for them.

Housing

Large dry goods boxes, such as can be had for twenty-five cents, make good coops. Turn them on their sides and nail blocks on the corners to just keep them off the ground. Nail strips of boards over every crack. The top of the box is to form the front of the coop. Nail lath across the front so close together than the poults cannot crawl thru, and make a small door in one end of the box thru which to feed and water them. Sprinkle a large amount of dry sand on the floor of the box; this makes it easier to clean out, and is also better for the poults than are bare boards. Besides, sand is needed by them for perfect digestion. However, we do not depend upon the sand in bottom of coops for this, but feed on a clean, sanded board. A good yard of wire netting about two feet high and ten feet long should be made about the coop, being movable, and coops and yards must be kept clean.

When the poults are two or three days old take off a lath from front of coop and let them run out after the dew is off. If the nights are chilly or the weather should be damp, cover the coop well with a warm blanket. If the weather is very hot put the coops under trees, for the poults can not endure very hot sun.

Feeding Poults

Never give sloppy feed, and never feed more than will be eaten quickly. Overfeeding is harmful. Hard-boiled egg chopped is a good feed for the first few days. It is often necessary to teach them to eat by holding pieces of the feed between the fingers just above them. Unless this is done for the first few feeds some of the poults may die of starvation. Chip onion tops and dandelion leaves fine and mix with the feed as they are very fond of this. After feeding the egg four days, change to bread, soaked in sweet milk and squeezed dry. Dutch cheese is good for a change and they are very fond of it.

It is best to feed a very little at a time and feed frequently, say five or six times a day for the first two weeks, but do not feed unless they appear eager to eat. If onion tops are not available use some black pepper in the feed. Do not allow any interruptions in the first week's growth. Visit the coops at evenings to see that all the poults are hovered for they are sometimes so foolish as to remain a little distance from the mother and thus become chilled. If not confined to pens for a couple of weeks, they will become wet in wading the grass and a good wetting is almost certain to be the death of them. Plenty of pure water for drinking should be before them constantly but it must be placed so they will not tumble into it. Pint cups filled with clean small stones and kept filled with water does nicely.

After the poults are two weeks old they may be allowed to roam about the yards when the grass is dry and when they begin to "shoot the red" they may have full liberty, feeding well early morning and late evening so they will come home to roost. A shed, with comfortable roosts fixed therein, is a good place for poults to roost, and they should be encouraged to leave their coops and use these roosts as early as possible after reaching a hardy age and size.

Fattening

Do not begin fattening the turkeys for market until cool weather. Too much corn in warm weather will cause many of them to die of liver trouble and diarrhea. Begin feeding the first of November, lightly at first, gradually increasing until on full feed, then feed all they will eat for ten days or two weeks before putting them onto the market

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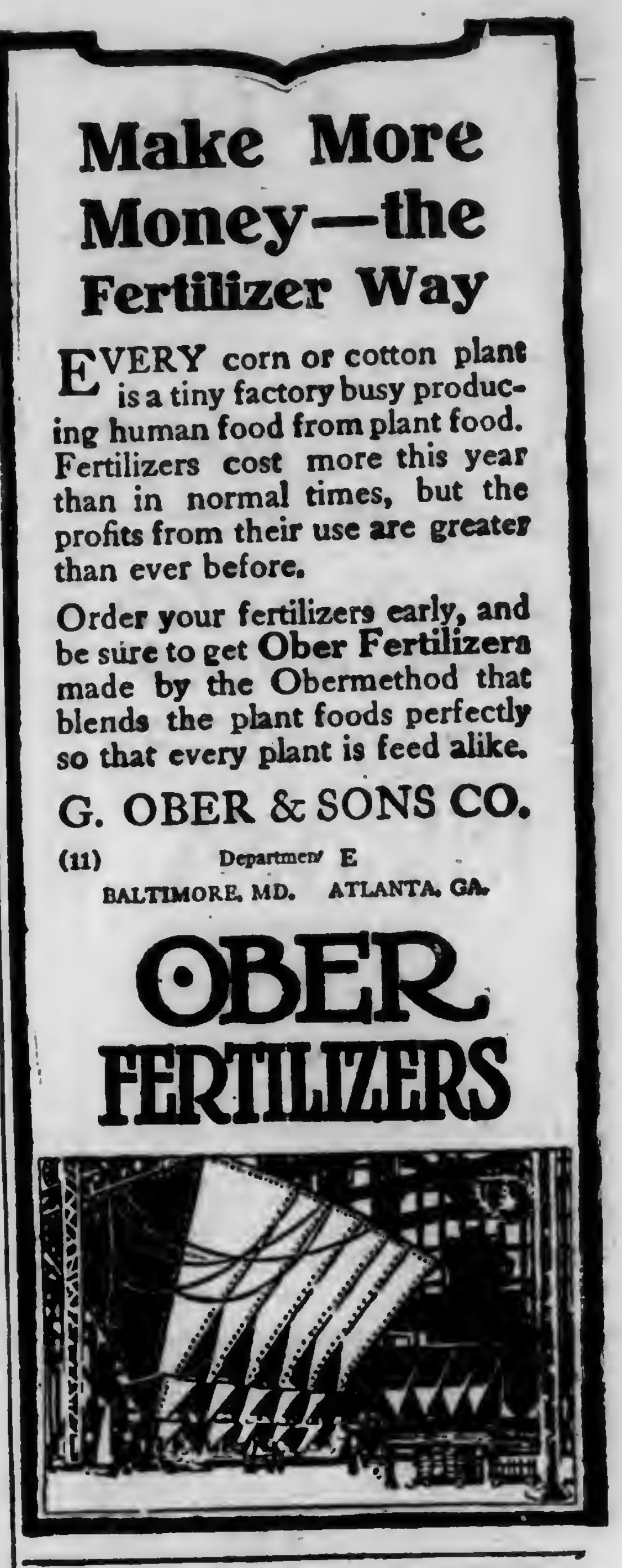
For egg production feed beef-scrap The hens will shell out more eggs and produce them more cheaply with beef-scrap than without.

Don't waste the eggs. Washing destroys the protective film and hastens their spoiling. Get clean eggs by having clean nests.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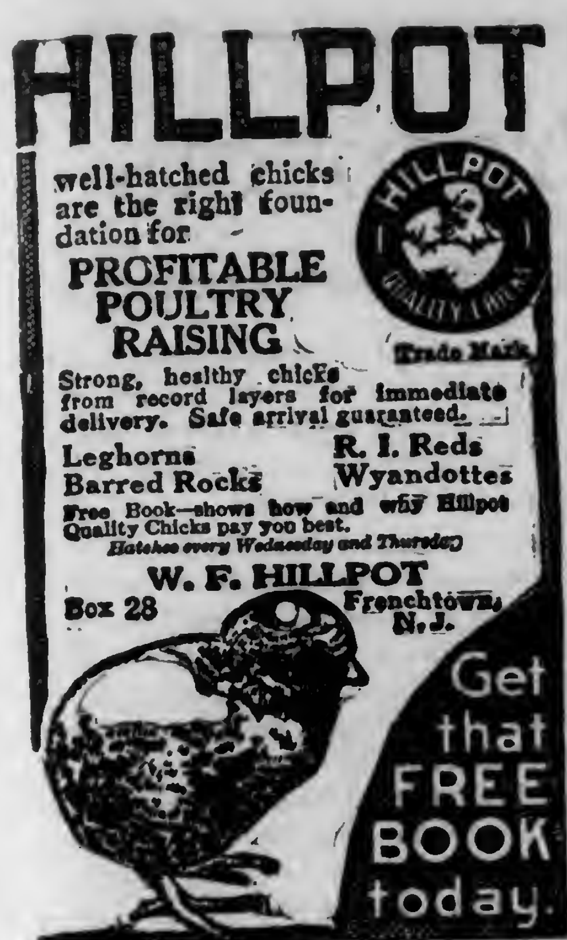
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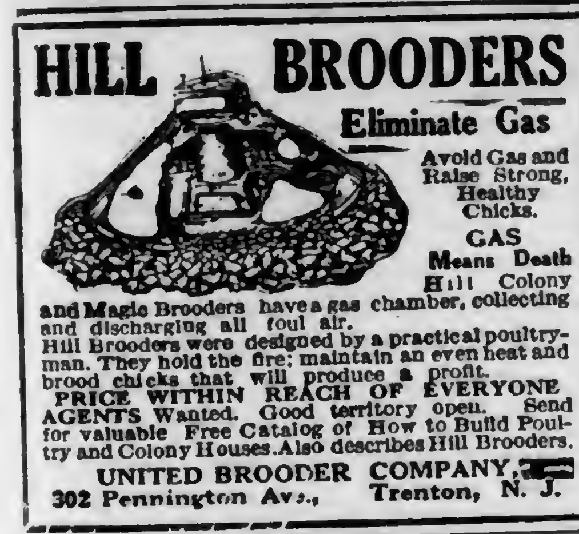
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Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Potatoes Irregular

Movement from producing sections gained in volume despite the transportation difficulties. Values tended to ease off a little wherever the demand for shipping stock became slow, but a few f o.b. markets were strong. No. 1 Michigan Round Whites ranged fully ten cents higher at $2.15 to $2 25 per 100 pounds, f.o.b. In the Rochester, N. Y., District, No. 1 Round Whites were in light demand at a firm but narrow range of $2.40 to $2 45, sacked, delivery guaranteed safe Wagonload sales at New York country shipping points reached $1.90 to $2 10 for No. 1 sacked, and sales to warehouses, No 1, in bulk, ranged $1 72 to $1 80 New York Round Whites in bulk ranged mostly $2.80 to $3 in New York City and $2.60 to $2.65, sacked, in Philadelphia Maine, Green Mountains, No. 1 in bulk, ruled $2 80 to $3 in New York and Boston.

Apple Market Strong

In the Western New York apple section, shipments were mostly on commission basis. There were a few sales of Greenings "A" 2½-inch from storage at unchanged prices, $5 to $5 50 per barrel, and Baldwins held steady at $5. New York Baldwins, "A" 2½-inch sold to jobbers at $4.75 to $5 25 per barrel, but reached $6 in a few markets, and Greenings, "A" 2½-inch ranged $5 to $6.50. Western Ben Davis held unchanged, "A" 2½-inch and firsts ranging $3 to $4 75 in New York Northern Spy, fancy, reached $7 to $8 in New York and "A" 2½-inch held a general range twenty-five cents higher this week, at $5.50 to $6 50. Winesaps, Virginia and West Virginia, firsts showed a strong general price range at $5 50 to $6.25.

Cabbage at Firm Prices

The producing markets reported recent high values fully sustained. Bulk carlot sales at $60 per ton, f.o.b were recorded in the Racine, Wisconsin, District, but the movement was small. At Rochester, N. Y., Danish Seed Stock ranged $50 to $53 in bulk f.o b or $40 to $45, cash to growers, trackside. The shipping movement and demand were moderate Total for the week was 334 cars against 324 cars last week. Prices to the jobbing trade ranged $45 to $52 per ton for New York Holland seed in New York and Philadelphia, but reached $60 to $70 in various smaller markets.

Onions Dull and Draggy

Movement continued light in the producing sections. At Rochester, N. Y. a weaker range, $2.25 to $2.60 per 100 pounds sacked, f.o.b was quoted for Yellow Globes. In the Connecticut Valley Section, dealers were reported unwilling to buy of growers until their own holdings had been cleared out General shipping movement was a little more active, with total of 211 cars, or about one-third larger than in recent weeks. General demand was slow.

In the bean producing sections, the selling movement was rather light. Michigan Navys were reported selling at $12.60 f.o.b. Michigan loading stations and $11 to $11.50 per 100 pounds cash to growers, with demand only fair. No buying from growers was reported in the Rochester, New York, Section. Michigan Navy beans sold to jobbers at a range of $13 25 to $14.50 per 100 pounds sacked; New York peabeans held at $13 to $14, California small Whites at $13.25 to $14.

PRODUCTION OF CABBAGE IN 1916 AND 1917

Revised detailed estimates by states of the commercial acreage harvested and total production of cabbages in 1917 and 1916:

	1917		1916	
	Acres	Tons	Acres	Tons
New York	33,850	247,105	17,800	96,120
Wisconsin	11,800	96,760	9,200	57,960
Michigan	5,150	42,745	2,400	17,040
Colorado	4,400	56,760	3,200	32,960
Ohio	3,500	29,050	2,200	11,660
Minnesota	2,500	23,750	1,500	9,600
Virginia	2,150	14,620	1,700	12,070
Iowa	1,800	12,960	1,700	11,050
Indiana	1,650	15,675	1,100	3,850
Total	66,800	539,425	40,800	252,310

Cabbage grown for manufacture into kraut is included in the above table. From returns received from 124 factories and individuals, out of a total of 171 on the lists of this Bureau in the above states, or about 72 percent, it is estimated there were produced in 1917, 105,954 tons of cabbage for manufacture into kraut. This tonnage represents 57,911 tons produced on a harvested contracted acreage of 7,703 acres, minus 2,282 tons not delivered in violation of contracts, etc , and plus 50,325 tons purchased in the open market. Indiana and Michigan appear to be the leaders in the above states in the manufacture of kraut.

WESTERN CAN HOUSE PRICES

A large canning firm operating in the middle west has announced their new scale of prices which will govern their purchases of farm vegetables to be grown the coming season, by the farmers in the several states. This new scale of prices shows a very marked increase over previous years. These prices are as follows, the differentials being due to the distance from each plant that the product is grown, and the quality of the product as received:

Sweet corn in the husk, delivered to the plant or receiving station, $18 to $20 per ton. Peas, delivered to the plant or other receiving station in vines, for shelled peas, $56 to $60 per ton. Tomatoes, $15 to $18 per ton. Beets, $10 to $30 per ton. Spinach, $15 per ton. String beans, 2 to 6 cents per pound. Lima beans, for shelled beans, $120 per ton.

The general manager of the company makes the following statement in regard to these new prices:

"For the first time in many years, the market price of our finished product is such that we are in a position to make the farmer a very attractive offer for his products. Indeed, we are now in a position to offer him for the canning factory products, a price that is even more attractive, and certainly more definite and certain, than he will receive for his staple farm products. Beyond the mere monetary return, the farmers are learning by experience that canning factory crops are not only conservators of the soil, but may be harvested with less expense than the staple crops.

"In view of the tremendous demand being made upon the canners by the army and navy to furnish the staple canned foods, such as corn, peas, tomatoes and string beans, we feel confident that we can go to our farmers with this scale of prices and secure from them a fair division of their land for these products. They responded most patriotically last year, and we look forward with great confidence to their co-operation this year"

THE POTATO SITUATION

The potato marketing situation at this moment appears to be serious according to a statement just issued by U. S. Department of Agriculture The total production in 1917 is estimated to have been 442,536,000 bushels, or the largest crop ever produced in the United States. Notwithstanding this fact, prices from time of digging to the present have ruled higher than in any previous year of which we have record with the exception of last year when the crop was abnormally short.

The situation demands enlightened, patriotic and vigorous action on the part of all concerned in the movement of this crop. Unless large dealers promptly move the stocks on hand in order to speed up distribution and bring the large reserve still on the farms into the channels of trade, heavy wastage of the crop appears certain to result later in the season. It is believed that dealers will in the end find it wiser to move present holdings without profit or even at some loss rather than to risk destructive wastage later in the season. At the same time, present retail prices must be somewhat reduced if potato consumption is to be stimulated as it should be.

Prices at point of production have generally declined since digging began and many dealers are reputed to hold large stocks purchased at prices higher than those now prevailing This may account in some measure for the present slow rate of movement out of some of the heaviest producing areas and for the abnormally wide difference between present wholesale prices to the grower and retail prices to the consumer.

Under existing and prospective conditions no material quantity of potatoes can be exported or converted into non-perishable products this season. The crop can not be carried over. It must be consumed or wasted. The food situation thruout the world demands that it be consumed effectively to relieve the existing strain on the supply of cereals. It is the one great food resource of the world upon which there is now danger of a heavy loss and the Department is of the opinion that the situation demands that farmers sell freely; that the larger dealers move their stocks rapidly; and that the retailer content himself with the smallest possible margin of profit, realizing that he is now the most important factor in speeding up potato consumption.

FARM-HELP SPECIALISTS

To co-operate effectively in the farm-labor problem with the U. S. Department of Labor, state councils of defense, state commissioners of agriculture and labor, and other official state and local agencies concerned with supplying needed farm labor, the Department of Agriculture has divided the country into four farm-labor divisions: (1) New England and Northeastern States, (2) Southern States, (3) North Central States, and (4) Western States.

The farm-help specialists thru preliminary labor surveys will endeavor to ascertain in advance the prospective needs for extra labor in each community. They will work with state and local agencies to supply labor deficiencies from local supplies if possible, or from the nearest point where labor can be secured outside the community in need of assistance. All local sources of labor first will be drawn upon, and only when the fullest possible utilization of local labor proves inadequate will labor be brought in from outside. In cases of necessity, however, thru the Department of Agriculture and the Department of Labor, arrangements will be made for interstate movement of help, in which the Department of Labor will co-operate in obtaining extra labor for farm purposes from the populous communities.

A farmer who does not know the name of his county agent or those on the community committee should make known his need to his state farm-help specialist, who will direct his request into the proper channels and answer questions on farm-help problems.

The supervising and state farm-help specialists of the department of Agriculture for this section are given below:

Delaware and Maryland, W. M. Hillegeist, 506 Stewart Building, Baltimore.

New Jersey, Frank App, Agricultural College, New Brunswick.

New York, J. W. Robson, Agricultural College, Ithaca.

Pennsylvania, R. W. Meyer, 7th floor, Finance Building, Philadelphia.

The Voice of the People

We propose to reserve this department for the use of our readers to discuss all problems and matters of general interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. It will be necessary to limit such articles to 200 or 300 words. Publication of an article in this department does not signify editorial endorsement.

THE LABOR QUESTION

Long Hours and Late Chores

I am a reader of Pennsylvania Farmer and almost every number I get has something to the effect that farm labor is scarce. Now it is time we farmers owned up to the truth and tell why we cannot get help. Here is our trouble in a nutshell:

The average farmer wants to hire the cheapest help he can get. Nine times out of ten it will be a boy from sixteen to nineteen years old. You may pay him anywhere from $15 to $35 per month. You call him any time from 4 to 5.30 A. M. He is on the go until 7 to 9 P. M. This may not apply to all farmers but it does to the majority.

When I hear a farmer grumbling for help I know what his trouble is. Boys go to the city because there they work eight hours and their work is done. If they do work more they get time and a half or double time and always get double time for Sunday. Now you farmers who have trouble in getting help, when you hire your man for 1918, do not try to get all you can out of him. Treat him white. Most farmers do not class chores as part of the day's work, but they are stiff work. Let us hear from some of you brother farmers thru Pennsylvania Farmer.—A Farmer, Bradford Co., Pa.

Note.—This is a familiar complaint, but if the farmers ever adopt the eight-hour day and over-time payment, farm produce will have to sell at a price that will make the present "high cost of living" a pleasant dream. Farmers do not get up at three A. M. because them like it. They do not work their families and their help from ten to fourteen hours a day because they like to, but because they must if they are to make any return on their labor. When they stop, the laboring man in the city will need still higher wages to buy the simple necessities of life. Trying to meet the higher costs of living by increasing wages has led to the present shortage of farm labor and the consequent shortage of farm produce. Continuing that policy will only further deplete the labor supply and curtail production. — The Editors.

WHAT SHALL WE DO TO BE FED?

One thing we must do: Work hard and do our level best. With the shortage of labor, the latest estimates give New York State a 14 percent increase in acreage of rye and wheat. There is a shortage of labor in all industries and each must cope with the situation as best he can. We have got to put our heart and soul into this emergency. We must remember that this nation has thought of nothing but peace for years, and now is plunged into the greatest cataclysm of history. The best thoughts and efforts of all are needed.

I heard two men discussing the five-day suspension of business. One said: "This country has gone to the dogs. They will tax the air next." The other replied: "The United States won't do that, but the Kaiser will try it." Don't complain because some unpatriotic person makes 1,000 percent profit. Mark such men; write and expose them and help the government solve these difficulties. We will have shirkers, crooks and slackers with us always. Our business is to get after them as we would the Kaiser. Premier Lloyd George said in his address to Trades Unions of England on January 18, "We must go on or go under." That applies to the American farmer as much as it does to the English laborer.—A. R. S., Tompkins Co., N. Y.

CONVICT LABOR

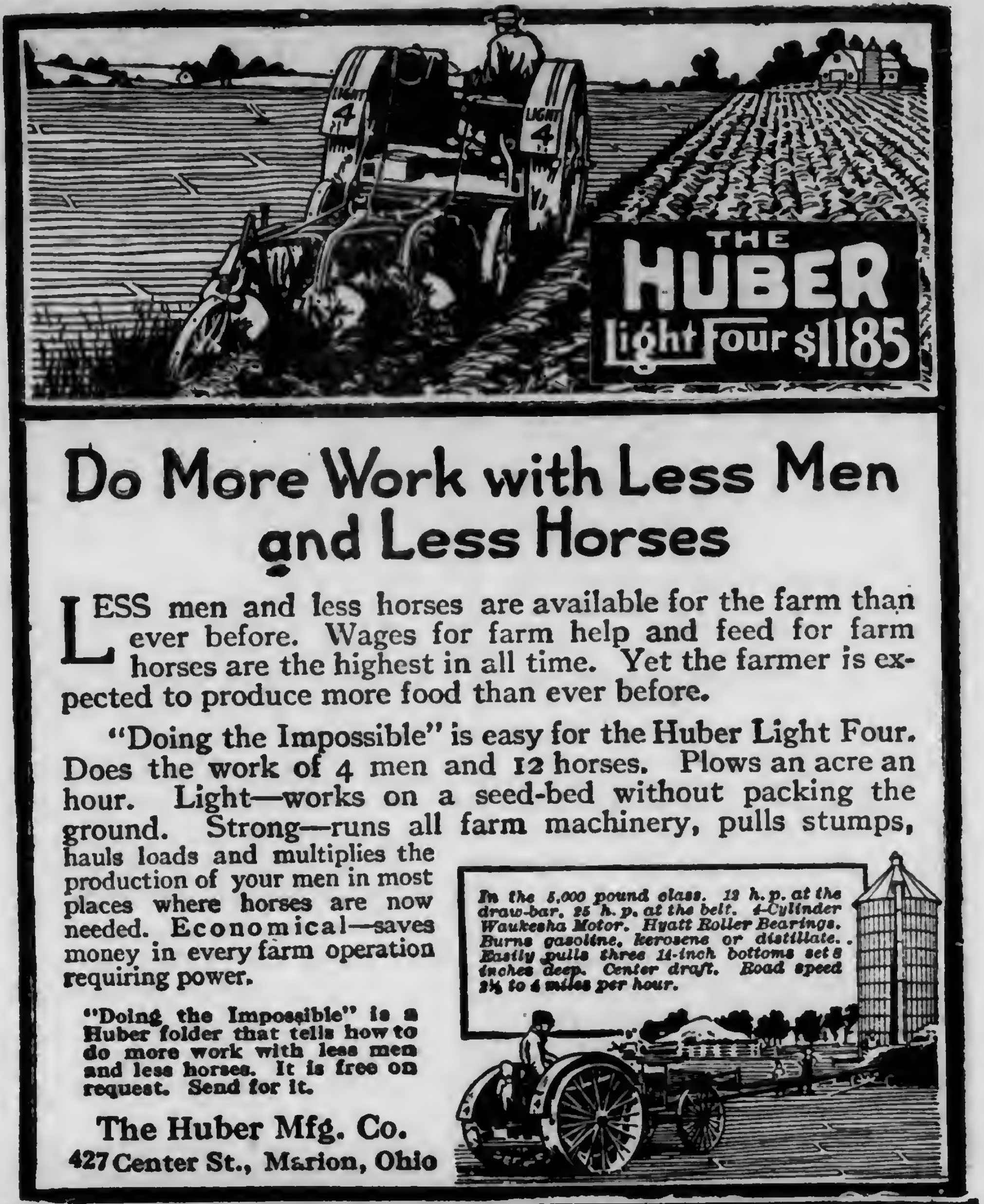
I live 25 miles from a state reformatory that has 2,000 inmates. They are all young men and more are coming. Many commit some crime to get out of the war and are sent to the reformatory. These 2,000 convicts would take care of the labor problems of Steuben County. First send to the war those that are sound. I am of the opinion that an examination of the convicts would find about 90 percent would pass the physical examination. The 10 percent could be put to work on farms and highways. I have seen this worked out in the state of Oregon and in Virginia. In Richmond the streets are all taken care of by convicts. In Oregon the state roads are worked by convicts. They could be taken by motor trucks a long way and one guard could take charge of about 10 convicts. That would take a score of more of "job holders" off the state pay roll and put them to work.

I would like to see the convicts go to war. If they can not be so used, let us at least make them pay for their keep. This is the only solution I can see for the labor question. Put all that are fit in the army and the rest on road work or in productive work.—W. G. Seely, Steuben Co., N. Y.

"SPEED UP" ENTHUSIASM

In our meetings of the last two months it is apparent that the better class of farmers are not much moved by the cry for greater production. Many will plant less acreage to hoed crops and give better care to the few acres, not depending on uncertain help that has a marked affinity for short days and long pay with a holiday each week. In view of doing more work with less men there is marked interest in farm tractors and their adaptability to work on the average farm. These men are in quest of a small tractor to draw a two-bottom plow and having belt power to drive the thresher, ensilage cutter and grind grain for home feeding.

I have heard several farmers lament that their only boy capable of handling the farm machinery in a clever manner was taken before they realized their loss. These boys who have grown up on the farm with hands and eyes on the farm equipment are as clever with farm machinery as in handling the colt, and no substitute labor from town and factory will meet the requirements of the field. We might as reasonably expect the average farm boy to go and immediately meet the requirements of skilled manufacturing.—W.



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LESS men and less horses are available for the farm than ever before. Wages for farm help and feed for farm horses are the highest in all time. Yet the farmer is expected to produce more food than ever before.

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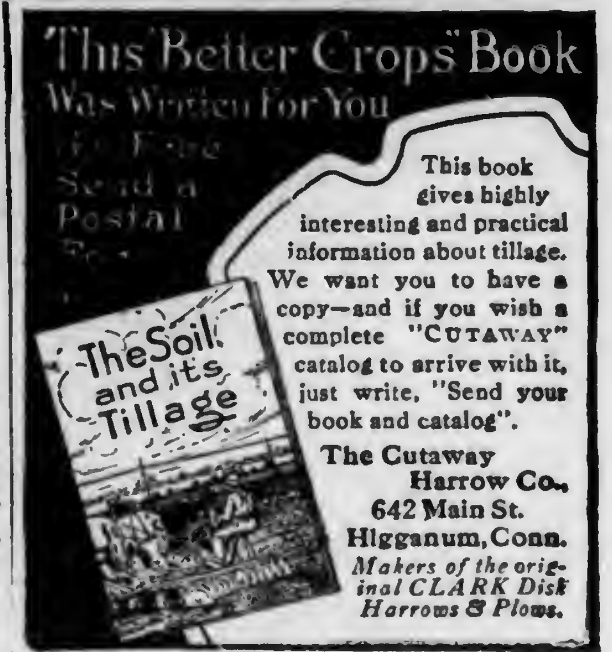

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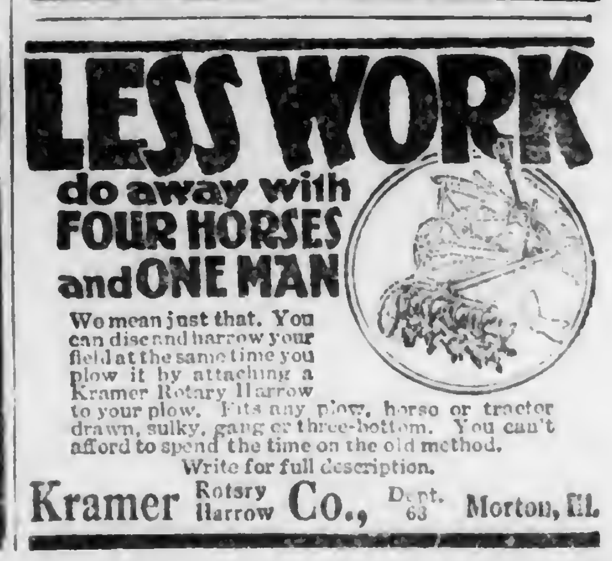

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Live Stock

YOUNG LIVE STOCK JUDGES

One hundred and sixty freshmen students enrolled in Animal Husbandry at the Pennsylvania State College participated in a recent live stock judging contest. Professor W. H. Tomhave, chief in Animal Husbandry, and Dr. H. H. Havner, of the Extension Department, acted as judges and placed the five classes of horses, cattle, sheep and swine worked over by the students. Gold, siver, and bronze medals were offered for first second and third places respectively. The twelve high students on placing were required to give oral reasons before the committee and the winners were selected on a basis of 50 percent on placing and 50 percent on reasons. The winner of first place, Mr. Joe Kindig, Jr., comes from York; Pa. Mr. Eugene W. Helsel, of Wilson, Pa., won second prize and Paul Grimes, of West Brownsville, was third. The ten highest men in the contest were all within 30 points of each other. The highest possible score attainable was 600 and Mr. Kindig's total number of points was 554. The contest was managed by Fred S. Hultz of the Animal Husbandry Department.

Winning Stock Judges at Pennsylvania State College

WHY LIVE STOCK IS SCARCE

The present shortage of meat animals offers the livestock man the greatest opportunity that has been held out to him for many years. He has a double opportunity—for patriotic service and for advancing his business. How the shortage came about is outlined by F. B. Mumford, of the Missouri College of Agriculture, as follows:

During the three years of war, the belligerent nations have found it necessary to reduce their live stock in order to sustain their armies and their civilian population. They have made this reduction to get meat and fat enough for their people. They had a further reason in that they needed the land which was maintaining these animals for bread grain production. They have not had land enough and labor enough to produce food grains for their live stock. As a result the reduction in the number of live stock in European countries has reached almost staggering proportions. The cattle population has been reduced by 28,000,000 head in the allied countries and in Germany and Austria. The number of sheep has been reduced 54,000,000 head. There has been a total net decrease in live stock for the world of 115,560,000 head.

The belligerent nations must have meat and fat. Their own supply is so depleted that they must depend upon the supplies of exporting countries. Presumably the conditions which brought about the decrease in live stock during the three years of war that have passed will become more acute and the number of live stock will be decreased perhaps more rapidly as the war continues. Two facts are apparent from these statistics: First, no matter how long the war lasts the demand for live stock products will be greater and greater and greater. Second, even tho peace should come immediately the demand for live stock will not be changed because the supplies of all nations are depleted, and they will have just as many people to feed in peace as in war. It is possible that these same people will need more meat and fat after the war than they are now eating under enforced conservation. War or no war, therefore, there will be a world-wide demand for meat production.

HOGS CAN BE FED AT A PROFIT

Farmers have been asked to increase pork production by breeding more sows and by feeding the present supply to greater weight. Will it pay to feed hogs at the present prices of corn and hogs? This question is answered by the experience of actual feeding operations. The Missouri College of Agriculture conducted a feeding experiment last summer to obtain information that would answer such questions. Seventy-three head of Poland-China pigs, farrowed in April and May, were placed on feed about July 1 so that they could be marketed during the first week in December.

These pigs weighed 34 pounds each when started on feed. They were full fed on corn, 9 parts; shorts, 2 parts, and tankage, 1 part. The shorts and tankage were fed in a slop, once each day. The pigs were on rape forage until the forage was exhausted. Corn was fed by hand, twice each day.

A summary of the grain fed and gains made shows that these pigs made a pound of pork on 3.9 pounds of the grain mixture. Figuring corn at $1.40 per bushel on the farm, shorts at $2.75 per hundred, and tankage at $90 per ton, the gains cost $11.15 per hundred, not including the rape pasture.

The pigs weighed 202 pounds per head on the Chicago market, and sold for $18.50 per hundred. Allowing $2 per head for pasture for the season, and not including marketing expense, these hogs netted $10.34 per head, or a total of $754.82 clear profit. Had these hogs sold at $16.50 instead of $18.50, the profit would have been practically $7 per head. Figuring corn at $1.68 per bushel instead of $1.40, the profit is $7.72 per head at a selling price of $18.50 or $4.36 per head net when sold at $16.50.

These figures do not illustrate extremes, but rather the average of what may be expected by good feeding and management. The rations used and method of feeding are common to every good feed lot. Following such practice is the surest way to profit in the hog business.

RATIONS FOR FARM HORSES

In view of the extremely high price of feeding stuffs farmers are considering the use of more economical methods in feeding horses. The old-time prejudice for straight timothy as a horse feed is rapidly being discarded, while alfalfa and the clovers are being used successfully as substitutes, allowing timothy to go on the market. One hundred pounds of alfalfa hay contains three times as much digestible protein and supplies more total nutrients than a hundred pounds of timothy hay. It is also true that one hundred pounds of properly cured corn stover (fodder minus the ears) has practically the same feeding value as the same quantity of timothy hay, but on account of the bulkiness and inconvenience in handling, corn stover cannot compete with timothy hay on the market.

Oat straw is a very satisfactory roughage for horses doing medium work. Oat-and-pea hay of a bright color and free from dust supplies practically a balanced ration for horses doing very little work or standing idle. Just what combination of grain and roughage is most economical will depend upon local prices and the feeds available. The animal husbandman of the New Jersey Experiment Station recommends the following ration as applying in many instances for horses doing heavy work: Corn, 50 lbs; oats, 35 lbs; and bran, 15 lbs., fed at the rate of 1 to 1½ lbs. for each one hundred pounds of weight per horse per day. In connection with this ration, corn stover, or corn stover with a limited amount of alfalfa hay, would make a satisfactory roughage.

For horses doing light or irregular work, the above grain ration may be cut in half, or even omitted entirely provided the amount of hay is increased. Where horses are required to depend upon hay without grain, a combination of some leguminous hay should be allowed in connection with the corn stover or mixed hay.

BEST USE FOR SKIM MILK

All skim milk should be used—none wasted. It should furnish the maximum of food to human beings and does this better when used direct, as cottage cheese, prepared buttermilk, or by-products, than when fed to animals and then converted into meat. Surplus skim milk may be used economically to feed hogs, yet 100 pounds of it, which will produce 15 pounds of cheese, produce only 4.8 pounds of dressed pork if fed with corn. Buttermilk is equal to skim milk for feeding hogs, while whey is half as valuable. Whey, being low in protein, is not well suited for young pigs and should be fed to older animals.

Ordinary grass pasture, or green rye, oats, sorghum, rape, clover, alfalfa, peas or beans can take the place of skim milk after the little pigs get a start. Much green feed can be raised without greatly reducing the acreage of other crops.

Calves and pigs do well when skim milk is fed, but they need it only for a short time and in limited quantities. Except when fed to very young animals, skim milk is fed most economically when supplemented with grain. For dairy calves skim milk may be substituted in part for whole milk on the tenth day. If the calves are vigorous they should receive a little grain and hay at two weeks of age, and it is safe to discontinue the skim milk five or six weeks later.

By substituting grain, grain feed, buttermilk, and whey for skimmilk in animal feeding, much skim milk may be released for use in cooking, for condensing, or for making cottage cheese.—U. S. Department of Agriculture.

LET HOGS FEED THEMSELVES

The Missouri Experiment Station has demonstrated the fact that gains may be put on fattening hogs rapidly and economically by the use of self feeders. Shoats weighing 121 pounds at the beginning of a 60-day feeding period gained 1.79 pounds a head daily, weighing 228.9 pounds at the close of the feeding trial. During this time they were supplied corn, shorts and tankage, each of these feeds being placed in a separate self feeder and the shoats allowed to eat as much of each as they wished.

When so fed they seemed to balance their ration about as well as could be done by hand feeding. The proportion in which the feeds were eaten are: Corn, 20.66 pounds; shorts, 3.93 pounds; and tankage 1 pound. The average daily feed consumed per hog was 8.18 pounds. The amount of feed required for each pound of gain produced was 4.55 pounds.

With corn worth 65 cents a bushel, shorts $1.35 per hundred and tankage $2.50 per hundred, it cost $5.68 to produce 100 pounds of pork.

WORM TREATMENT

I have noticed numerous articles on treatment for worms in hogs. Most of these remedies consist of a number of drugs which no doubt are quite expensive. We have never tried any of these worm treatments as we have a very simple remedy that has always proved satisfactory to us.

We buy spirits of turpentine and feed one teaspoonful to a hog weighing 100 pounds or over, each morning in slop for three days. Then discontinue for the next three days and then repeat the dose as before. This treatment must not be given in wet weather as turpentine apparently has a bad effect on any animal that gets wet. Keep pigs in a pen or if they are running in open lot confine them except in fair weather. The dose can be proportioned to size of the hog. For pigs under 100 pounds, one teaspoonful to two pigs should be sufficient. We never diet our hogs before feeding. This has never failed for us and we have seen no bad results from feeding it.—C. E. Kintigh, Westmoreland Co., Pa.

The U. S. Food Administration wishes to place the Irish potato every day in the year on every table in America. Potatoes furnish nourishment, bulk, mineral salts and a corrective alkalinity in the diet. They are plentiful this year and reasonably cheap.

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FARMER. You must pay Income Tax which has come to stay. You will be under Government Inspection from now on. Be prepared. My Farmers' Account Book meets your demand. Large 250-page book for $3 00, good for 20 years. Send check today. L. I. SYPHERS, Ft. Wayne, Ind.

Hinman Milking Machine for sale. Hinman 3 unit milking machine for sale. Used only 3 months, 1 extra bucket, 2 sets No. 3 and 2 sets No 4 teat cups, all in first-class condition. L. F. Satterthwaite, Fallsington, Pa.

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Farmer Position as farmer wanted by capable married man, 35 years old. Experienced dairyman. Can manage and will board help. Box 100, Pennsylvania Farmer, Philadelphia

Salesmen To sell paint, varnish and roofing to the consumer. Write today while the best territory is open. The American Oil & Paint Co., 5511 Euclid Avenue Cleveland, Ohio.

Miscellaneous

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Any reader of this paper who will write P. J. Kelly the Poultryman, at 73 N. 2nd St., Minneapolis, Minn., will receive a Free Copy of this new booklet "White Diarrhoea in Baby Chicks." It tells how to prevent, remedy and save the whole hatch. It's free and you are urged to write for it at once. Advertisement.

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Hampshi[illegible] Ram Lambs Beautiful form. Excellent breeding. Vigorous and stocky. Manetto Hill Farm, Hicksville, L.I.

Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

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The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Production last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service, Dept. of Labor

Turn More Acres With Kerosene

The difference between the Happy Farmer and other tractors makes the difference in the extra work you can do with it. The Happy Farmer works on kerosene without waste—has plenty of power to do all your plowing and is built to stay right on the job all through your busy season. Weight only 3800 pounds with 12-24 H. P.—a wonderful combination of heavy power with light weight. Write for descriptive circular.

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Boys Don't You Want a Sled

A Fire Fly Coaster

Length, 32 in.; Height, 6 in.; Width, 11 in.

will be given as a reward to any boy or girl for securing three subscriptions to Pennsylvania Farmer for one year at 75 cents each or for 10 trial subscriptions for 4 months at 20 cents each.

START OUT AT ONCE

soliciting subscriptions among your neighbors before some other boys beat you to it. You can secure enough subscriptions to earn a sled in a couple of evenings after school. Send in the subscriptions together with the money collected and we will send you a Genuine Fire Fly Coaster by prepaid post.

Pennsylvania Farmer, 261 S. 3rd St., Phila., Pa.

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NO WIRES TO BREAK
With Special PATENT Spring Cable Loop. No danger of injury to animal or young. Sold direct on free trial.
Reference First National Bank, Hawkeye, Ia. GABEL MFG. CO., HAWKEYE, IA. AGENTS WANTED.

The Home Sewing—IV

By M. JANE NEWCOMB,

Home Economy Department, Pennsylvania State College

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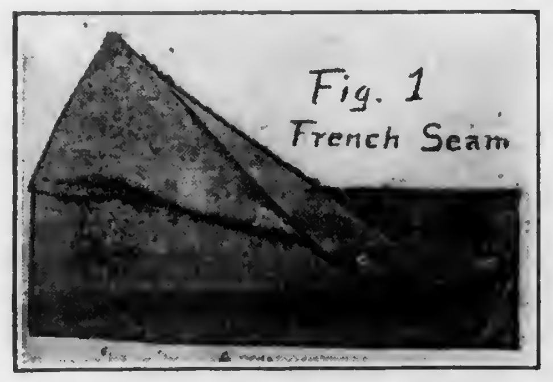
(No. 1 of this series, published January 12, explained how to take measures; No. 2, January 19, how to adjust patterns; No. 3, February 2, how to use adjusted waist pattern.—The Editor.)

Directions for Underwear Processes

With the present high cost of everything needed for the household, the homekeeper is studying how she can make the money at her disposal best supply the needs of her family. Ready-made underwear is, in many cases, unsatisfactory both in quality of material and in workmanship. It is not good economy to spend money for it if women have time for sewing, because the same amount of money expended for material will provide garments which will give two or three times more service than the ready-made. For underwear the materials may be nainsook, long-cloth, pajama cloth, bleached muslin or half-bleached muslin. Any of these, if bought in a good firm quality, will make durable nice underwear. To test these materials when buying, rub between the hands to discover whether the finish is real or made by a sizing of starch. Also pull in all directions to see whether they are strong and firm.



Following is a list of materials with their widths and current prices of the durable qualities: Nainsook, 36 inches, 20 to 35 cents; English long-cloth, 36 inches, 18 to 30 cents; pajama cloth, 36 inches, 18 to 30 cents; half-bleached muslin, 36 inches, 12 to 20 cents.

If one has but 12 cents a yard to spend for material it is much better to purchase a good quality of unbleached muslin than nainsook, for nainsook at 12 cents a yard must necessarily be of poor quality; but unbleached muslin at that price will give good service. The bleaching of the muslin will take place in one or two washings.

For trimming underwear the stickerei braid with a plain scalloped edge is most serviceable. Any firm embroidery edge gives better service than lace. Or a narrow edge can be crocheted on the garments after they have been finished with a bias facing. This finish is also very satisfactory.

Following are directions for the processes used in making good underwear:

French Seam

A French seam is a finished seam having no raw edges of the material showing. It is used for underwear because of its strength and neatness. A French seam is twice sewed, thus: Lay the wrong sides of the material together so that the two edges are even, baste if necessary, and stitch about ⅛ inch from the edge. Use running and back stitch for this when done by hand. Remove the bastings and trim seam to about 1/16 inch, being careful to keep the edge very straight. This seam will be on the right side of the garment when stitched. Now turn and crease at first sewing so as to enclose all the raw edges (Fig. 1, A), then stitch (Fig. 1, B). Use a back stitch for this when done by hand. The seam should be about ⅛ inch deep when finished.

The Fell

A fell is a flat-finished seam in which the raw edges are completely hidden. It is used for underwear because of its strength, neatness, ease in laundering and smoothness. To make it, the seam is twice sewed, both sewings being on the wrong side of the garment, thus: Place one edge of the cloth about ⅛ inch below the other, baste about ⅛ inch from the lower edge, and stitch (Fig. 2, A). Use a fine running stitch for this when the seam is done by hand. Remove the bastings, turn the longer edge carefully down over the shorter, turn the longer edge under and crease so it lies perfectly flat on both sides of the garment, baste and hem the edge down carefully. (Fig 2, B).

Hemming

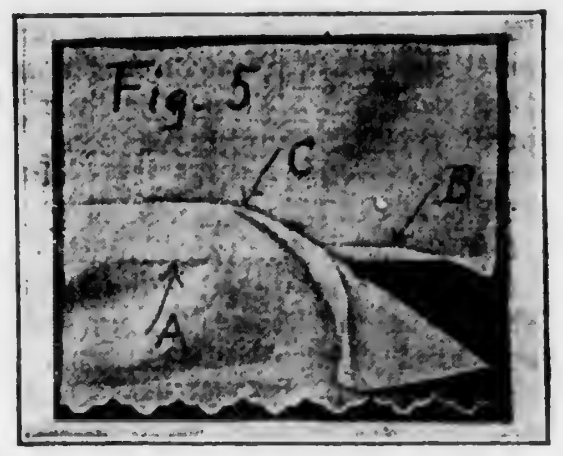
A hem is a twice-turned fold used for finishing raw edges. The first turning is from ¼ to 1/16 inch, according to the material used and the width of the finished hem. Hems vary in width according to their use. Table linen, tea towels and ruffles require narrow hems. Sheets, pillow cases and skirts require wide hems. Hems should be turned to the wrong side. Hold material or garment to be hemmed with wrong side towards you, and the edge to be hemmed as the upper edge. Turn down towards you about ⅛ inch and crease firmly. Turn down the second fold the width of the desired hem, and crease. A narrow hem may be basted once with short even stitches, as near the folded edge as possible without being in the way of the permanent stitch. A wide hem should be basted near the folded edge with a short even stitch.

The Stitch.—A firm slanting stitch is taken over the folded edge of a hem to hold it firmly. Work from right to left. Hold the work over the first finger of the left hand with the edge to be hemmed towards you. Have no knot in your thread. Begin at the right side, and put the needle thru the folded edge of the material from underneath. Leave about ½ inch of thread, tuck it under the edge of the hem and hold it firmly. Just below where the thread comes thru the edge of the hem take up one thread of the cloth and slanting the needle towards the left take up a very little (one or two threads) of the folded edge of the hem. Just below this stitch take up another thread of the cloth, slanting your needle, make another stitch and continue (Fig. 3, A). Fasten your thread by sewing two or three times over the last stitch.

To join a thread in hemming break the old thread off short, pull out two or three stitches, leaving the end between the fold and the material. Begin with the new thread as at the beginning of the hem, putting your needle into the folded edge thru the hole where the last stitch of the old thread was pulled out. Be sure both these ends are under the edge of the hem and held securely until enough stitches have been taken to hold them firmly.

Continuous Lap Placket

The placket opening should be about 12 inches in length. Cut a strip twice the length of the placket and 3¾ inches wide. Lay the right side of the facing against the right side of the garment and baste to both edges of the opening. Turn the other edge of the facing under a little, bring this folded edge down to the first line of stitches and hem in place (Fig. 4, A).



Facing With Embroidery

Lay the right side of the embroidery against the right side of the garment with raw edges together (Fig. 5, A). Baste a ⅜-inch seam, and sew with a fine running stitch, or stitch on the machine. Trim the garment edge to a little less than ¼ inch, (Fig. B), turn the edge of the embroidery under it (Fig. 5, C), baste and hem down as for a felled seam.

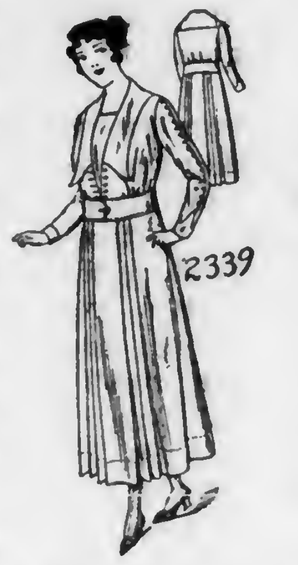
Maple Sugar Cake

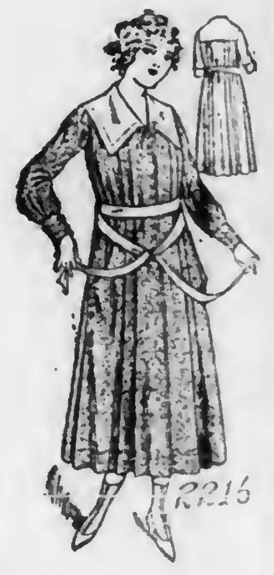
One cup maple sugar, one egg, butter size of small egg, two-thirds cup buttermilk with one teaspoon soda and one-half teaspoon baking powder or cream of tartar, a pinch of salt, flour enough so that you have to spread the butter in the tin with a spoon. Flavor with cinnamon.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

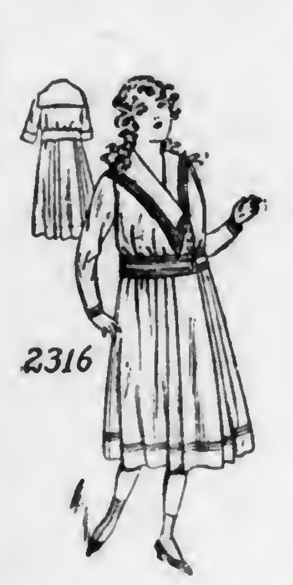
2339.—Stylish Gown.—The vest, cuffs and collar could be of contrasting material, or embroidered in pretty colors. The skirt is arranged in plaits at back and front. The sleeve is finished with a shaped cuff. Pattern is in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 7¼ yards of 36-inch material. The skirt measures about 3 yards at the foot, with plaits drawn out. Price, 10 cents.

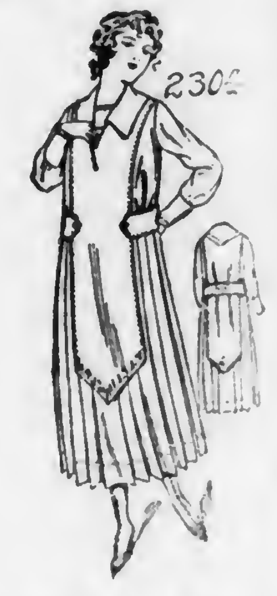




2216.—Popular Model. — Jersey cloth, serge, satin, silk, checked or plaid suiting, linen and other wash fabrics are nice for this style. Pattern is cut in 4 sizes: 14, 16, 18 and 20 years. Size 16 requires 6⅜ yards of 44-inch material. The dress measures about 3 yards at the lower edge. The sleeve may be finished in wrist length with a deep cuff, or in short length, with a shaped cuff. Price, 10 cents.

2316.—Dress for Growing Girl.—The right front of the waist overlaps the left at the closing. The skirt is a gored model, plaited over back and front. The sleeve may be in wrist or elbow length. Pattern is in 3 sizes: 12, 14 and 16 years. Size 14 requires 5⅝ yards of 44-inch material. Price, 10 cents.





2304.—Dress for Misses and Small Women.—This style is especially attractive for women of slender figure. The jumper or overblouse portions may be omitted. The skirt is a straight plaited model and is joined to the waist. Pattern is cut in 3 sizes: 16, 18 and 20 years. Size 16 requires 4¾ yards of 44-inch material for the dress and 1¾ yards for the jumper. The skirt measures about 2⅞ yards at the foot, with plaits drawn out. Price, 10 cents.

THE VALUE OF MOTION PICTURES

"I believe the time is not far distant when the opportunity to see good motion pictures regularly in small communities will be provided," says Orrin G. Cook, Secretary of the National Committee for Better Films, a branch of the National Board of Review of Motion Pictures of New York. "The motion picture comes nearer to solving the social problem of more or less isolated groups, such as those of men to be found in armies, in the battleships of the navy and of families comprising rural communities than any other form of commercial recreation.

"The difficulty in the past has been that of securing the films, providing suitable places for their exhibition, the apparatus for the projection of the pictures and a financial return that would at least cover the expense. The motion picture is so valuable as a means of entertainment where commercial forms of recreation are few and far between, that special effort might well be made to bring it into these isolated communities. The granges for instance, could appoint committees to have charge of such entertainments and arrange their halls for the exhibition of the pictures. Thru co-operation with granges in neighboring towns and counties, arrangements could easily be made to procure a given program of pictures for circulation thru the region thruout a week. A licensed operator could be hired by the week by the co-operating societies, carrying the films from place to place in order of exhibition. For instance, the program could be exhibited on Monday night in one place, on Tuesday night in another, on Wednesday night in a third, and Thursday night in a fourth, and so on. If necessary the operator could obtain two programs per week and return one set to the renting exchange for repairs. Thru taking films for more than one day the cost of procuring them would be reduced, and the possibility of getting what was wanted would be improved.

"Portable machines can now be purchased at a reasonable price from several reputable companies. They can be run by electric power, small motors or belt from autos, as well as by gas tanks. These can be readily installed with fireproof booths and conveyed from place to place on the vehicle used by the operator. The cost of the machine ranges from $150 to $300, and can be apportioned over a period of two or three years. The National Board of Review of Motion Pictures of New York City publishes lists of films reviewed by its committees and declared by them to be especially suitable for family entertainments. These lists may be had on application.

"The lists are a part of the program of the Better Films Movement. This movement, begun two or three years ago, has grown until it covers the country. It has been stimulated by the National Committee for Better Films. Producers of photoplays are recognizing the strength of the movement. The average of wholesomeness of motion pictures has been raised in the course of the last year, and many films are being made with the family and young people in mind.

"The social significance of this movement is indicated when attention is drawn to the fact that saloons find themselves unsuccessful competitors of the motion picture theatres for patronage. It costs a man no more to take his family to the motion picture theatre in the evening than it does to go to the saloon alone. The family is furnished with topics of conversation outside of those which have been worn threadbare thru constant discussion in the home. The motion picture has been called 'the first art developed for the entertainment of the poor man'. Should prohibition become nation wide, the motion picture will do more than any other single thing to make it effective."

FOR THE SUFFRAGE AMENDMENT

The following is extracted from a letter received from the editorial chairman of the Leslie Suffrage Bureau:

"It is generally conceded that universal woman suffrage is inevitable Why insist on the State-by-State method, which will make it impossible during the present generation, when a Federal Amendment would end the contest within a comparatively few years? After it has been submitted by two-thirds of each House of Congress it must then be accepted by the Legislatures of three-fourths of the states. Their members can be elected on this issue and the men of the state will have an opportunity to direct how they shall vote. Should it be adopted each state will still be entirely free to make its own requirements for voting, except that it shall not disqualify solely on account of sex.

"A Federal Amendment offers the easiest, the speediest and the most dignified method for obtaining the suffrage. The women of all the states are joining in this movement for action by Congress. If all the newspapers and all the politicians in the United States should oppose it they would not be swerved from this position. Why then prolong and intensify the struggle which has already continued for 70 years? Why should Congress wait until urged by the President to submit to the question? Why should it not receive its mandate from the people of the country?

"In behalf of the women everywhere who want the suffrage, we earnestly request that you will extend to this Federal Amendment your valuable support and help to concrete a public sentiment which will justify the members of Congress from your state in voting to submit it."—Ida Husted Harper.

CALVERT COUNTY'S FIRST EXHIBIT

The agricultural, household and Boys' Club exhibition held in the Town Hall in Prince Frederick, Md., attracted a large crowd who were vividly interested. This characterized the first agricultural exhibition ever held in Calvert County.

Among the speakers were J. E. Metsger, T. B. Symons, of the Maryland State College of Agriculture and H. C. Whiteford, demonstration agent for the count. Premiums were awarded for the best of each variety of exhibit.

William Bowen won first prize for tobacco; J. W. Jones, for white corn; C. O. Deuey, for yellow corn; R. W. King, first prize f orwheat. In the Boys' Corn Club prizes were awarded in the following order: Archie Trott, Thomas Jones, George Ward, James Norfolk, Duke Belt, Samuel Dowell and Parran Belt.—E. J.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 4, 1918.

In spite of the transportation difficulties, the movement of potatoes from most producing sections is gaining in volume and values are tending to ease off a little. The receipts in this market have been quite liberal, there being around 75 cars of potatoes on track at the delivery yards. Cold weather prevailing has had a tendency to curtail the movement and the market generally has an easy tendency. While some strictly fancy Pennsylvania potatoes are selling around $2.75 to $2.85 per cwt., the bulk of the sales are being made at $2.40 to $2.60 per cwt., and some State stock is selling generally at $2.20 to $2.40 per cwt., with an occasional lot of strictly fancy up to $2.50. The supplies that are being hauled in by the nearby farmers are extremely light on account of the cold weather and these rule steady at 80 to 90 cents per ⅝-bushel basket.

Sweet potatoes are showing another advance over that reported in these columns last week. Supplies are light, demand active, and all fancy stock is cleaning up promptly at outside quotations. The Jersey sweets are selling from $1.40 to $1.50 per ⅝-bushel basket for primes and $1.10 to $1.25 for mediums. Three cars of Maryland and Delaware sweets arrived Monday and sold quickly at $2 to $2.25 per bushel hamper for primes, with No. 2's drawing from $1 to $1.25.

Vegetables

Supplies of dried beans continue moderate and under a steady demand prices are ruling practically unchanged, with choice handpicked marrows selling at $15.50 to $15.75 per cwt; pea and mediums, $13.25 to $13.50, and red kidney, $13.50@14. Green beans have been unusually scarce and selling extremely high, some fancy stock reaching $9 to $10 per hamper, while very poor and ordinary have brought from $4 to $6. Very few egg plants are in the market and these also have been drawing extreme prices, ranging from $4 to $5 per bushel hamper. New beets are in light supply and drawing from $2.25 to $3 per box. The cold weather has curtailed the supplies of all kinds of root stock from nearby Pennsylvania and New Jersey points and as a result the market is very firm and active on old beets, carrots, turnips, rutabagas and parsnips. Old beets are finding a ready market at $3 to $3.50 per barrel; carrots, $2.75 to $3.25; turnips, $3 to $3.25; and parsnips from $3.50 to $4.25 Brussel sprouts are in light supply and higher, selling at 25 to 26 cents per quart for Long Island stock, with some 50-quart drums from California selling around $10.

Old cabbage is in light supply. The old accumulations are practically cleaned up and the market is very firm, active and higher, with fancy medium size heads of green Danish selling at $55 to $60 per ton. The few remaining cars of old stock are cleaning up around $45 to $48. New cabbage on the other hand is not so active and is about 50 cents a hamper lower than last week; prices now ranging from $1.50 to $1.75 per hamper, while some in crates sold at $1 to $1.50. There are practically no cucumbers except hot house stock and these are selling from $1.50 to $1.75 per dozen. We are unable to report any improvement in the celery market, which is still over-supplied with poor New York State stock, much of which has been frozen The best is selling at $3.50 per crate with poor moving very slowly from $1 per crate and up. This over-supply of poor stock from New York State is having a bad effect on the Pennsylvania celery, causing a slow movement at 10 to 15 cents per bunch. Horse radish continues in light supply and firm and active at $6 to $8.50 per barrel. There has been no Norfolk kale or spinach on the market, but some spinach from the State of Washington sold at $2.75 to $3 per bushel box. Lettuce continues in abundant supply and prices generally are ruling very low, most sales ranging from $1 to $1.25 per hamper, with fancy up to $1.50 and poor around 75 cents. Fancy Pennsylvania hot house mushrooms continue in light supply and the market is firm and active at 50 to 60 cents a pound.

The onion market is ruling very weak and prices are fully 25 to 40 cents a cwt. lower. Yellow onions are selling from $1.75 to $2.25 per cwt., with white onions in Cummer crates selling at $1.25 to $1.50, and an occasional lot up to $1.75. The market is practically bare of fancy peas and when here extreme prices are being obtained, some California stock having sold at $5 to $7.50 per hamper. Parsley is practically unchanged from last week. Curly parsley is selling at $8 to $10 per barrel and plain parsley at $5 to $6. Shallots are in light supply and firm at $5 to $6 per barrel. There has been no squash on the market this week. Rutabagas are in light supply and continue firm and active, when small and medium at $2 to $2.25 per cwt., with large size moving slowly at $1.50 to $1.75. Tomatoes are showing a still further decline than that reported in these columns last week. Fancy 144's are selling up to $3.50 per crate. There are very few showing quality sufficient to reach these prices. Hot house tomatoes continue scarce and firm at 25 to 35 cents per pound. Watercress is more plentiful and prices are lower, best selling at $3 per 100 bunches, with poorer grades selling from 1 to 2 cents.

Fruits

While offerings of barreled apples are not heavy the demand has been moderate and the movement only fair, receivers, however, are asking about former prices for all fancy fruit. Box apples are meeting a better demand and those are ruling firm and higher. Prices are ranging about as follows: Baldwins, $3.50 to $5.50; Ben Davis, $3 to $4.50; Ganos, $3 to $4.50; Greenings, $3.50 to $6; Kings, $4 to $6; Hubbardstons, $3.50 to $5. Northern Spys, $3.50 to $5.50; Stayman Winesaps, $4 to $6; York Imperials, $3.50 to $5.25; Winesaps, $3.50 to $6; Rome Beauty, $5 to $6. Box apples are selling on the following basis: Rome Beauty, $2 to $2.25; Spitz, $2 to $2.50; Stayman Winesaps, $2 to $2.50; Delicious, $2.50 to $3; Pearmain, $2 to $2.50; Winesaps, $2 to $2.50. Only a limited number of pears are being placed on the market, but the demand is equally as limited with prices ranging from $1.50 to $2.50 per barrel as to quality. There are still a few cranberries left in the market which are being held very firm at $16 to $18 per barrel. Strawberries, while still in very light supply, are gradually increasing in quantity and it is not believed that the present prices of 60 to 65 cents a quart will hold very long.

Poultry

Supplies of practically all kinds of dressed poultry have been very light and the market is ruling strong and active. Very few fancy turkeys have been on the market and sales are being made at 35 to 40 cents per pound. Fowls are also selling quickly with the large heavy fat sizes commanding 30 to 32 cents and smaller 27 to 29 cents. Fancy soft medium roasting chickens are also very scarce and readily bring 30 to 32 cents per pound, with smaller sizes ranging from 26 to 28 cents. There is a good demand for old roosters at 23 to 24 cents, and ducks are meeting a good inquiry at 27 to 30 cents.

Live poultry is also ruling firm and active, with fowls drawing 28 to 31 cents, and spring chicks, 26 to 30 cents. Fancy broilers are very scarce and realizing very good prices, some nearby selling at 40 to 45 cents per pound. Ducks are in good demand at 28 to 30 cents. Geese are in light supply and steady at 26 to 28 cents. Live turkeys are drawing 27 to 30 cents.

Eggs

Altho supplies of eggs are still very light they are gradually increasing and prices are somewhat lower than last week. It is a season of the year when supplies should start to come freely and while the prices may be expected to decline at any time the present outlook is for a firm market as advices indicate light supplies in transit. Nearby firsts are now selling around 63c with western at 63 to 64c, and Southern at 58 to 63c. Fancy selected graded and candled eggs are being jobbed at 75 cents a dozen; seconds at 72 cents a dozen.

YORK PRODUCE MARKET

York, Pa., Feb. 4, 1918.

With the exception of eggs and butter there has been little change in the markets for the week. Eggs dropped to 52, 54 and 55 cents per dozen. It was not because of an over-supply. Butter, also is very weak. Those having regular customers continue to command the top price, others sell for anything customers are willing to pay.

Eggs.—52@60c per dozen.

Butter.—Country, 50@52c lb; separator, 52@55c lb. Milk, 10c quart.

Poultry.—Hens, 20@24c lb; dressed, 65c @$1.75 apiece.

Vegetables.—Potatoes, 12@20c ½ pk; few sales; $1@1.25 bushel. Lettuce, 5@15c hd. Cabbage, 4@10c hd. Beets, 5c bch. Radishes, 6c bch. Onions, 12@15c bx; 25@30c ½ pk. Lima beans, 35@40c qt. Soup beans, 12@18c pt. Celery, 5@10c stalk. Turnips, 20@25c ½ pk. Corn meal, 10@12c qt.

Fruit.—Apples, slow, 10@40c ½ pk. Pears, 5@10c bx.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c lb. Back-bone, 28@30c lb. Ribs, 32c lb. Tenderloin, 45@48c lb. Steak, 34@38c lb. Pudding, 24@30c lb. Lard, 32@35c lb. Cured hams, 40@45c whole.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 95c; rye, $1.75; bran, $2.40 cwt.; middlings, wide range of prices, $2.50@3 per cwt.

Wholesale Grain Market.—Wheat, $2.08; corn, $1.60; oats, 75c; rye, $1.45; bran, $45 ton; middlings, home-made, $50@57 ton.

LANCASTER PRODUCE

Lancaster, Pa., Feb. 4, 1918.

Thieves raided the Central Market House before trading started last Wednesday and with the aid, presumably, of a wagon got away with large quantities of meat and produce.

The feature of this morning's market was the decline in butter and egg prices due to an oversupply. Eggs sold as low as 53 cents, and butter brought 53 and 55 cents. The market was one of the most largely attended in many months.

Butter and Eggs.—Creamery butter, 55c; lb; country butter, 53@55c lb; fresh eggs, 53@55c dozen; storage eggs, 45c.

Poultry.—Dressed old chickens, $1.25@1.75; young dressed chickens, $1@1.25; live chickens, $1.75@2 per pair; old live chickens, 35c lb.

Vegetables.—Tomatoes, 20c per box; lima beans, 18c per pint; cauliflower, 18@20c; cabbage, 5@10c; sweet potatoes, 30c ½ pk; potatoes, 12@20c ¼ pk; turnips, 15c ½ pk.

Grain Market.—Milling wheat, $2; damp wheat, $1.80; new ear corn, $1.60; rye, $1.65; oats, 65c; No. 1 timothy hay, $25; clover hay, $18; wheat straw, $12; oat straw, $10.

NEW YORK PRODUCE

New York City, Feb. 4, 1918.

Butter market opens firm. Cheese steady. Egg trading quiet. Dressed poultry quiet. High grade potatoes steady. Onions higher. Fancy apples firm.

Butter.—Creamery, extras, (92 score), per pound, 51½c; higher score, 52@52¼c; thirds to firsts, 41@51c; state dairy, 42@51c; ladles, 37@40c.

Cheese.—Colored specials, 26¼@26½c. Daisies, 26¾c.

Eggs.—Fresh gathered extras, 66c; extra firsts, 64½c; nearby white, fine to fancy, 62@66c; ordinary to good, 63@68c; browns, 66@67c.

Vegetables and Greens.—Beets, per 100 bunches, $2@4. Onions, per 100-lb. bag, $2@3. Potatoes, Jersey, $2.25@2.50 per 100 lbs; state and western, $2.42@2.80 100 lbs. Carrots, $2@3.50 per barrel.

Apples.—McIntosh, $4@6.50; York Imperial, $3.75@4.75; Twenty Ounce, $4@5.25; King, $4@5.50; Baldwin, $3.50@5.25.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 4, 1918.

Beef Cattle.—The market developed an easier tone on steers and cows in sympathy with the weakness at other points where supplies were more liberal. Arrivals here, however, were light and supplies were well cleaned up. Calves were slightly firmer.

Steers, best, $14; fair to good, $12@13; common, $10.50@11.50; bulls, $8.25@11.25; extra choice, higher; cows, fat, per lb., 9@10½c; extra choice, higher; medium, per lb., 7½@9c; ordinary, per lb., 6@7¼c; calves, exceptional lots, $17@18; good to choice, $15.50@16.50; medium, $14@15; common, $10@12; Tennessee and southern, $8@16.

Sheep and Lambs.—Transportation difficulties were holding up receipts and prices of sheep ruled steady under a fair demand. Lambs were more plentiful and weaker, but choice stock was in fair request.

Sheep.—Wethers, extra, $13.50@14; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $12@13. Lambs, choice, $19.25@19.50; do., medium, $17.50@18.50; inferior, $15@16.50.

Hogs.—Spot supplies were small and demand was fair at revised prices. Quotations for best western, $18.50.

City Dressed Stock.—The market ruled firm under light offerings and a fair demand and prices of calves were slightly higher. Hogs were more plentiful and weaker, but choice stock was in fair demand at revised figures.

Steers, 16½@22c; heifers, 16@20c; cows, 12@18c; calves, 24@25c; southerns and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 28@29c; extra, 30c; hogs, 25½c.

LANCASTER LIVE STOCK

Lancaster, Pa., Feb. 4, 1918.

Cattle.—Receipts, 1,770 head against 1,290 head last Monday. The market is slow; prices 25 to 50 cents lower.

Good to choice steers, $11.75@13.50; common to medium, $10@11; medium to good stockers, $8.25@9.25; common to medium stockers, $7.35@8.35; extra good feeders, $9.25@10.50; common to medium, $8.50@9.15; good to choice fat heifers, $10.40@11.40; medium to good cows, $9.25@10.35; bologna and fair flesh cows, $5.75@6.25; medium to good bologna bulls, $8.25@9.25; fat bulls, $9.75@10.75; good to choice stock heifers, $8.40@9.25; common to medium, $7.75@8.25; good to choice oxen, $9.40@11; common to medium, $7@8.25.

Hogs.—Receipts, 815 head; market active; prices steady; best grades, $17.50@18; roughs, $15.50@17.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 4, 1918.

Cattle slow; supply fair; prime, $13@13.50.

Sheep steady; supply 8 double-decks; prime wethers, $13@14; cull and common, $6@8; lambs, $14@18.25.

Veal calves, $16@16.50.

Hogs steady; receipts, 50 double-decks; mediums, $16.75; heavy yorkers, $16.85@16.90; light yorkers, $16.50@16.75; pigs, $16@16.50; roughs, $14.50@15.50.

NEW YORK LIVE STOCK

New York City, Feb. 4, 1918.

Beeves.—Receipts, 2,890; easy; steers, $11.25@13.65; bulls, $7.50@12.25; cows, $4.50@9.50.

Calves.—Receipts, 170; lower; veals, $15@18.75; barnyard calves, $8.50@9.50; western, $10@11.25.

Sheep and Lambs.—Receipts, 4,275; lower; sheep, $8.50@12; culls, $7@8; lambs, $17.50@19.25; culls, $14@16.

Hogs.—Receipts, 8,740; lower at $16.75@17; roughs, $16; pigs, $16.25@16.75.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Feb. 4, 1918.

Baled Hay and Straw.—Receipts, 24 tons of hay and 3 cars of straw. The hay market ruled firm and supplies were well cleaned up. Straw ruled firm, with some exceptional sales noted at a premium over quotations.

Large bales, $29.50@30; No. 1 small bales, $29.50@30; No. 2, $28@29; No. 3, $25@26; sample, $20@22; no grade, $16@18. Clover-mixed hay—Light mixed, $28@29; No. 1 do., $26.50@27.50; No. 2 do., $23.50@24.50.

Straw.—No. 1 straight rye, $18@18.50; No. 2 do., $17@17.50; No. 1 tangled rye, $16.50@17; No. 2 do., $15.50@16; No. 1 wheat straw, $15.50@16; No. 2 do., $14.50@15; No. 1 oat straw, $15.50@16; No. 2 do., $14.50@15.

Note.—A considerable proportion of the receipts of hay coming into this market is for export, and it is hard to determine with any degree of accuracy the total receipts for the local trade.

Bran.—Supplies were small and the market was nominal.

Wheat.—No. 2 red, $2.24.

Oats.—No. 2 white, 99½c@$1.00½.

NEW YORK HAY AND GRAIN

New York City, Feb. 4, 1918.

Feed.—There was no interest displayed in this market today. Offerings on the spot market are reduced to a minimum, and the big Northwestern mills are busy on contract orders. There is a little for sale in transit from second hands, and asking prices are somewhat higher than recently, averaging from $46 to $48 per ton for bran and middlings. Transportation facilities naturally act against the market and long delays in delivery to consuming centers tend to take away considerable interest in the market situation.

No spot quotations are available.

Hay and Straw.—There is a stronger market at Thirty-third street hay warehouse. Offerings are light there; about ten cars were unloaded on Saturday, only one on Sunday and about nine cars are being worked on today. Somewhat higher prices have been paid at that point, and buyers in need of goods have been forced to go to Brooklyn for supplies. There has been some improvement at the latter point, tho prices are still averaging about $1@2 under Thirty-third street. At 130th street and Melrose Junction offerings are heavy, there is of necessity prompt selling on account of heavy demurrage charges and we note no improvement in the situation as yet. This great divergence in values at the different harbor points necessitates a wide range in quotations. Rye straw quiet with only peddling business above $21.

Hay.—Prime, No. 1, $36@38. Fancy mixed clover, $33@36. No. 1 clover, $26@27.

GRASS SEED MARKET

Toledo, O., Feb. 4, 1918.

Cloverseed.—Prime cash, old, $20; November, $20.20; February, $20.20; March, $19.70.

Alsike.—Prime February, $19.80; March, $17.

Timothy.—Prime cash, old, $4; new, $4.10; March, $4.20.

WOOL TRADE REVIEW

The Boston "Commercial Bulletin" of Feb. 2 says:

"The past week has been a quiet one in the wool market, altho not altogether uninteresting. Some business is being done more or less steadily, so that prices keep fairly firm. Manufacturers report fair business on newly opened civilian fabrics."

Ohio and Pennsylvania fleeces: Delaine washed, 83@85c; delaine unwashed, 75@76c; ½-blood combing, 77@78c; ⅜-blood combing, 77@78c.

Michigan and New York fleeces: Fine unwashed, 63@64c; delaine unwashed, 73c; ½-blood unwashed, 75@77c; ⅜-blood unwashed, 76@77c.

Wisconsin, Missouri and average New England: ½-blood, 70@72c; ⅜-blood, 75@76c; ¼-blood, 74@76c.

Virginia, Kentucky and similar: ½-blood unwashed, 77@78c; ⅜-blood unwashed, 73@79c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Feb. 4, 1918.

Butter.—The market ruled firm under light receipts of both solid-packed creamery and prints, but, as usual on Saturdays, there was not much doing on the wholesale market.

Western, fresh solid-packed creamery extra, 52c; higher-scoring goods, 53@54c; extra firsts, 49@50c; firsts, 47@48c; seconds, 45@46c; sweet creamery, extra, 53c; under grades, 50@52c; nearby prints, fancy, 56c; do., average extra, 53@55c; firsts, 48@50c; seconds, 45@47c; special brands jobbing at 57@59c.

Cheese.—The market ruled very firm, with a fair demand.

New York, full cream, fancy June, 26½@27c; specials higher; do., September made, 26c; do., fair to good, 23@25c.

NEW YORK MILK MARKET

New York City, Feb. 4, 1918.

The market is closely balanced. The unusual characteristic of the market thru January was the comparative freedom from surplus. Ordinarily there is a surplus in this month. The extreme cold weather had a bearing on this situation. Trains are still irregular. The Federal Milk Commission cut the January rate for February to the extent the producer of Grade B in the first district It set the retail price for bottled delivered milk at 14½ cents and the wholesale rate for milk at 11¼ cents. The February rates to the produce of Grade B in the first district are $3.34 a hundred for 3 percent; $3.58, or approximately 7.6 cents a quart, for 3.6 percent; and $3.74 for 4 percent.

Receipts of milk and cream in cans for the week ending February 2 were as follows:

Railroad	Milk	Cream
Erie	38,257	2,100
Susquehanna	5,956	35
West Shore	9,475	812
Lackawanna	55,190	1,075
N. Y. Central (long haul)	98,913	1,287
Ontario	35,300	1,554
Lehigh Valley	43,367	515
New Haven	6,478	
Pennsylvania	9,750	168
Other sources	5,786	150
Totals	308,472	7,696
Same week last year	340,730	9,400

TOBACCO MARKET

Altho but little of the 1917 crop remains unsold, it seems that the last crop will be be promptly sought. The grower who had the discretion and nerve to hold on and who probably was offered $18 or $20 in the fall can now see an advance of several dollars per cwt. which of course, is net gain. It has been significantly said that there never was a tobacco crop on which the very last holders did not make money. As an extreme illustration we may cite the inferior and long rejected 1909 crop which passed into the hands of dealers almost for a song but the latter who had the patience to hold on were well rewarded in the end. The predominant cold weather seriously retarded stripping and delivery, the cold penetrating even the best casing cellars making tobacco temporarily dry and harsh. However, some of those who have but a small product have delivered the same under adverse conditions. An informed observer has suggested the introduction of southern and western tobacco selling methods into the Pennsylvania locality. It may be said that by the suggested plan tobacco is not sold until ready for delivery when it is brought to an auction market where it is unloaded on platters called "baskets", weighed, and offered to the highest bidder. Thus, sellers are given full advantage of an equitable but generally well controlled market price. Buyers for the large factories are at such markets where they have packing rooms in which to receive their purchases and pack the same into hogsheads after which it is forwarded to factory. It is conceded that this is the best method of selling tobacco that has yet been devised.—H. E. Tweed, Feb. 4, 1918.

NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

CHAPTER XXIX (Continued.)

Of all the confused impressions that crowded Nan's memory after the wild night on Music Mountain, the most vivid was that of a noticeably light-stepping and not ungraceful fat man advancing, hat in hand, to greet her as she stood with de Spain, weary and bedraggled in the aspen grove.

A smile flamed from her eyes when, turning at once, he rebuked de Spain with dignity for not introducing him to Nan, and while de Spain made apologies Lefever introduced himself.

"And is this," murmured Nan, looking at him quizzically, "really Mr. John Lefever whom I've heard so many stories about?"

She was conscious of his pleasing eyes and even teeth as he smiled again. "If they have come from Mr. de Spain—I warn you," said John, "take them with all reserve."

"But they haven't all come from Mr. de Spain."

"If they come from any of my friends, discredit them in advance. You could believe what my enemies say," he ran on; then added ingenuously, "if I had any enemies!" To de Spain he talked very little. It seemed to take but few words to exchange the news. Lefever asked gingerly about the fight. He made no mention whatever of the crimson pool in the road near Sassoon's hut.

The house in the Gap that had sheltered Nan for many years seemed never so empty as the night she left it with de Spain. In spite of his vacillation, her uncle was deeply attached to her. She made his home for him. He had never quite understood it before, but the realization came only too soon after he had lost her. And his resentment against Gale as the cause of her leaving deepened with every hour that he sat next day with his stubborn pipe before the fire. Duke had acceded with much reluctance to the undertaking that was to force her into a marriage. Gale had only partly convinced him that once taken, the step would save her from de Spain and end their domestic troubles. The failure of the scheme left Duke sullen, and his nephew sore, with humiliation.

In spite of the alarms and excitement of the night, of Gale's determination that de Spain should never leave the Gap with Nan, and of the rousing of every man within it to cut off their escape, Duke stubbornly refused to pursue the man he so hated or even to leave the house in any effort to balk his escape. But Gale, and Sassoon who had even keener reason for hating de Spain, left Duke to sulk as he would, and set about getting the enemy without any help from the head of the house. In spite of the caution with which de Spain had covered his movements and the flood and darkness of the night, Sassoon by a mere chance had got wind thru one of his men of de Spain's appearance at Duke Morgan's, and had begun to plan, before Nan and de Spain had got out of the house, how to trap him.

Duke heard from Pardaloe, during the night and the early morning, every report with indifference. He only sat and smoked, hour after hour, in silence. But after it became known that de Spain had, beyond doubt, made good his escape, and had Nan with him, the old man's sullenness turned into rage; and when Gale, rankling with defeat, stormed in to see him in the morning, he caught the full force of Duke's wrath. The younger man, taken aback by the outbreak and in drink himself, returned his abuse without hesitation or restraint. Pardaloe came between them before harm was done, but the two men parted with the anger of their quarrel deepened.

When Nan rode with de Spain into Sleepy Cat that morning, Lefever had already told their story to Jeffries over the telephone from Calabasas, and Mrs. Jeffries had thrown open her house to receive Nan. Weary from exposure, confusion, and hunger, Nan was only too grateful for a refuge.

On the evening of the second day de Spain was invited to join the family at supper. In the evening the Jeffries went down-town.

De Spain was talking with Nan in the living room when the telephone bell rang in the library.

De Spain took the call, and a man's voice answered his salutation. The speaker asked for Mr. de Spain and seemed particular to make sure of his identity.

"This," repeated de Spain more than once, and somewhat testily, "is Henry de Spain speaking."

"I'd like to have a little talk with you, Mr. de Spain."

"Go ahead."

"I don't mean over the telephone. Could you make it convenient to come down-town somewhere, say to Tenison's, any time this evening?"

The thought of a possible ambuscade deterred the listener less than the thought of leaving Nan, from whom he was unwilling to separate himself for a moment. Likewise, the possibility of an attempt to kidnap her in his absence was not overlooked. On the other hand, if the message came from Duke and bore some suggestion of a compromise in the situation, de Spain was unwilling to lose it. With these considerations turning in his mind, he answered the man brusquely: "Who are you?"

The vein of sharpness in the question met with no deviation from the slow, even tone of the voice at the other end of the wire. "I am not in position to give you my name," came the answer, "at least, not over the wire."

A vague impression suddenly crossed de Spain's mind that somewhere he had heard the voice before. "I can't come down-town tonight," returned de Spain abruptly. "If you'll come to my office tomorrow morning at nine, I'll talk with you."

A pause preceded the answer. "It wouldn't hardly do for me to come to your office in daylight. But if it would, I couldn't do it tomorrow, because I shan't be in town in the morning."

"Where are you talking from now?"

"I'm at Tenison's place."

"Hang you," said de Spain instantly, "I know you now." But he said the words to himself, not aloud.

"Do you suppose I could come to where you are tonight for a few minutes' talk?" continued the man coolly.

"Not unless you have something very important."

"What I have is more important to you than to me."

De Spain took an instant to decide. "All right," he said impatiently; "come along. Only—" he paused to let the word sink in, "—if this is a game you're springing——"

"I'm springing no game," returned the man evenly.

"You're liable to be one of the men hurt."

"That's fair enough."

"Come along, then."

"Mr. Jeffries' place is west of the courthouse?"

"Directly west. Now, I'll tell you just how to get here. Do you hear?"

"I'm listening."

"Leave Main Street at Rancherio Street. Follow Rancherio north four blocks, turn west into Grant Avenue. Mr. Jeffries' house is on the corner."

"I'll find it."

"Don't come any other way. If you do, you won't see me."

"I'm not afraid of you, Mr. de Spain, and I'll come as you say. There's only one thing I should like to ask. It would be as much as my life is worth to be seen talking to you. And there are other good reasons why I shouldn't like to have it known I had talked to you. Would you mind putting out the lights before I come up—I mean in the front of the house and in the room where we talk?"

"Not in the least. I mean—I am always willing to take a chance against the other man's. But I warn you, come prepared to take care of yourself."

"If you will do as I ask, no harm will come to any one."

De Spain heard the receiver hung up at the other end of the wire. He signalled the operator hastily, called for his office, asked for Lefever, and, failing to get him, got hold of Bob Scott. To him he explained rapidly what had occurred, and what he wanted. "Get up to Grant and Rancherio, Bob, as quick as the Lord will let you. Come by the back streets. There's a high mulberry hedge at the southwest corner you can get behind. This chap may have been talking for somebody else. Anyway, look the man over when he passes under the arc-light. If it is Sassoon or Gale Morgan, come into Jeffries' house by the rear door. Wait in the kitchen for my call from the living-room, or a shot. I'll arrange for your getting in."

Leaving the telephone, de Spain rejoined Nan in the living-room. He told her briefly of the expected visit and explained, laughingly, that his caller had asked to have the lights out and to see him alone.

Nan, standing close to him, her own hand on his shoulder and her curling hair against his scarred cheek, asked questions about the incident because he seemed to be holding something back. She professed to be satisfied when he requested her to go up to her room and explained it was probably one of the men coming to tell

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about some petty thieving on the line or of a strike brewing among the drivers. He made so little of the incident that Nan walked up the stairs on de Spain's arm reassured. When he kissed her at her room door and turned down the stairs again, she leaned in the half-light over the banister, waving one hand at him and murmuring the last caution: "Be careful, Henry, won't you?"

"Dearie, I'm always careful."

"'Cause you're all I've got now," she whispered.

"You're all I've got, Nan, girl."

"I haven't got any home—or anything—just you. Don't go to the door yourself. Leave the front door open. Stand behind the end of the piano until you are awfully sure who it is."

"What a head, Nan!"

De Spain cut off the lights, threw open the front door, and in the darkness sat down on the piano stool. A heavy step on the porch, a little while later, was followed by a knock on the open door.

"Come in!" called de Spain roughly. The bulk of a large man filled and obscured for an instant the opening, then the visitor stepped carefully over the threshold. "What do you want?" asked de Spain without changing his tone. He awaited with keenness the sound of the answer.

"Is Henry de Spain here?"

The voice was not familiar to de Spain's ear. He told himself the man was unknown to him. "I am Henry de Spain," he returned without hesitation. "What do you want?"

The visitor's deliberation was reflected in his measured speaking. "I am from Thief River," he began, and his reverberating voice was low and distinct. "I left there some time ago to do some work in Morgan's Gap. I guess you know full as well as I do, that the general office at Medicine Bend has its own investigators, aside from the division men. I was sent in to Morgan's Gap some time ago to find out who burned the Calabasas barn."

"Railroad man, eh?"

"For about six years."

"And you report to——?"

"Kennedy."

De Spain paused in spite of his resolve to push the questions. While he listened a fresh conviction had flashed across his mind. "You called me up on the telephone one night last week," he said suddenly.

The answer came without evasion. "I did."

"I chased you across the river?"

"You did."

"You gave me a message from Nan Morgan that she never gave you."

"I did. I thought she needed you right off. She didn't know me as I rightly am. I knew what was going on I rode into town that evening and rode out again. It was not my business and I couldn't let it interfere with the business I'm paid to look after. That's the reason I dodged you"

"There is a chair at the left of the door; sit down. What's your name?"

The man, feeling around slowly, deposited his angular bulk with care upon the little chair. "My name"—in the tenseness of the dark the words seemed to carry added mystery—" is Pardaloe."

"Where from?"

"My home is southwest of the Superstition Mountains."

"You've got a brother—Joe Pardaloe?" suggested de Spain to trap him.

"No, I've got no brother. I am just plain Jim Pardaloe."

"Say what you have got to say, Jim."

"The only job I could get in the Gap was with old Duke Morgan—I've been working for him off and on, and spending the rest of my time with Gale and Dave Sassoon. There were three men in the barn-burning. Dave Sassoon put up the job."

"Where is Dave Sassoon now?"

"Dead."

"What do you mean?"

"I mean what I say."

Both men were silent for a moment.

"Yesterday morning's fight?" asked de Spain reluctantly.

"Yes, sir."

"How did he happen to catch us on El Capitan?"

"He saw a fire on Music Mountain and watched the lower end of the Gap all night. Sassoon was a wide-awake man."

"Well, I'm sorry, Pardaloe," continued de Spain after a moment. "Nobody could call it my fault. It was either he or I—or the life of a woman who never harmed a hair of his head, and a woman I'm bound to protect. He was running when he was hit. If he had got to cover again there was nothing to stop him from picking both of us off. I shot low—most of the lead must have gone into the ground."

"He was hit in the head."

De Spain was silent.

"It was a soft-nose bullet," continued Pardaloe.

Again there was a pause. "I'll tell you about that, too, Pardaloe," de Spain went on collectedly. "I lost my rifle before that man opened fire on us. Nan happened to have her rifle with her—if she hadn't, he'd 've dropped one or both of us off El Capitan. We were pinned against the wall like a couple of targets. If there were soft-nose bullets in her rifle its because she uses them on game—bobcats and mountain lions. I never thought of it until this minute. That is it."

"What I came up to tell you has to do with Dave Sassoon. From what happened today in the Gap I thought you ought to know it now. Gale and Duke quarrelled yesterday over the way things turned out; they were pretty bitter. This afternoon Gale took it up again with his uncle, and it ended in Duke's driving him clean out of the Gap."

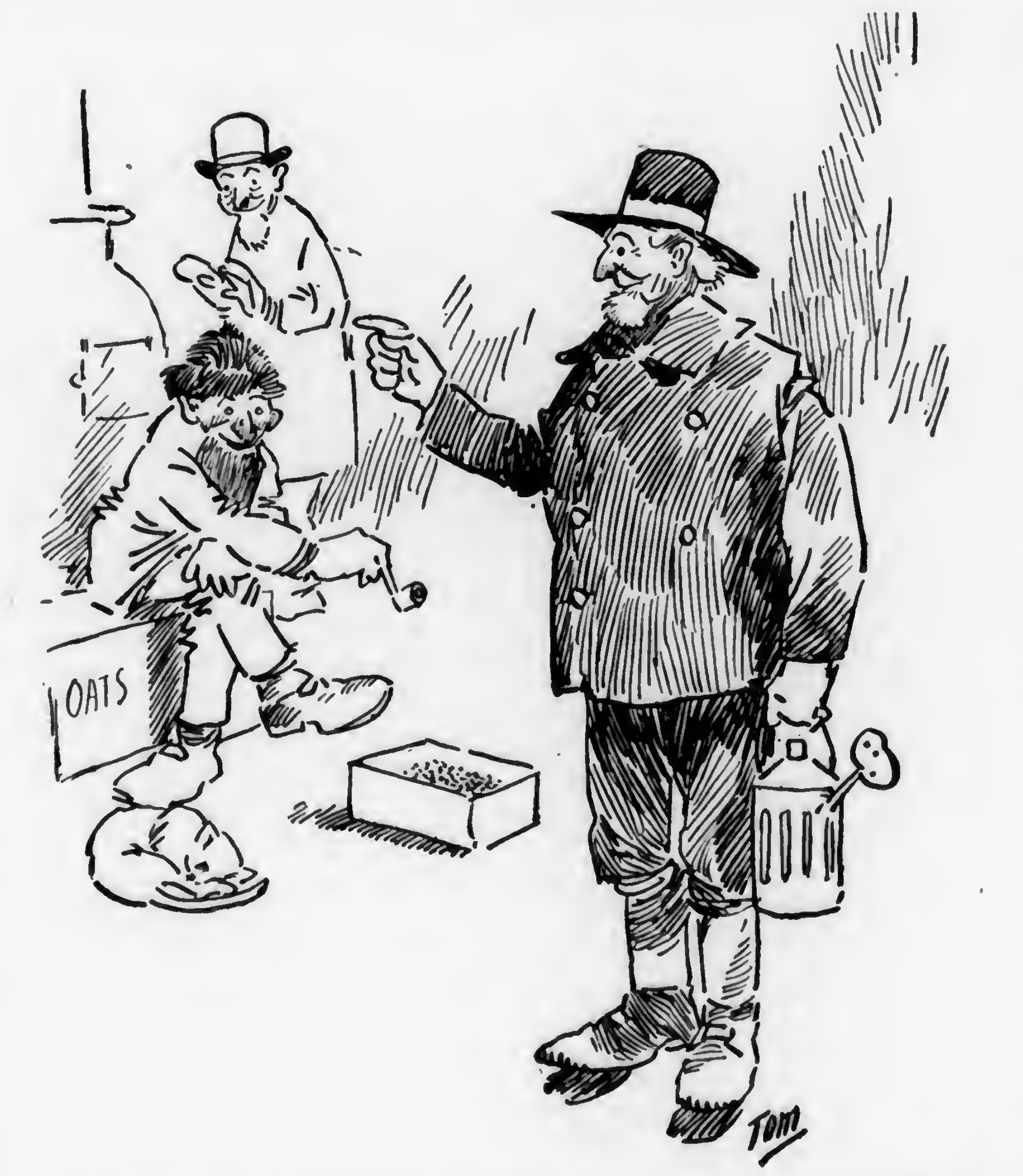
"Where has he gone?"

"Nobody knows yet. Ed Wickwire told me once that your father was shot from ambush a good many years ago. It was north of Medicine Bend, on a ranch near the Peace River; that you never found out who killed him, and that one reason why you came up into this country was to keep an eye out for a clew."

"What about it?" asked de Spain, his tone hardening.

"I was riding home one night about a month ago from Calabasas with Sassoon. He'd been drinking. I let him do the talking. He began cussing you out, and talked pretty hard about what you'd done, and what he'd done, and what he was going to do—" Nothing, it seemed, would hurry the story. "Finally, Sassoon says: 'That hound don't know yet who got his dad. It was Duke Morgan; that's who got him. I was with Duke when he turned the trick. We rode down to de Spain's ranch one night to look up a rustler.' That," concluded Pardaloe, "was all Sassoon would say."

He stopped. He seemed to wait. There was no word of answer, none of comment from the man sitting near him. But, for one, at least, who heard the passionless, monotonous recital of a murder of the long ago, there followed a silence as relentless as fate, a silence shrouded in the mystery of the darkness and striking despair into two hearts—a silence more fearful than any word.



Uncle Amos says: "You've settled a lot of paramount issues in that 'cracker-box Congress', but talk is out of style just at present and work and results are going to count most in our scrap with the paramount Kaiser".

Pardaloe shuffled his feet. He coughed, but he evoked no response. "I thought you was entitled to know," he said finally, "now that Sassoon will never talk any more."

De Spain moistened his lips. When he spoke his voice was cracked and harsh, as if with what he had heard he had suddenly grown old.

"You are right, Pardaloe. I thank you. I—when I—in the morning. Pardaloe, for the present, go back to the Gap. I will talk with Wickwire—tomorrow."

"Good night, Mr. de Spain."

"Good night, Pardaloe."

Bending forward, limp, in his chair, supporting his head vacantly on his hands, trying to think and fearing to think, de Spain heard Pardaloe's measured tread on the descending steps, and listened mechanically to the retreating echoes of his footsteps down the shaded street. Spain made no move. A step so light that it could only have been the step of a delicate girlhood, a step free as the footfall of youth, poised as the tread of womanhood and beauty, came down the stairs. Slight as she was, and silent as he was, she walked straight to him in the darkness, and, sinking between his feet, wound her hands thru his two arms. "I heard everything, Henry," she murmured, looking up. An involuntary start of protest was his only response. "I was afraid of a plot against you. I stayed at the head of the stairs. Henry, I told you long ago some dreadful thing would come between us—something not our fault.' And now it comes to dash our cup of happiness when it is filling. Something told me, Henry, it would come tonight—some bad news, some horror laid up against us out of a past that neither you nor I are to blame for. In all my sorrow I am sorriest, Henry, for you. Why did I ever cross your path to make you unhappy when blood lay between your people and mine? My wretched uncle! I never dreamed he had murder on his soul—and of all others, that murder! I knew he did wrong—I knew some of his associates were criminals. But he has been a father and mother to me since I could creep—I never knew any father or mother."

She stopped, hoping perhaps he would say some little word, that he would even pat her head, or press her hand, but he sat like one stunned. "If it could have been anything but this!" she pleaded, low and sorrowfully. "Oh, why did you not listen to me before we were engulfed! Oh dear Henry! You who've given me all the happiness I have ever had—that the blood of my own should come against you and yours!" The emotion she struggled with, and fought back with all the strength of her nature, rose in a resistless tide that swept her on, in the face of his ominous silence, to despair. She clasped her hands in silent misery, losing hope with every moment of his stoniness that she could move him to restraint or pity toward her wretched foster-father. She recalled the merciless words he had spoken on the mountain when he told her of his father's death. Her tortured imagination pictured the horror of the sequel, in which the son of the murdered man should meet him who had taken his father's life. The fate of it, the hopelessness of escape from its awful consequence, overcame her. Her breath, no longer controlled, came brokenly, and her voice trembled.

"You have been very kind to me, Henry—you've been the only man I've even known that always, everywhere, thought of me first. I told you I didn't deserve it, I wasn't worthy of it——"

His hands slipped silently over her hands. He gathered her close into his arms, and his tears fell on her upturned face.

CHAPTER XXX

Hope Forlorn

There were hours in that night that each had reason long to remember; a night that seemed to bring them, in spite of their devotion, to the end of their dream. They parted late, each trying to soften the blow as it fell on the other, each professing a courage which, in the face of the revelation, neither could clearly feel.

In the morning Jeffries brought down to de Spain, who had spent a sleepless night at the office, a letter from Nan.

De Spain opened it with acute misgivings. Hardly able to believe his eyes, he slowly read:

Dearest:

A wild hope has come to me. Perhaps we don't know the truth of this terrible story as it really is. Suppose we should be condemning poor Uncle Duke without having the real facts? Sassoon was a wretch, Henry, if ever one lived—a curse to every one. What purpose he could serve by repeating this story, which he must have kept very secret until now, I don't know; but there was some reason. I must know the whole truth—I feel that I, alone, can get hold of it, and that you would approve what I am doing if you were here with me in this little room, where I am writing at daybreak, to show you my heart.

Long before you get this I shall be speeding toward the Gap. I am going to Uncle Duke to get from him the exact truth. Uncle Duke is breaking—has broken—and now that the very worst has come, and we must face it, he will tell me what I ask. Whether I can get him to repeat this to you, to come to you, to throw himself on your pity, my dearest one, I don't know. But it is for this I am going to try, and for this I beg of your love—the love of which I have been so proud!—that you will let me stay with him until I at least learn everything and can bring the whole story to you. If I can bring him, I will.

And I shall be safe with him—perfectly safe. Gale has been driven away. Pardaloe, I know I can trust, and he will be under the roof with me. Please do not try to come to me. It might ruin everything. Only forgive me, and I shall be back with what I hope for, or what I fear, very, very soon. Not until then can I bear to look into your eyes. You have a better right than anyone in the world to know the whole truth, cost what it may. Be patient for only a little while with

Nan.

It was Jeffries who said, afterward, he hoped never again to be the bearer of a letter such as that. Never until he had read and grasped the contents of Nan's note had Jeffries seen the bundle of resource and nerve and sinew, that men called Henry de Spain, go to pieces. For once, trouble overbore him.

When he was able to speak he told Jeffries everything. "It is my fault," he said hopelessly. "I was so crippled, so stunned, she must have thought—I see it now—that I was making ready to ride out by daybreak and shoot Duke down on sight. Its the price a man must pay, Jeffries, for the ability to defend himself against this bunch of hold-up men and assassins. Because they can't get me, I'm a 'gunman'——"

"No, you're not a 'gunman.' "

"A gunman and nothing else. That's what everybody, friends and enemies, reckon me—a gunman. You put me here to clean out this Calabasas gang, not because of my good looks, but because I've been, so far, a fraction of a second quicker on a trigger than these crooks.

"I don't get any fun out of standing for ten minutes at a time with a sixty-pound safety-valve dragging on my heart, watching a man's eye to see whether he is going to pull a gun on me and knock me down with a slug before I can pull one and knock him down. I don't care for that kind of thing, Jeff. I'd rather have a little ranch with a little patch of alfalfa—enough alfalfa to feed a little bunch of cattle, a hundred miles from every living soul. What I would like to do is to own a piece of land under a ten-cent ditch, and watch the wheat sprout out of the desert."

Jeffries, from behind his pipe, regarded de Spain's random talk calmly.

"I do feel hard over my father's death," he went on moodily. "Who wouldn't? If God meant me to forget it, why did he put this mark on my face, Jeff? I did talk pretty strong to Nan about it on Music Mountain. She accused me then of being a gunman. It made me hot to be set down for a gunman by her. I guess I did give it back to her too strong. That's the trouble—my bark is worse than my bite—I'm always putting things too strong. I didn't know when I was talking to her then that Sandusky and Logan were dead. Of course, she thought I was a butcher. But how could I help it?

"I did feel, for a long time, I'd like to kill with my own hands the man that murdered my father, Jeff. My mother must have realized that her babe, if a man-child, was doomed to a life of bloodshed. I've been trying to think most of the night what she'd want me to do now. I don't know what I can do, or can't do, when I set eyes on that old scoundrel. He's got to tell the truth—that's all I say now. If he lies, after what he made my mother suffer, he ought to die like a dog—no matter who he is.

"I don't want to break Nan's heart. What can I do? Hanging him here in Sleepy Cat, if I could do it, wouldn't help her feelings a whole lot. If I could see the fellow—" de Spain's hands, spread before him on the table, drew up tight, "if I could get my fingers on his throat, for a minute, and talk to him, tell him what I think of him—I might know what I would want to do—Nan might be there to see and judge between us. I'd be almost willing to leave things to her to settle herself. I only want what's right. But," the oath that recorded his closing threat was collected and pitiless, "if any harm comes to that girl now from this wild trip back among those wolves—God pity the men that put it over. I'll wipe out the whole accursed clan, if I have to swing for it right here in Sleepy Cat!"

John Lefever, Jeffries, Scott in turn took him in hand to hold him during the three days, to restrain the fury of his resentment, and keep him from riding to the Gap in a temper that each of them knew would mean only a tragedy worse than what had gone before. Mountain-men who happened in and out of Sleepy Cat during those three days remember how it seemed for that time as if the attention of every man and woman in the whole country was fixed on the new situation that balked de Spain. They knew only that Nan had gone back to her people, not why she had gone back; but the air was eager with surmise and rumor as to what had happened, and in this complete overturning of all de Spain's hopes, what would happen before the story ended.

Even three days of tactful representation and patient admonition from cool-headed counsellors did not accomplish all they hoped for in de Spain's attitude. His rage subsided, but only to be followed by a settled gloom that they knew might burst into uncontrollable anger at any moment.

A report reached McAlpin that Gale Morgan was making ready to return to Music Mountain with the remnant of Sandusky's gang, to make a demand on Duke for certain property and partnership adjustments. This rumor he telephoned to Jeffries. Before talking with de Spain Jeffries went over the information with Lefever. The two agreed it was right, in the circumstances, that de Spain should be nearer than Sleepy Cat to Nan. Moreover, the period of waiting she had enjoined on him was almost complete.

Without giving de Spain the story fully, the two men talking before him let the discussion drift toward a proposal on his part to go down to Calabasas, where he could more easily keep track of any movement to or from the Gap, and this they approved. De Spain, already chafing under a hardly endured restraint, lost no time in starting for Calabasas, directing Lefever to follow next day.

It added nothing to his peace of mind in the morning to learn definitely from McAlpin that Gale Morgan, within twenty-four hours, had really disappeared from Calabasas. No word of any kind had come from Music Mountain for days. No one at Calabasas was aware even that Nan had gone into the Gap again. Bob Scott was at Thief River. De Spain telephoned to him to come up on the early stage, and turned his attention toward getting information from Music Mountain without violating Nan's injunction not to frustrate her most delicate effort with her uncle.

As a possible scout to look into her present situation and report on it, McAlpin could point only to Bull Page. Bull was a ready instrument, but his present value as an assistant had become a matter of doubt, since practically every man in the Gap had threatened within the week to blow his head off—tho Bull himself felt no scruples against making an attempt to reach Music Mountain and get back again. It was proposed by the canny McAlpin to send him in with a team and light wagon, ostensibly to bring out his trunk, which, if it had not been fed to the horses, was still in Duke's barn. As soon as a rig could be got up Page started out.

(To be continued.)

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The Eastern Oklahoma Farm Bureau has no land for sale; it has listed a number of farms for farmers looking for low-priced land that will bring them big returns.
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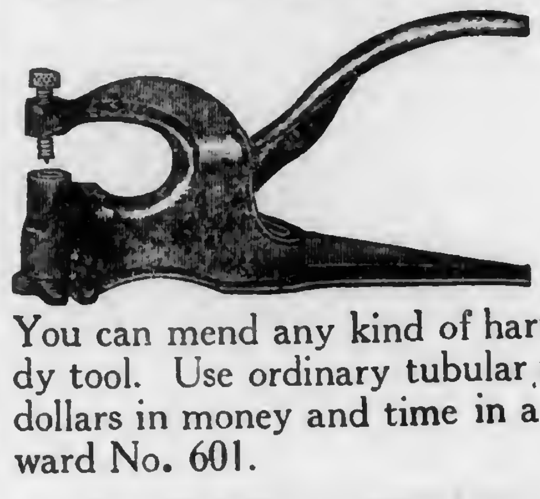

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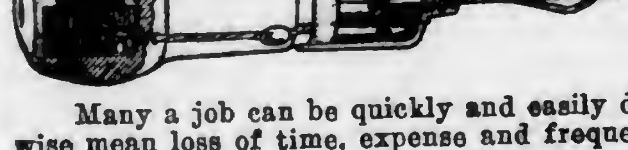

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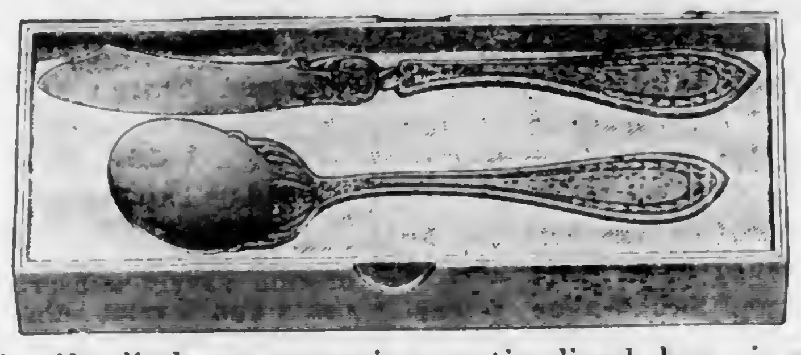

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COUNTY NOTES

Mifflin Co., Pa., (C.) Jan. 14. — Weather has been cold since our last report with some snow falls. Good sleighing part of the time. Zero weather the last week, good sleighing the last few days. Live stock not much doing. Dressed beef, 15@17c by the quarter; hogs, dressed, 20c lb; small pigs, $5 apiece and scarce; butter, 50c; eggs, 50c; apples, $1 bu. Farmers doing the chores, putting up ice, hauling wood, and keeping things from freezing.—J. H. Byler.

Lebanon Co., Pa., (S.E.) Jan. 16. —Weather is cold and stormy, with 6 inches of snow on the ground. Some of the fields are covered with a thin coating of ice from which the snow has blown, which is bad for the wheat. The lowest temperature for the year in this county was 12 degrees below zero. Tobacco stripping is progressing favorably but nearly all other farm operations are at a standstill, owing to the prolonged cold weather. Many of our young farmers were busy the past two weeks in filling out and handing in their questionnaires. Milk is $3.15; corn. $1.70; oats, 90c; potatoes, $1.30 bu. Butter is 56c country, and 65c creamery per lb. Eggs are 56c dozen. The Farmers' Congresses in the general stores and postoffices are well attended these cold winter evenings.—Leonard F. Strickler.

Lancaster Co., Pa., (S.E.) Jan. 14. —Genuine winter weather. Scarely any thawing the last month. Coldest was 15 degrees below. There is much snow, and very icy at present. Ice houses are being filled with 17-inch ice. Extremely cold weather has been very hard on pigs; many contracting cold and dying. Other live stock is in good condition. Ice on the wheat fields will likely be hard on the winter wheat which made a poor growth last fall. Still quite a little corn in the field to be husked. Much fodder to be hauled. In some sections the corn was not cut, due to lack of help. Farmers are marketing wheat at $2; corn, $1.65; oats, 65c; hay, $25; straw, $12. Very little outside work can be done at present. Farmers are busy stripping and marketing tobacco.—J. Henry Haverstick.

BEST OF FOURTEEN

I have noticed that if certain conditions are not complied with, it will be necessary to remove my name from your mailing list. For Heaven's sake don't! I know that you would not thoughtlessly or without due deliberation injure anyone, and it would be a positive injury to be deprived of Pennsylvania Farmer. I read fourteen different periodicals and, in my estimation, your paper is the best thing in its line. Find check enclosed for a five-year subscription.—Walter N. Lodge, Rutledge, Pa.

CARS FOR POTATO SHIPMENT

Mr. Heinz, Federal Food Administrator for Pennsylvania, has issued a statement requesting potato growers of Pennsylvania who are experiencing a shortage of cars for shipping potatoes, to advise him of the point or points from which they desire to make shipment and the number of cars which they will require. Their car needs will then be taken up at once for immediate consideration and action. Address Howard Heinz, Bulletin Building, Phila., Pa.

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The total acreage sown to crops in 1917 in the uninvaded portion of France showed a decrease of 24.4 percent from the acreage in 1913. The burden of agriculture which has rested since the war on old men, women and children will be lightened considerably by the 1,500 farm tractors being shipped to France this winter by the U. S. Food Administration.

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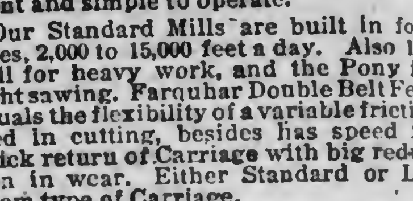

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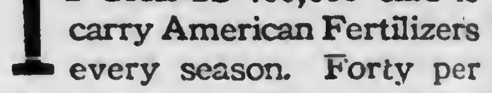

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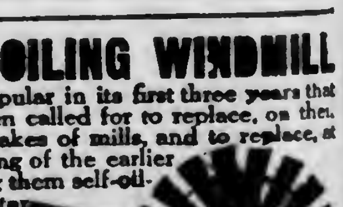

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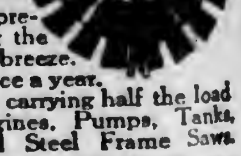

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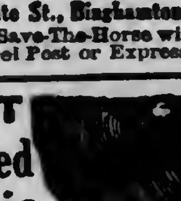

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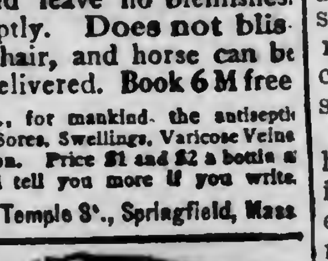

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Heifer Coughs. — Indigestion. — Some time ago I saw an answer to a question concerning lung worms, but have mislaid the paper. We have a heifer two years old next July that was always in good condition up to a year old, at which time we put her in an old pasture lot. Since bringing her in again she has coughed a good bit, is poor, but continues to grow. She will freshen in April or May. She has a good appetite, is fed corn fodder, plenty of good hay with a bran slop once a day. A. R. A., Clearfield, Pa.—I am inclined to believe that your heifer needs more grain and perhaps some roots. Also give her two tablespoonfuls of the following compound powder at a dose in feed two or three times a day. Mix together equal parts by weight cooking soda, common salt, ginger, gentian, red cinchona and powdered wood charcoal. I do not believe that she suffers from lung worms.

Impure Blood — Collar Boils. — I have an eight-year-old mare that is in a run-down condition. She has collar boils on shoulders and top of neck, which after a time seem to heal. Other boils soon form and open. This mare had a colt last May and has worked hard since August. I have noticed that she passes urine about twelve times every 24 hours. The quantity of water passed varies, is of a whitish color and too thick. She seems to be hearty, is fed ground feed and mixed hay. H. R. B., Horseheads, N. Y.—Give her a teaspoonful acetate of potash at a dose in either feed or drinking water, twice a day, until her kidneys act regularly but less frequently. Also, give her 30 drops fluid extract nux vomica, one ounce tincture gentian and one ounce tincture cinchona at a dose in feed or drinking water, three times a day.

Wire Cut.—I have a colt two years old that met with a mishap, cutting right hind leg on barbed wire only a few days ago. I have been applying coal tar disinfectant, one part and forty parts water, but the wound seems to be filling up with some proud flesh. If this colt gets in the same condition of a four-year-old that met with a similar accident a little more than a year ago, he will be left in bad shape. A large bunch of raw looking flesh formed in wound and our local veterinarian failed to prevent its growing. How shall I treat this case? U. L. S., Hublersville, Pa. —First of all, a wound of this kind should be promptly treated and the treatment kept up faithfully until the wound heals. Nearly all wounds become filthy from neglect or become infected on account of filthy surroundings. Therefore, in order to obtain satisfactory results in wound healing, the right thing should be done at time of accident. Irrigate wound with salt and water, a teaspoonful to each pint of clean boiled water. A stream of this fluid should be turned on wound and kept on it for an hour. This harmless solution will have the effect of ridding the cut of a whole lot of dirt and infecting germs which would otherwise do a lot of harm. Then dissolve ¼ oz of permanganate of potash in eight or ten ounces of either distilled or clean boiled water, then paint wound with a brush, three times a day, with this solution. Before making the application, shake the bottle and do not neglect to keep up this treatment until the wound heals. Furthermore, paint only the raw surfaces, and you will obtain fairly satisfactory results. Another very good wound application is one part iodoform and nine parts boric acid or charcoal.

FOREST NOTES

The total amount of timber cut on the National Forests in the fiscal year 1917 was 840,612,000 board feet, as against 714,505,000 board feet in 1916.

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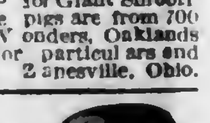

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THE KEYSTONE OF
NATIONAL PROSPERITY

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New Problems For Market Gardeners

Timely Suggestions in Preparation For The Growing Season

By DEAN R. L. WATTS

"Within a few months there will be the worst glut of vegetables on our city markets the country has ever known." This was the prophesy of a prominent commercial grower. It was made last spring when all the press and agricultural agencies were pushing the gardening movement. Lawns and parks were being plowed, for cabbages and onions were to take the place of roses and lilies. Tin cans and piles of ashes disappeared from thousands of vacant lots which were soon to be transformed into vegetable gardens. Commercial growers were urged to speed up, to plant more acres, to work harder. No wonder our friend and many of his brother gardeners were alarmed over the financial outlook! The situation, as they saw it, was not at all encouraging, to say the least.

But the countrywide glut of vegetables did not occur. It is true that too many vegetables were offered for sale on certain markets during the season, but this happens every year. The fact is that market conditions as a whole were highly satisfactory. We soon discovered that folks were eating more vegetables. High food prices and the advocacy of meatless and wheatless meals brought the whole list of vegetables into the limelight. Golden Bantam sweet corn, creamed onions, baked squash, and dozens of other vegetables, as delectably prepared, suddenly became very popular. Even some of the city folks said that sour kraut was a delicious dish.

Then came along the food conservation campaign. The edict went forth that nothing should be wasted. The home garden crops were generally saved in some way. When this source of supply became exhausted an army of housekeepers bought tomatoes, beans, corn and many other vegetables for canning or drying. This general movement, in addition to the larger daily consumption of vegetables, resulted in an unprecedented demand.

Spraying With Lime and Paris Green

The Profits?

But how about the profits of the trucker and market gardener for the 1917 season? Were they as large as usual? While prices were generally good, did increased costs and labor difficulties have a discouraging effect, so that growers will be inclined to plant less extensively in 1918?

I have discussed these questions with large growers from many of the states. Some claim that their profits last year were highly satisfactory, others contend that profits were no larger than usual, and that they will be conservative in their plans for 1918. Every factor in the cost of production, with the single exception perhaps of interest or rental on land, was larger than for a number of years. In some sections labor costs almost doubled. All kinds of seeds sold at higher prices than during the preceding years. The purchase of commercial fertilizers, lime and stable manure called for a larger expenditure. Garden tools and implements were higher in price, and feed for the horses, or gasoline for the tractor and truck, required a greater outlay. It is readily seen that production costs in 1917 were far above normal, and that gardeners who did not fare well in marketing their produce will naturally be very careful in making their plans for 1918.

But Uncle Sam can count on the commercial vegetable growers doing their best and not merely their bit in helping to provide an adequate food supply. They are just as patriotic as any other class of people. A vast army of them will march to the fields next spring determined to make a mighty drive against the enemy by growing bumper crops of vegetables for the soldier boys as well as for the civilian population. Our commercial growers, however, are facing hard problems. Some of their problems are common to other branches of farming, and to industries not related to agriculture. The labor question, for example, strikes every industry, altho it is more serious to the market gardener and trucker than to producers in many other industries, because he cannot compete with them in the wages paid.

Labor Problem

There is absolutely no doubt about the labor problem being the most serious matter that confronts our commercial vegetable growers. It is by no means merely a question of remuneration, but the big problem is, can the required help be found even at abnormal wages? It is the consensus of opinion among growers that this big problem can not and will not be solved without Uncle Sam's active assistance. Many of our skilled young gardeners have already gone into the service of the army and navy, and thousands of them have been attracted to the mines, mills, and factories by wages which no class of farmers can afford to pay. Years of experience are required to learn how to successfully operate a market garden or a truck farm, and the loss or withdrawal of those who have become skilled in garden management will be certain to result in decreased production. Such persons within the draft age should be conscripted by the Government for garden work, and given to understand that their services will count for as much in winning the war as in actual fighting at the battle front.

Even and Regular Planting Bring Best Crops

It will be necessary for our commercial growers to employ women and boys and girls to a greater extent than in the past. Near large towns and cities such labor can usually be found at fair wages. Many of the market gardeners employed women last summer for hoeing, weeding, gathering the crops and preparing them for market. Boys and girls occupied a larger place than ever before in the gardening operations of the country.

High school boys are especially desirable for garden work. Most of them are serious and earnest minded, especially in these war times. All they need is patient, sympathetic direction. They are anxious to do a real day's work. Of course, there are exceptions, as there are among grown folks. Organization is the secret of success with the boys. They like action and want to see results. It pays to work them in groups large enough to keep a foreman busy. It is exceedingly important to have the right kind of a foreman. He must thoroly understand the work to be done. He must like boys and be keenly interested in them as well as in the work which they are doing.

The farm camp idea for high school boys should prove successful in gardening districts. Two such camps were held in Adams County last fall, where the boys picked apples and husked corn. Forty-eight Philadelphia high school boys lived in tents and were under military discipline, but worked full time on the farms. A college senior in agriculture was in charge of each camp. The farmers were pleased and the boys, after three weeks, returned to the city richer in experience and with a little money above expenses.

Labor-Saving Machinery

It will become more and more essential, as the war continues, to use labor more efficiently. We can not expect longer hours but each pair of hands will have to do more by working more intelligently and by using short cuts and labor-saving devices. Double-wheel hoes should be substituted in many instances for single-wheel hoes. Seed drills should be more generally employed. All of the small tools should be selected with a view to saving labor without sacrificing the work to be accomplished. On hundreds of farms, tractors should take the place of horses. Motor trucks are great time savers in marketing, and it is surprising how rapidly they are coming into use among vegetable growers who are operating on a fairly large scale. Railroad transportation difficulties furnish another reason for the use of trucks.

Fertilizers

As we look forward to the 1918 gardening season, the plant food problem demands consideration. Potash can not be bought at prevailing prices and our growers undoubtedly attach much less value to its application than they did a few years ago. Phosphorus must be employed in large amounts. Nitrogen is also indispensable to many of our soils and crops. Both of these elements have advanced in price to such an extent that the growers naturally debate the question as to whether they should use them as freely as in former years when fertilizer prices were normal. There can be no doubt about the desirability of using phosphoric acid in the customary amounts. With the war demands for nitrogen, and the high price of nitrate of soda, we should be more careful in the use of this

material and should strive to supply nitrogen to our crops by growing legumes more extensively. Truckers with large land areas can do this much more than market gardeners, but even the intensive growers can accomplish something in this direction, especially if slight readjustment is made in cropping plans.

With the increased use of tractors and power trucks, stable manure becomes less abundant and higher in price. Fortunately, it is possible to grow profitable crops of vegetables year after year without the employment of stable manure. This has been clearly demonstrated in many sections. It is not possible, of course, to grow good crops without the maintenance of the humus or organic matter in the soil, but this is easily possible by growing crops such as clover, cowpeas, soybeans, vetch , rye, etc., for manurial purposes. As a war emergency proposition, every grower should use the legumes as much as possible to utilize the free nitrogen of the atmosphere.

The Seed Supply

There are indications that the seed problem for 1918 will be more serious than last year, on account of the shortage of many different kinds of seeds. The dealers are now placing the bulk seeds as rapidly as possible in packets, because they are expecting an unprecedented demand from small growers. Commercial gardeners will do well to lose no time in ordering the seeds that will be needed for the season's operations.

With the shortage of labor and the high cost of spray materials, there is a tendency not to combat the various fungous and insect pests as vigorously as is necessary to realize maximum profits. It is a big mistake to go to the expense of plowing, harvesting, fertilizing, planting and cultivating, and then to let some pest, comparatively easily controlled, seriously injure the crop. As American gardeners, we are very slow to realize that the problem of pest control is just as essential to success as cultivation or any other garden operation which is commonly regarded as absolutely necessary. The annual losses from insects and diseases in the gardens of the United States amount to millions of dollars. Neither the grower nor the nation can afford such losses. Spray materials for 1918 will be scarce and high in price. They should be ordered early.

The Government will command the railroads more and more for the transportation of war supplies and munitions, so that there will be many unavoidable delays in the delivery of fertilizers, lime, tools and other supplies needed by commercial growers of vegetables. This condition makes it imperative that all supplies be ordered at the earliest possible date. The grower who delays placing his order until spring may be disappointed by receiving the shipment too late for planting. "Order now" should be the slogan.

What to Plant

A live question with every commercial grower is, what should I plant in 1918? This question the grower must answer for himself. Many factors, such as supply and cost of labor, adaptation of soil, distance from market and probable market demand, enter into the problem. Peas and beans, because they are protein crops and are used as meat substitutes, should occupy a larger place in our gardening operations. If they can be grown successfully and a good market is reasonably certain, the patriotic thing is to increase the area of these crops.

The army of home and vacant lot gardeners invariably plant most extensively the very early crops such as lettuce, bunch onions, radishes, etc. Last spring commercial growers sometimes complained of poor markets for these products and this condition was unquestionably due to the home garden crops. Wherever a similar situation is likely to occur next spring, growers will do well to revise their cropping plans.

An unusual opportunity is presented to the commercial vegetable growers of the Nation. Notwithstanding the fact that nearly all gardeners are facing labor shortage, high prices of tools, etc., we are going to show our patriotism, of course, by producing as much as we can, or as much as our markets will be likely to require. This is the time for courage, determination and tenacity of purpose, and the gardeners of the country will do their part well in contributing to the food supply of the Nation and of the allied countries fighting for a common cause.

Growing Tomatoes---I

The Early Crop: Seeds, Plants and Cultivation

By C. C. HULSART

MONMOUTH CO., N. J.

It seems like threshing over an old straw stack when one attempts to write on this subject and say anything not known by the average tomato grower. However, it is not the average, nor the professional grower, that constitutes the whole of the Pennsylvania Farmer family. Futhermore, this family is growing in members very rapidly. Then, too, conditions have changed so radically within the last year, owing to the war, and the farmers must change too or be lost in the shuffle. Hence, many things that were true and good advice in normal times will not hold good under present conditions. Of course, essential principles remain the same.

The watch word used to be, "The early bird catches the worm." Earliness was a prime factor. The object was to secure it at the expense of crop and that, under past conditions, was good management because the early crop sold at paying prices for only a short time in any of the large markets. Then, when the glut came half or more of the entire crop, when a large volume of crop was produced, either had to be sold to the canner or left to rot in the field. Many times I have seen more tomatoes rot in the field than were picked and sold in the market. When the grower was located near enough so that he could haul the balance of his early crop to a catsup or can factory the price received was so small that it would not pay him to pick and haul them any distance, if he had anything else to do.

Not very many years ago canners paid only six dollars per ton for their stock, and only within the last three years did they reach ten dollars and better. Was it not good management to produce a half-crop and have them early rather than a whole crop and be too late to receive the fancy prices?

As I have said, conditions have changed and they will stay changed so long as war conditions prevail. Last season as high as $1.25 per five-eighths basket was paid by canners. That is a long way from twelve and one-half cents, the price only a few years ago. For the last two seasons, tomatoes in the New York City market have sold at paying prices any and all times during the season, and there was not enough to supply the demand. Furthermore, catsup makers and canners are at their wit's ends to know how and where to secure the fruit for next season's pack. There is not nearly enough stock from last season's pack to go around, even at present high prices. Now, with war conditions prevailing and likely to continue for this season at least, there is no doubt but that the tomato will sell, and sell at good prices.

With such conditions as these before us, there is no need of trying for extra earliness at the expense of volume. I have thus emphasized the situation for the benefit of the new man in the business. It is not the expert grower today who has control of the situation. Any one who can grow the crop will receive pay for it Prices will fluctuate from time to time, according to supply and demand, but there is no danger of the price falling below cost of production.

Good Seed Important

Good seeds of the desired variety must be procured. There are only two dependable varieties for early use—the Earliana and Maule's Early. There are, however, numerous strains of these two distinct varieties listed under various names. Then, there are other so-called early sorts of the type of Chalk's Early Jewell and John Bahr. These last two are not strictly early varieties. They are different types with different habits of setting their fruit. All early varieties set their fruit in clusters of from five to a dozen fruits in a bunch, while these two have the characteristics of the late sorts, that is, set their fruit in threes and fours. It is true that either of these last two named varieties will ripen a few specimens nearly as early as either Earliana or Maule's Early, but the latter will be half thru ripening before Chalk's Early Jewell or John Bahr has begun to produce ripe fruit in quantity. Nevertheless, Chalk's Early Jewell and John Bahr has begun to produce ripe fruit in quantity. John Bahr is the better. It is more solid, a better red, stands shipment better, and the fruit itself is more attractive. Earliana seems to be the leading early sort, yet many are condemning it because of its weakness, both in vine and foliage. The plant is very tender and easily contracts disease. Maule's Early is a more vigorous plant and produces larger crops, but the fruit is more rough and ill shaped, altho of better color than the Earliana. Growers must be their own judges as to which of the two varieties they will plant.

To grow the early crop, the seed must be sown in hotbed or greenhouse about March 1st, for this locality. The young plants should be transplanted to cold frames when they are four to five weeks old. This will mean from the 7th to 10th of April. The plants in the cold frames must be cared for carefully, aired and watered when needed, and hardened off by leaving off the sashes during the day at first, and finally both day and night. The plants are ready for the field by May 5th to 10th. If the weather is fine, the plants grow fast.

A Home-Made Clod Crusher and Leveler

Planting

The land should be prepared the same as for other crops, except that on sandy soils the animal manures should be broadcasted and cut-harrowed in before plowing. Apply eight or ten good two-horse

(Continued on page 6.)

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PHILADELPHIA, PA., FEBRUARY 16, 1918.

Correction In an editorial appearing in our issue of February 2, we inadvertently stated that the primary election would be held in September. It should read, June. This earlier date makes haste all the more necessary for those who would select candidates favorable to the prohibitory amendment.

* * *

Furloughed Labor A bill was introduced in Congress recently giving the Secretary of War power to permit drafted men to go home on furlough to assist in needed occupations. This is understood to mean farm men to return to help in the harvest of crops or in other pressing farm work in time of greatest need. While the enforcement of the law will depend largely on the stress of the labor situation, the bill should have the support of all farmers. Write to your congressmen, urging them to support the measure.

* * *

Farm Engineering The American Society of Agricultural Engineers has evidently discovered, as have many others while viewing the landscape from car windows, that there is waste and unused land in this country, and they solemnly resolved the following at a recent conclave:

> "Resolved, that each one of us put forth his best efforts to create the sentiment in our different localities to put the idle acre to work. That thruout this great country of ours there are millions of acres of land in small tracts and parcels which can be made productive by drainage; the acres now occupied by gullies and ravines made available for cultivation by the construction of soil-saving dams; the cultivation of hillside fields by proper terracing, and a persistent fight against weedy fence lines and fence corners."

While "resoluting" they might have gone further and resolved to put to work the idle men of the nation, and those who are puttering around in useless or unprofitable employment. They might also find some way to engineer a greater part of the consumer's dollar towards the farm. In order to make the costly developments suggested, it must be shown that it will pay to make them. It will take more than "sentiment" in the different localities to drain swamps, fill gullies, terrace hillsides and grub out fence rows. They might find an opportunity to exercise their skill by engineering competent labor towards the farm, and by throwing a dam of some kind across the stream of labor that is continually flowing from the country to the cities. If all the farmers' advisors could [illegible] be pried loose from their well-paid jobs, during these strenuous times at least, and were engineered out to the fields we believe their labor, if rightly directed, would do more towards increasing the food supply than will their advice.

* * *

Who's Hoarding Potatoes? The produce journals, which by the way are usually apologists for middlemen and profiteers, are strongly blaming farmers for holding back their potatoes. Their argument is based upon the figures published by the Bureau of Crop Estimates, comparing the holdings of dealers and farmers on January 1 with the holdings of a year ago. These figures show that dealers' holdings are 50 percent greater this year than last, while the number of bushels in farmers' hands is 175 percent greater than on January 1, 1917. For this reason these journals claim that the Government's appeal to the consuming public to be patriotic and use lots of potatoes should also extend to the farmer and urge or compel him to sell his potatoes.

There are several perfectly good reasons why this condition exists, if it does exist to this extent. In the first place, we have very good reasons for believing that the crop was very much over-estimated. Secondly, the slump in price early in the season reduced it to a point below the actual cost of production in many instances, and farmers took the perfectly legitimate chance of storing them for higher prices. Thirdly, not only have prices failed to recover as expected, but the abnormally cold weather of the past ten weeks and the congested traffic conditions have made it impossible to ship anything so perishable as potatoes safely. Added to these reasons is the fact that thousands of bushels have frozen in cellars, and other tens of thousands are still in the ground under the snow. It must also be remembered that the crop of 1916 was largely a failure.

If these critics will inform themselves by getting the facts they may not find it necessary to incite prejudice against the farmer by publishing insinuations and untrue statements.

* * *

Surplus Milk The fact that milk prices were lowered for February because of a comparatively small surplus supply emphasizes the need of definite handling of the surplus problem. It demonstrates that the adjustment of price to the supply and the demand is a delicate matter. Prices must be maintained at a certain level to sustain production. Dairymen feel that the required level has scarcely been reached, and certainly not exceeded. Yet the small advance in the January price, together with those of the past year, was enough to curtail consumption to a point where with the moderate production there was still a surplus. That surplus compelled a reduction of price to the farmers. In the development of a marketing plan that will meet the needs of the farmers in the future, it is absolutely necessary that some provision be made for taking care of a part if not all of the surplus by the farmers themselves. This is no easy matter, but it must be met. Under normal conditions an outlet is offered in the manufacture of butter and cheese and the feeding of surplus to livestock. The most stable of these is the butter market. For the present, however, butter and cheese making offer little possibility of relief, as butter prices will not justify diverting milk from the whole milk and condensary demand. With a return to normal conditions there will be a decline in condensary consumption, but butter should come back to its old position in the dairy field. It is with these factors that the farmers must deal in taking care of the surplus that will always be the limiting influence in their milk market.

* * *

Where Shall I Apply Manure? There is probably a greater proportion of the farm manure remaining in and about the barns of the country now than is usual at this time of year. This is due to the unusually cold season, the deep snows and the shortage of labor. The question many farmers are asking themselves is, what shall be done with the manure in order to get best results? Shall it be left until later in the summer in order to get at other work early? This used to be a common practice and the rotted manure was then applied to wheat ground; but this is a wasteful practice.

Because of the extreme demands of the time and scarcity of fertilizers it is doubly important to put every pound of manure to work at the earliest possible moment. There are two places where, in our estimation, it will do best service this year on the average general farm: First, as a top dressing for wheat. Wheat as a general thing was sown late last fall and got little start before winter set in. The freezing and thawing of spring will still further decrease the prospects of a good yield. If manure can be applied soon, when the ground is frozen, it will give protection from the spring freezing and at the same time furnish plant food by which the young plants will be able to make a quick, rapid start. The other place where manure will probably return most is the corn crop. For this it should be applied as early as possible. No other crop makes as profitable use of coarse manure applied shortly before seeding as corn, but if it can have the effects of spring rains in leaching into the soil, all the better. Since, by all indications at present, the winter wheat crop will be below normal every effort should be made to raise the greatest possible crop of its best substitute—corn.

Two matters of great importance in the application of manure are the amount and the method of application. It has been well proved by careful experiments that six to eight tons per acre give greater returns per ton than heavier applications, provided it is applied evenly. For both these purposes a manure spreader is necessary. It is practically impossible to apply as little as six or eight loads evenly over an acre of ground. Not only is a manure spreader economical of manure, but it is economical of time and labor as well.

* * *

Feed Regulation The U. S. Food Administration has announced its plan for regulating the price of mill feeds. The announced purpose of the regulations is to lower the price of staple feeds and at the same time disturb the flour production business as little as possible. Briefly stated, the prices of feeds are to be based upon the established price of wheat. Mills must sell bulk bran in carload lots at a price not to exceed 38 percent of the average cost of an equal weight of wheat. The Administration announcement presents the following specific case to illustrate the operation of the regulation:

If the price of wheat at Philadelphia is $2.27 per bushel, a ton of wheat would cost the Philadelphia mill $75.67. Taking 38 percent of this would give $28.76 as the bulk price per ton for car lots of bran at the mill in Philadelphia. Other grades of millfeed are established on a fixed differential, taking bran as the basic price. For shorts or standard middlings, the maximum charge may be $2 per ton over the price of bran. Mixed feeds may be $4 per ton over the price of bran. Flour middlings may be $9 per ton and Red Dog $15 per ton over the price of bran. With the price of wheat to the mill $75.76 per ton as cited above, the maximum prices of these feeds per ton bulk, f.o.b. mills in carload lots would be $30.76 for shorts and standard middlings, $32.76 for mixed feeds, $37.76 for flour middlings and $43.76 for Red Dog. On quantities of less than carload lots, an addition of 50 cents per ton is permitted. These regulations apply only to bulk bran and the other feeds put out by such mills as are engaged in the business of milling flour and feed from wheat and are licensed by the U. S. Food Administration. Feed buyers are urged to use their influence to have their local millers work in agreement with the Administration.

This ruling should result in lower feed prices, but to be of early value to the eastern dairymen there should be equally definite regulation of sacking and handling charges. The regulations announced cover direct buying of feeds in bulk from the mills. Comparatively few dairymen, particularly in the East, can deal directly with the mills. Were there any assurance that the regulations would be enforced over a considerable period of time, it would offer the greater inducement to dairymen to develop co-operative buying organizations and buy direct. It should be worth the effort even for the present year. But to be most effective, the announced regulation should be supplemented by similar regulations of the agencies handling the feeds from the mills to the consumers.

HARRISBURG NOTES

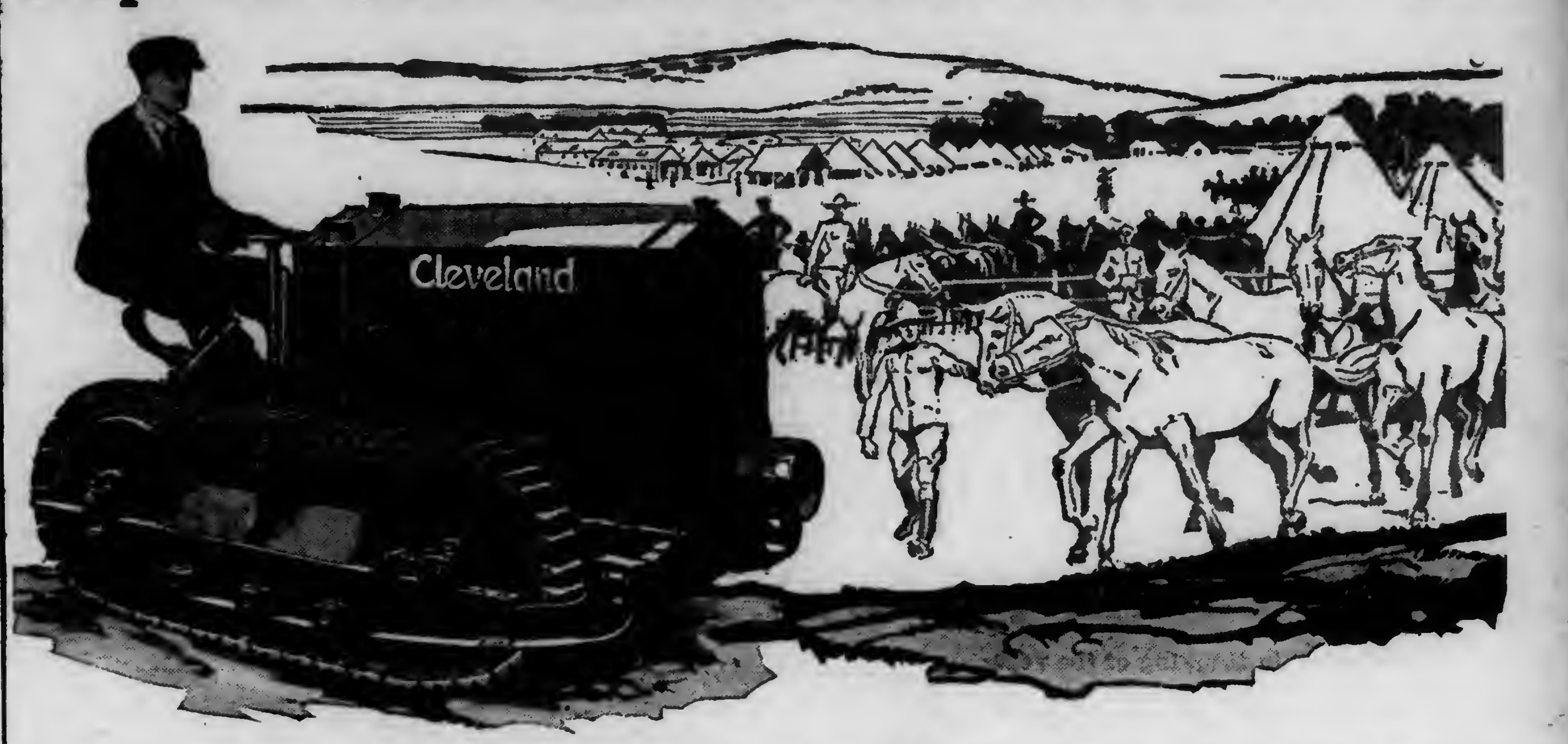
Odd Doings on the Hill.—No one seems to recall a situation as peculiar as that existing between the Governor and his personally selected Commission of Agriculture. In the midst of the muss and with the state emerging from a terrible winter with upset conditions, the governor has gone to Florida for a vacation. The State Commission of Agriculture was a creation of the Brumbaugh administration's first year. It was intended to better farming conditions and increase the food production, but it has had nominal authority only and, altho members are personal friends of the governor, they have had many snubs. Last fall it refused to approve E. B. Dorsett, of Tioga County, as chief of markets. The governor backed Dorsett, but influential men in his administration opposed him. Dorsett remained at the post as he had not been rejected, and thru the governor a hearing was accorded him. After an all day pow wow, Dorsett was confirmed and immediately resigned. The relations between the governor and the commission are strained. Lewis B. Sexton, Bradford County, has resigned, it is said, because he moved out of the state. Terms of other commissioners expire next year. What Capitol Hill looks for is a new move by Dorsett which will either force the governor to line up with him or to turn him down. Things are rapidly getting to a pass where the Department of Agriculture may be an issue in the coming campaign because of the use being made of it in a political way. Taken all together, the agricultural end of the state administration is one of the most interesting features of the present political situation and a real organization will be imperative if it is to be of expected value to the farmers of the state.

Please Buy Tractors.—Just as an illustration of the way things go on the Hill at a time when shortage of farm labor and means to help farmers maintain the foodstuff production of the last few years are occupying the best brains of Pennsylvania, it may be said that the Agricultural Commission last week agreed "to request" the State Defense Commission to please buy forty tractors to rent to the farmers of Pennsylvania at so much per acre, a suggestion which was made months ago. The commission was not considered of enough importance by the last legislature to give it funds to meet extraordinary conditions arising out of the war and it did not wake up to the situation this month. And now when it makes its "request" to a commission which has the funds it finds the governor out of the state and no arrangements made for a meeting. And, if a meeting is secured and the money voted for the purchase of the tractors, there is no telling when they can be delivered as farmers and communities and clubs and other organizations have been buying them up right and left.

A Finish Fight.—All signs point to the fact that the contest for gubernatorial honors will go beyond the primaries and that the successful Republican candidate will not have a united party back of him. The Penrose people, controlling the fiscal offices, will make a battle on Capitol Hill to curb the activities of the state administration. Men will be dimissed and appointed and the time-honored methods of wreaking vengeance will be followed with many shrieks. Perhaps out of the wreck that will follow will come some people with the opinion that service to the public pays in the end.

The Wheat Sales.—Secretary Patton has announced that arrangements have been made to have the United State Grain Commission buy wheat in car load lots and that farmers in whose districts millers and agents have bought all they are allowed to buy should send word to him so that car service can be arranged.

Nitrates and Priority.—Announcement will be made from the attorney general's office during the coming week of the plan for sale of nitrates thru the government. Some details of the license have to be worked out. The federal authorities have granted the request of the secretaries of agriculture of various states for preference for shipments of farming machinery, tractors, seed corn, fertilizer materials and feeding stuffs.



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Growing Tomatoes---I

(Continued from page 3.)

loads per acre. On heavier land it may be better to compost the manure, adding 40 or 50 pounds of acid phosphate per ton. Turn the pile once or twice to help it decompose and make it fine. When the field is plowed, harrowed and marked off in check rows 4 feet each way, open the rows with a good turning plow and place a good half shovelful of this composted manure in each hill and cover it with soil, leaving it sharp on top of the hill. Do this some days before time to set the plants.

When all is ready, including the weather, prepare the wagon by putting on a long bottom, drive to the beds. The plants should have had a good wetting, partly the night before and the balance just prior to taking them out. It is poor policy to wet the plants too far ahead of taking them out because they take up the water quickly and soon become tender. Cut between the plants, leaving four in a block, load on the wagon, soil and all. Endeavor to keep the soil attached. Set from wagon. Set plants firm but not too deep, as the soil is yet cold except near the surface.

As soon as the field is set, start the cultivator to loosen up the soil caused by tramping of horses and men. This lets in the warmth, prevents evaporation and induces an early growth. Now, there should be more fertility applied on most soils. However, we do not want excessive vine growth. If much nitrogenous fertilizer is used we may get too much. Furthermore, no stimulating fertilizer should be used until some fruit is set. When a fair quantity of fruit is set, an application of 150 pounds nitrate soda will often increase the total yield by 25 percent. On soils deficient in soluble phosphoric acid, 300 or 400 pounds of acid phosphate should be applied also. This hastens maturity and induces early ripening.

The early crop needs more attention and more frequent cultivation than do any of the later sorts. The plants are set earlier, while the soil and atmosphere are still cool, hence must be coaxed to grow. Cultivation should be as often as once each week, or until the vines nearly meet.

In my second article I will deal with second-early and late varieties—their place in the routine, their value from a commercial standpoint, and some things learned about their culture.

The Farmer's Garden

What, When and Where To Plant

Most of us in thinking of the vegetable garden have recollections of hours of back-breaking toil spent pulling weeds out of the onions or the lettuce. Perhaps this is one of the chief reasons why the home garden is often a breeding place for weeds and insects instead of being the most profitable half-acre on the farm.

A Windbreak and Southern Exposure Mean Earlier Crops

The vegetable garden if properly handled will yield a continuous supply of fresh vegetables thruout the whole year. It will provide a pleasant change of diet that will save on the meat bill and at the same time promote the general health of the family.

Locate Garden Near Kitchen

The garden should be located as close to the house as convenient. Most of the work of planting or cultivation is done in spare times. The harvesting is usually done by the housewife, who does not have time to go to the far end of the farm after vegetables. A southern exposure is preferable because it warms up earlier in the spring. The shade of buildings or trees should be avoided as much as possible.

Rotation Lessens Disease

The size of the garden depends upon the amount of vegetables wanted, but need not be larger than half an acre. A two-year rotation may be followed by taking an acre and a quarter of ground and planting the small fruits and perennial vegetables such as rhubarb and asparagus in the center and alternating vegetables with clover on either side. In this way the ravages of diseases and insects are lessened and at the same time the soil is enriched by the clover.

The Garden Plan

In planning our garden, we should keep the following things in mind: (1) We should aim to have a constant supply of the vegetables preferred by the family. (2) Only the high quality vegetables should be grown. (3) The short season crops such as radishes, lettuce, spinach, early peas, and early onions may be followed by beans, tomatoes, late cabbage, sweet corn or turnips. (4) Each crop should have sufficient room for its best development.

The rows should all be spaced far enough apart to permit of horse cultivation. Some of the smaller growing vegetables may be planted, but if they are, they should be cultivated with a hand cultivator.

It is best to plow the garden early in spring. Frequent and thoro disking of the soil before planting will aid very greatly in controlling weeds and give a much better seed bed for the vegetables. After planting, the garden should be cultivated often enough to keep down the weeds and prevent any crust from forming on the surface of the soil.

Stable Manure Best Fertilizer

Nearly all the vegetables require a large amount of organic matter in the soil. This can best be supplied in the form of well rotted stable manure used at the rate of 15 to 30 tons per acre. It should be applied in spring and then turned under. High grade commercial fertilizers at the rate of 500 to 1,000 pounds per acre may be used to supplement the manure, especially in poor soils, while nitrate of soda is valuable in the early growth of most vegetables because it gives them a better start.

Grow Early Plants in Hot Bed

The hot bed is used to start plants like early cabbage, tomatoes, eggplant, pepper and head lettuce which do not have time to mature properly if started outdoors. It should be located on the south side of a building where it will get the full benefit of the sun's rays. The pit should be two feet deep. The frame is made of one and one-half inch boards and should be twelve inches high on the north side and six on the south. The standard width of the bed is six feet.

The pit is filled with fresh horse manure which has started to heat evenly all over. The manure is packed down particularly at the edges of the pit and four inches of a rich garden loam put on top. Put on the sash and in about three days the bed will be ready for the seed, which is sown in rows three inches apart. The seed should be started around March 1. Transplant the seedlings at least once before planting in the garden.

Plant Seed That Grows

The seed used should be of the best and should be bought from a reliable seed firm. Vegetable seed sold by grocery stores is often of very low quality, and the gardener takes great chances in planting it. Some of our vegetable seeds, such as tomatoes, beans, squash, cucumbers and muskmelons can easily be grown at home. Care must be taken, however, that the seed is selected from the very best plants, and that the varieties do not cross.

Use Standard Varieties

The varieties of vegetables chosen for the home garden should be standard varieties rather than freaks or novelties. They should be of the highest quality and should be selected so as to cover the whole season. Usually two or three varieties are sufficient. Thus with cabbage, Jersey Wakefield, Succession and Danish Ballhead form a succession of high-class varieties that cover the whole season. With tomatoes an early and a late, such as Bonny Best and Stone, are sufficient.

When to Plant

Most of the hardy vegetables are planted in the garden during April. These include the root crops, lettuce, spinach, cabbage, cauliflower, and early celery. They make most of their growth during the cooler season of the year. The tender vegetables such as tomatoes, muskmelons, cucumbers, squash, eggplant and pepper should not be planted until the latter part of May or in June, after the ground warms up. Successive plantings of quick maturing crops like peas, beans, radishes, lettuce, sweet corn, and turnips should be made to insure a continuous supply for the whole season.

Store Surplus for Winter Use

Most of our vegetables keep best when stored in an unheated cellar. Carrots, beets, parsnips, salsify and rutabagas should be covered with moist sand. Celery, cauliflower and endive may be planted in the cellar and allowed to make some growth. Cabbage may be stored in pits or trenches outdoors or in the coolest part of the cellar wrapped in paper. Squash will do best at a temperature of 40 degrees and a fairly dry atmosphere. Sweet corn, string beans, peas, pumpkins, tomatoes, asparagus and beets can easily be canned. If sound vegetables are used and both jars and vegetables thoroly sterilized with heat, no difficulty will be experienced in making them keep

The Winter Cellar Garden

A garden may be had in the cellar in winter with very little trouble. Rhubarb, chicory and asparagus are often forced and give a supply of green vegetables thru the cold winter months. The culture of rhubarb and asparagus is very similar. The roots are dug in November, taking care not to injure them any more than is necessary. They are then allowed to freeze solid and are kept frozen until wanted for planting. They are set in the cellar as close as possible and covered with an inch or so of soil. They are then kept fairly moist. No light is needed. The temperature should be 50 degrees or above.

It will take about twenty-five days for the first rhubarb to appear. Pickings may be made once a week for six to ten weeks.

Chicory roots are not allowed to freeze. They are planted the same as rhubarb but are covered with eight inches of pure sand. The chicory heads are picked when they reach the surface of the sand. The leaves are used in salad and are highly prized. Two pickings may be made. Successive plantings must be made for a whole winter's supply.—J. R. Hepler.

Quality in Nursery Stock

From a Nurseryman's Standpoint---By Samuel Fraser, New York

1. In buying nursery stock, especially fruit stocks, the first question to ask is, who grew it? So much must be accepted, that one cannot afford to deal with any one who does not merit his confidence. The grower must be reliable, must know his business and if he lives in one's immediate locality so much the better. A dealer in trees may not know anything about their ancestry. It is wiser to deal with the grower.

2. How old is the tree we are offered? A reputable grower will give the age as 1, 2, 3, or 4 years old. Trees are sometimes cut back—a 3-year old is made to look like a 2-year old. The age must be known in order to form a just opinion as to whether the trees have been well grown or not.

3. The size of the trees. Size is designated by the calliper or thickness of the trunk 2 inches above the bud and the height, which is the length from the point of union of the stock and bud to the tip of the branches. Size and age must be considered together and with regard to the place where the tree was grown. A one-year-old apple tree 6 feet tall grown in Alabama may be of no more value than a 4½-foot yearling of the same variety grown in New York. Both are the largest trees out of the block, but a 4½-foot tree from Alabama is not as large nor as vigorous as the 4½-foot tree from New York, both being of the same variety.

Sugar Camp on Farm of D. H. Watts, Clearfield County, Pa.

4. The variety. In apples and pears most of the varieties can be told by the characters of the tree. R. I. Greening differs from Baldwin. Some are so distinct that nothing but criminal negligence or ignorance would permit them to be substituted for one another or mixed. It is important to consider the variety with the size. A two-year old budded Stark, R. I. Greening or Paragon may be 6½ feet tall while a Williams Red apple tree equally well grown may be but 4½ feet tall. Some varieties like Gravenstein or Twenty Ounce will make larger trees when grown on sandy loam than when grown on clay loam. R. I. Greening and McIntosh may do better on a heavier loam, hence the soil the tree is grown on is a factor.

5. Trueness to name. Does the tree show the characters we may expect to find in the variety? Trees of the same variety grown on the Pacific Coast or in New York may show differences, especially in such features as color of bark. The nurseryman of intelligence knows the appearance of each variety when grown in his vicinity and if he exercises care in securing propagating wood he knows whether the blocks are true to label or not.

Many varieties of apples, pears, cherries and plums are so distinct that they are easily recognized, but this is not true of peaches. A nurseryman who has fruiting specimens of the various fruits on his grounds and every few years checks up his propagating wood by growing a small block from the fruiting specimen and who has good system in his nursery can always secure a premium over the indifferent grower. This is especially true in the wholesale trade. Retail nurserymen of repute make careful study of the wholesalers upon whom they can rely and will not accept stock as a gift from others. Wholesale prices of the same variety of fruit trees, and of the same sized trees, frequently vary 100 percent and sometimes 300 percent. Confidence and reputation are worth more than the price of the tree, but it costs money to secure the one and maintain the other. Naturally there is wide variation in the retail price of trees. When there is such a wide difference in the wholesale price the fruit grower usually gets what he pays for. He can not get something for nothing.

6. Freedom from disease. The trees should be clean, well-grown and free from disease; the bark bright, not dull in appearance.

7. A straight upright trunk is desirable; it should be free from limbs for 12 to 15 inches and should carry 8 or 10 strong and well-distributed branches. In the case of dwarf or special purpose trees these requirements would be modified.

8. The root system is usually given insufficient consideration. It should be strong, contain 3 to 8 good roots and these should carry some fibrous roots. The root system varies markedly with the variety. A weak grower like Twenty Ounce will not have as good a root system as R. I. Greening. The growing of the trees on light loams encourages the development of more fibrous roots than when grown on clay or clay loam soils. At present we are neglecting the roots of our trees. Some day we shall standardize them as we have standardized our trunks and tops.

The Mazzard Cherry root is the only one to use for the sweet cherry. It is the best for the East for the sour cherry, but Mahaleb is generly used. Myrobolan is generally used for plums, but it suckers badly with some varieties. The French Pear seedlings used for our pears are quite likely to succumb to pear blight on their roots, so that a Chinese seedling may be found to be better. The French Crab seedlings we now use are nothing but seedlings grown from seed secured from cider mills in France; the apples being ordinary cull apples of no fixed variety. The Doucin Apple stock is a semi-dwarf-growing apple tree and the young plants are propagated by layering. The same is true of the Paradise stock which is a low-growing bush about 10 feet tall. The two latter dwarf the apple. The quince is used to dwarf the pear, altho in any batch of seedling pears there are a large number of small-growing seedlings which will make dwarf trees and the same is true of apples.

9. The shipment of the stock. Stock which is freshly dug is more highly esteemed than that which is stored, but it is impossible to get help to handle all of it in this way. Stock which is boxed is usually shipped in bundles of 10 in paper lined cases, with moss, shingle tow or waste excelsior as a packing around the roots to keep them moist. It is better if it can be received

Spraying Program for the Commercial Grower

Crop	Pests	Spray or control measures	First	Second	Third	Fourth	Remarks
Apple, Peach, Plum, Grape, Cane Fruits, and all Shrubs.	San Jose Scale Aphis eggs Peach-Leaf Curl	Concentrated lime sulphur, 1-9	When Apple and Peach buds are swelling				Delay spraying as late as possible on Apple to control Aphis
Apple Pear	Codling Moth, Curculio, Leaf-spot diseases, Scab, Black Rot	Lime-sulfur 1-40 plus 1 lb. arsenate of lead powder (use double quantity arsenate lead paste in each case)	Within 1 week after petals have fallen	10 days later	July 1-15	Aug. 1-15	
	If Aphis are present	Add 40 percent nicotine sulfate at rate of ½ pt. to 50 gals. of spray	Add to above spray				
	Bitter Rot	Susceptible varieties should be	sprayed with borde	eaux, 4-4-50, ev	ery two weeks a	fter July 1	
	Woolly Aphis on roots	3 percent Pine-tar creosote emulsion	June	September			
	Round-head Borer	Remove with wire and knife	May-June	October			
Peach Plum Cherry	Curculio Brown Rot, Scab	Self-boiled lime-sulfur, 8-8-50, plus 1½ lbs. arsenate of lead powder	Just after the petals fall	4 weeks later, earlier for cherry	Repeat every 4 weeks until 3 weeks before ripening; omit arsenate of lead powder		
	Peach-tree Borer	Remove in May and September; mound up earth at first worming					
Currants Gooseberry	Worms	1 lb. arsenate of lead powder in 50 gals. water	Spray when worms appear				Use hellebore 1 oz. to 3 gals. water just before picking if necessary
	Mildew	Liver of sulfur, 1 oz. to 2 gals. water	When leaves first appear	Repeat at 2-we	ek intervals		
Grape	Rose Bugs Flea Beetle	1½ lbs. arsenate of lead powder plus 1 qt. of molasses to 50 gals. water	When Beetles first appear on buds				
	Black Rot Downy Mildew	Bordeaux, 5-5-50	Just before blossoming	Just after fruit has set	When grapes are the size of peas	3 weeks later	In wet seasons spray every 10 days
Asparagus	Beetles	Arsenate of lead powder 1½ lbs. to 50 gals. water plus 2 lbs. soap	Allow shoots to grow up every 100 feet; keep these coated with spray; cut all others closely	After cutting is trol larvae	over spray in	the bed as often	as necessary to con-

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and planted while absolutely dormant, but if it is late in the spring, it shows the stock lacks vigor if it has not started to grow when it might be expected to do so.

Nursery stock which is vigorous and full of sap needs little cutting back of the branches after planting, merely thinning out of the limbs to secure shape. That which is dried out may need to be soaked root and branch for 24 hours and then the branches cut back to live and vigorous buds, as is frequently advised and practiced.

10. Buy the best. None are too good. Buy of a reputable firm. Pay a fair price, which will maintain the clean and reputable firms in business.

KEEPING UP FERTILITY ON THE CANNERY FARM

The canner who aspires to be a farmer and grow at least part of his pack, or the farmer who aspires to be a canner, finds very soon that in order to be successful he must devote most of his land to growing the particular crop which he wishes to preserve. Sooner or later this leads to single crop farming—growing the same crop on the same land year after year.

This is ordinarily not good farm practice. It is likely to take out organic matter and plant food so rapidly that the soil soon becomes useless. Market gardeners near the city can practice continuous cropping by making use of large quantities of manure, which they get from city stables. But canners are not near the city. They can't get manure.

The sweet corn canners of Harford County, Maryland, have had this problem to confront for years. A certain small section of the county produces a superior grade of sweet corn and as a result is dotted with canneries. Every available acre must be devoted to growing sweet corn if the canneries are to be kept busy.

F. O. Mitchell and Brothers, whose farm and cannery are located in Harford County, are a fairly typical example of the section. They own 600 acres of land and grow about 500 acres of sweet corn each year. This means an almost continual succession of sweet corn. Fields near the cannery never grow anything but sweet corn.

Growing sweet corn year after year would soon mean decreased yields unless special treatment was accorded the soil. Special treatment in this case takes the form of plenty of high grade commercial fertilizer and crimson clover to plow under. Some little manure is available from steers fed on corn silage and stover, but only enough to cover the land thinly once in seven or eight years. One thousand pounds of high grade complete fertilizer is used every year. Five hundred pounds is applied broadcast and the other 500 is sown in the drills. The first application under normal conditions runs high in phosphoric acid with moderate amounts of ammonia and potash. This application usually consists of what is known as a "half and half"—that is, containing about one-half bone and the remainder a standard complete fertilizer. The second application contains less phosphoric acid and more potash and generally analyzes about 2 percent ammonia, 8 percent phosphoric acid, and 10 percent potash.

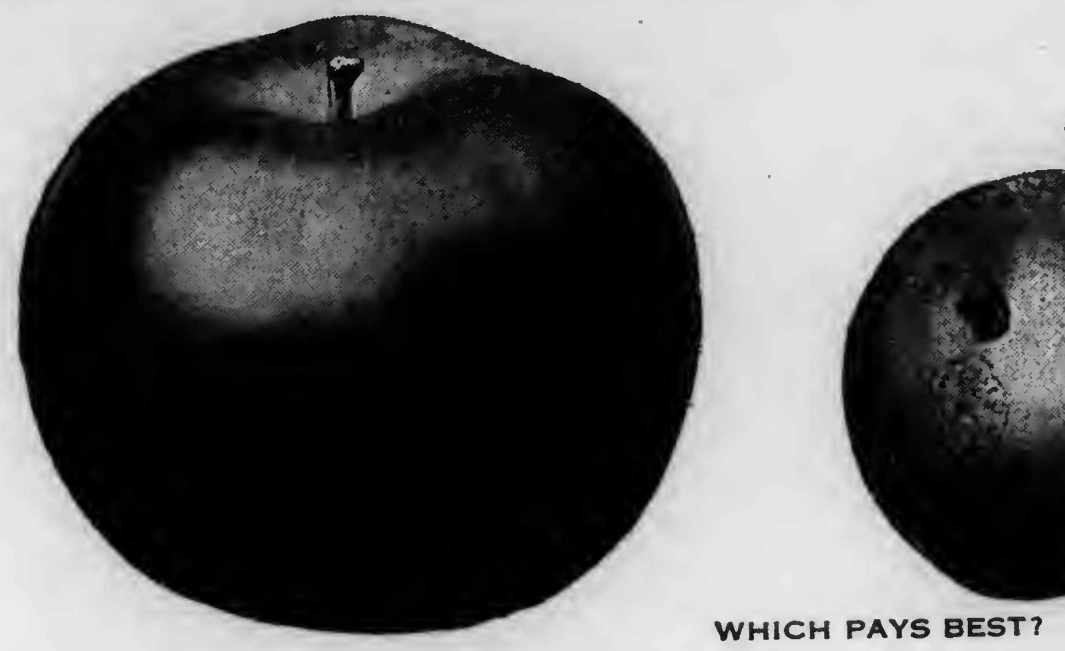
Each year one-half the acreage, the early planted, is sown to crimson clover, which is plowed under the next year to be planted to the late crop. Under this treatment the soil has improved from year to year, and the tonnage has increased. Little manure, and that little produced where no other roughage than corn is used, has not tended to increase the weeds as is the case ordinarily on continually cultivated land. As a matter of fact the weeds have been lessened. This, too, is a big factor where 500 acres of a cultivated crop are to be handled.

By using large quantities of high grade fertilizer the soil is in excellent shape to receive the crimson clover used. About 75 bushels of seed are used each year, and Mr. Mitchell says he has never failed to get a stand. He also added with enthusiasm that a number of years ago, when he started his present plan for growing sugar corn continuously, his neighbors laughed at him and told him the first dry season would burn him up. He said his plan had so restored the organic matter that it had had the opposite effect and cited one year recently, when he had harvested a crop which had had no rain from the time it was planted until it was pulled, and was a success. He also added that he was the only one who did have a good crop that year.

A field across the road from his cannery, which was in sugar corn for the thirteenth successive year, was in fine shape and a perfect stand. He has several other fields which have had nothing but sweet corn for from six to ten years and all look fine.

(Continued on page 27.)

Wild Honeysuckle—Nature's Sweetest Flower



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You can protect fruit from worms and disease by spraying with Pyrox. One preparation does both.

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Thirty-nine prizes on thirty-nine entries is a record made by Pyrox-sprayed fruit at the Trenton Fair 1916. At the 1917 Fair 33 out of 34 entries by the same exhibitor took prizes. "From 50 cents worth of Pyrox we got $22.50 worth of fruit where we got only $2.90 before using it," writes a Pennsylvania grower. "From one orchard I used to sell about $1500 worth a year. The year I began to use Pyrox my sales went up to $5400. Can I afford NOT to use it?" said a fruit grower at a N. Y. State fruit growers' meeting.

"My apples are the finest and smoothest I ever had and the trees are the fullest," writes a Vermont customer, and many others whose letters we print in our book testify that Pyrox improves the quality of the fruit, protects it against injury from insects and disease, invigorates the foliage and improves the health of the trees.

Pyrox is a smooth, creamy paste, all ready to measure out and mix with water. This saves labor in the busiest season when labor is hard to get. In a letter to a friend, the Editor of "The Fruit Belt" who is personally in charge of over 400 acres of orchard, says; "I have made many thousands of barrels of spray mixtures on the farm, and I can say to you I have mixed my last barrel. I now use Pyrox."

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APPLES HANG TO TREE

Mr. Albert Cooper, West Virginia, writes:—"Where I didn't use Pyrox I have scarcely an apple hanging on up to this time, but the trees that were sprayed are full of as nice apples as I have seen this season."

BETTER COLOR

Mr. A. W. Davis, Missouri, says:—"The apples and leaves hang on much longer where Pyrox is used. It gives the fruit a fine color. I would not bother with the home-made spray again if the ingredients were given me."

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Mr. Alva E. Moore, Marlinton, W. Va., writes:—"I sprayed my apples with Pyrox and it would be hard to find a wormy apple in the entire orchard. Pyrox is cleaner to apply than most sprays."

SAVES LABOR

Mr. B. L. Aborn, Maine, writes:—Pyrox is very easy to prepare, works well in the sprayer, kills the bugs and keeps the vines green until frost—that means profit to our Maine potato growers in every sense of the word."

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SEED CORN will be scarce this year. If you want the best, order at once. Boone Co. White, Yellow Dent and Leaming. A. B. TWINING. FOREST HILL, MD.

FROST-PROOF CABBAGE PLANTS Booking orders now for shipment in March or April 300 by mail, postpaid, $1.25; 1,000 by express, not prepaid $3.00. DAVID RODWAY, HARTLEY, DEL.

Onion Seed our specialty, all kinds of tested fresh seeds. We sell by weight and pay your postage. Catalog free. ALLEN'S SEED HOUSE. GENEVA, OHIO.

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Strawberry Plants money making varieties at reasonable prices. Catalog free. BASIL PERRY, Georgetown, Del.

Meeting of New York State Fruit Growers' Association

With its sixty-third annual meeting held at Convention Hall in Rochester, Jan. 30-31st and Feb. 1st, the Western New York Horticultural Society closed its career under this time-honored name. It has merged its interests with those of the New York Fruit Growers' Association, and the combined organization will be known as the New York State Horticultural Society.

President Seth J. T. Bush, of Morton, in his annual address made the following recommendations for considerations: Price fixing, particularly with reference to prices to be paid by farmers for feeds, seeds, agricultural implements, fertilizers, spraying materials, etc.; the enactment of laws for the encouragement and protection of farmers' co-operative organizations; country-wide prohibition for the duration of the war; improvement of the trunk-line highways and utilization of canals for the transportation of freight, including farm produce; more liberal credit to farmers in the matter of farm loans; the standardization of farm tractors; endorsement of the Federation of Agriculture recently formed in this state; the dissemination of facts relative to the cost of production of all farm products, to the end that the consumer may know what the farmer is entitled to receive and an end put to the inexcusable and very harmful distortion of facts constantly appearing in the city newspapers; the desirability of having a uniform Federal Apple Packing law; protection of the grower and shipper from unfair rejections by commission men and speculators; consideration of the serious consequences to the fruit industry of a sugar shortage next summer and fall; better transportation facilities and more equitable freight rates for the products of the farm and orchard.

Is it consistent, asked President Bush, that the potato growers of America should be represented at Washington by the biggest potato speculator in the United States, or that the grain growers should have their interests confided to the biggest wheat gambler in the country? He made an appeal for a stronger organization of farmers.

Grading Law Satisfactory

In the report of the Legislative committee it was said that the New York State Apple Grading law, as amended last winter, has met with general approval. New York graded apples are bringing one dollar a barrel more than similar apples from states that have no grading law. It was recommended that the state Peach Grading law be made mandatory or be repealed. With the largest peach crop in years, no New York state grower packed his last season's crop under the provisions of this law.

Small Fruits

The report of the Committee on Small Fruits was given by O. M. Taylor, foreman in Horticulture at the Geneva Experiment Station. Reports received by Mr. Taylor from eleven counties in the state were characterised by uniformity in two things: The relatively high prices received for small fruits in 1917, and the increased difficulty in securing labor both for carrying on cultural operations and for harvesting the crop. In spite of these obstacles, there is a general tone of optimism. Last year Erie County growers received on the Buffalo market from 12 to 18 cents a quart for strawberries, averaging 14 cents as the ruling price for the season. Columbian raspberries were marketed at about the same price as strawberries. In the average season the Buffalo market will handle strawberries at 5 to 11 cents a quart, Columbian raspberries 6 to 12 cents and red raspberries around 15 cents a quart. Jam makers are now offering to contract for the coming season strawberries at 7½ to 8 cents a quart, packages furnished; cash every load when delivered at local railway station where they are received and loaded into iced cars by the jam maker's representatives. They are also offering to contract Columbians on the same terms, and red raspberries at 11 cents. In Erie County about 300 acres of berries were already under contract early in December to one jam making company alone.

In Columbia County in the Hudson Valley the acreage of small fruits is diminishing, caused by lack of help at harvest time. In Ulster County during the past two years one-third to one-half of the acreage of currants has been pulled out on account of very low prices and but very few young patches have been planted. Taking the small fruits as a whole, they were profitable crops in 1917 and the fruit growers were agreeably surprised with the net results.

Economy in Spraying

Professor P. J. Parrott, of the Geneva Station, gave some "Hints on Economy and Efficiency in Spraying" in which he warned fruit growers not to cut their spraying to a too narrow scope. The most successful commercial growers are going to spray as usual, not withstanding high price of materials, but it is probable that there is not going to be as much spraying among the smaller growers. He favored the use of the local expert, saying that control of insects will never be solved without co-operation of experts who give their time to the work. The movement of the Federal authorities to locate experts in the fruit sections to aid in controlling insect pests was commended. In reference to the new spraying mixtures, Professor Parrott said it would be better for the fruit grower to continue the use of the spraying materials with which he is familiar than to try new methods and materials. This is no time to experiment with new things on the farm. There is some danger in the use of unknown materials. Lime arsenate is a new poison, which is cheaper than arsenate of lead and requires a smaller quantity for application. This may be used with caution. Whatever material is used the growers should beware of excessive spraying. At Geneva the spray gun is used exclusively, and all spraying in the 20-year-old orchard is done from the ground.

Fertilizing

"The Fertilizer Situation During the War" was discussed by Professor G. W. Cavanaugh, chemist at Cornell University. Many samples of soil taken from New York state orchards, analyzed last year at Cornell, showed a potash content ranging from 32,800 to 45,400 pounds in the first eight inches of soil to the acre. The average of phosphoric acid ranged from 2,000 to 4,000 pounds per acre, showing that there is from eight to ten times as much potash as phosphoric acid in these orchard soils. He believes that an adequate supply of decaying humus in the soil will make available sufficient potash for the needs of the growing crops, that nitrogen should be obtained thru leguminous cover crops, and owing to the high cost of acid phosphate he advised the use of finely ground raw rock phosphate in combination with manure. But he gave a note of caution against the use of ground rock phosphate on bare soils. There never was so much need of stable manure, he said, as at the present time.

Fruit Growers' "Bit"

In a paper on "The Fruit Growers' Response to War Conditions," Professor U. P. Hedrick, of Geneva, gave a practical wartime program in orchard work. He advised against heavy pruning, saying that the men who prune trees err by cutting away too much rather than too little wood. Young trees, however, should be pruned to shape, and much pruning is necessary in peach orchards. But this is a good time to see how much wood can be used in fruit trees.

It may be necessary to use fertilizers in orchards on sandy land, but at Geneva, on clay soil, twenty-five years' experience shows that fertilizers are not needed. As garden and truck crops need fertilizers, Professor Hedrick regarded it little short of a crime to use fertilizers in orchards.

The old adage that "tillage is manure" must be taken literally by the fruit growers this year. Fruit will grow in sod in spite of the sod, but this method is not recommended. Unless the orchard needs nitrogen, Professor Hedrick advised the sowing of cover crops that make large growth, such as rye and oats, as they supply more humus than clover or vetch. He also said that no fruit grower is doing his duty to his country who is not planting such intercrops as beans, corn, etc., where these can be grown under normal conditions. In reply to the question, "Should fruit growers plant more fruit," he said that they should take the best care of orchards now planted, but should make no plans for orchard extension. Owing to the world need for staple foods, this is no time to utilize more land in growing fruit.

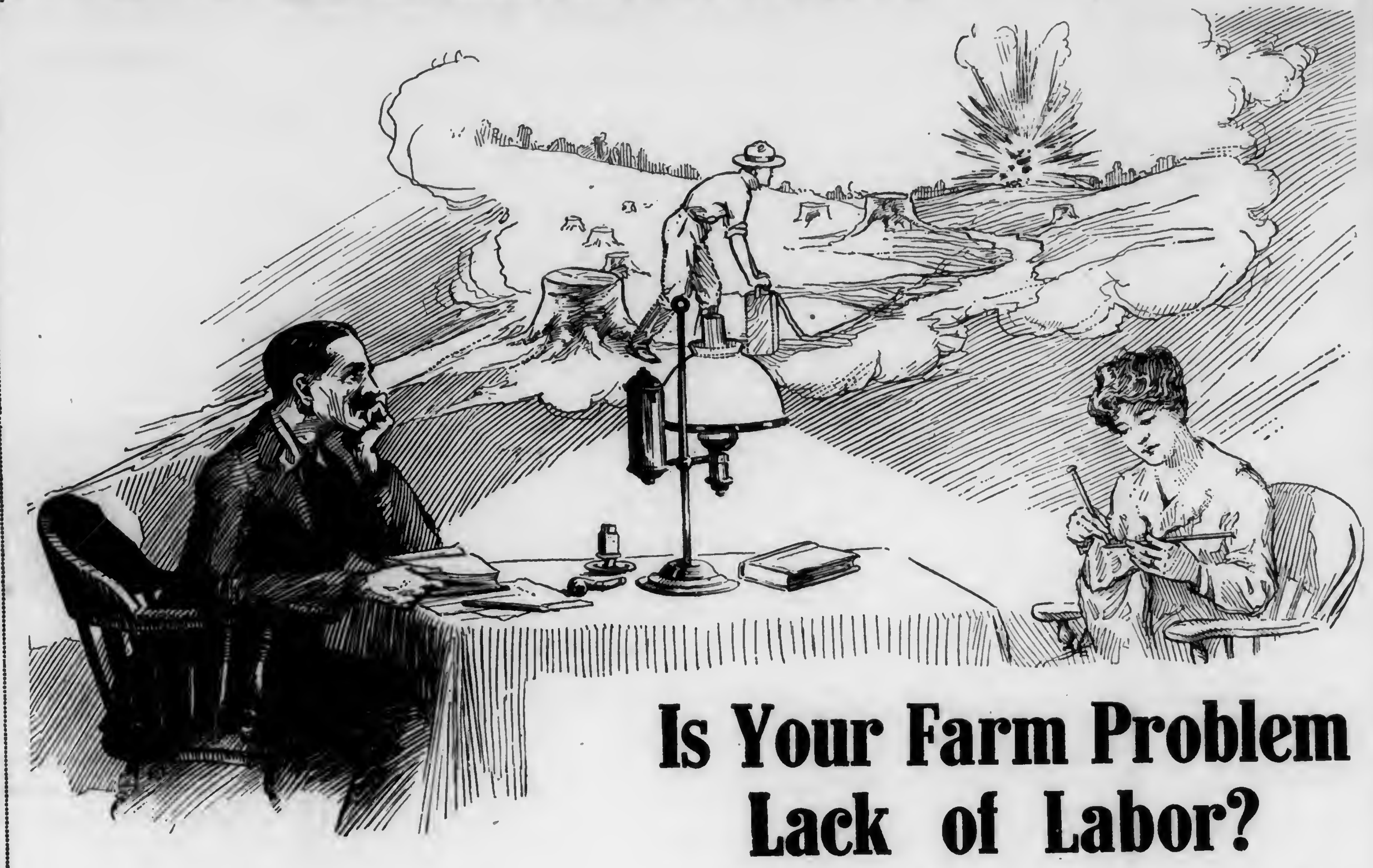
Apple and Cherry Maggots

"The Increasing Menace of the Apple and Cherry Maggots and Methods of Control," was the subject of a paper by Glenn W Herrick, professor of Economic Entomology at the New York State College of Agriculture. This paper was prepared because of the injury from the apple maggot in different parts of the state, and also because of the serious outbreaks of the cherry maggots in Wayne County.

Extensive investigations carried on by Professor Herrick and by Canada specialists show that the cherry fruit-flies may be controlled by spraying the trees lightly with arsenate of lead, 4 or 5 pounds, cheap molasses 1 gallon, water 100 gallons,

(Continued on page 23.)

DU PONT AMERICAN INDUSTRIES



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(Signed) A. H. KRAHN

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Six months ago we bought four cars of International Special Dairy Feed and three more since.

I have been feeding it to my own herd of fifty cows in the place of wheat feeds and find a saving of 75 cents to $1.00 per day on feed and have produced more milk daily.

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My grain ration during this period consisted of three-fourths International Special Dairy Feed and one-fourth yellow gluten.

I have never before or since found any ration to equal International Special Dairy Feed.

(Signed) J. W. PARKYN

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The Man Who Climbs the Silo always votes for the Hinge-Door
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Milkers to the Rescue

Save Time and Labor and Give Little Trouble

By W. H. ROTHENBERGER, Montgomery Co., Pa.

Of the more recently invented labor-saving machinery, there is perhaps none which is used as many hours in a year as is the mechanical milker. The grain drill, binder, corn planter, etc., are used only a few days and stand idle the balance of the year, while the milking machine serves us twice a day every day.

These machines are said to become more economical as the size of the herd increases. On our farm there are only twelve milk cows at present, but even with this small number it would be almost impossible to get along without these milkers. I am usually alone to do the chores and find that it takes me 125 minutes to milk by hand, while with the machines I can easily do it in 50 minutes. Besides saving two and one-half hours of time per day, there are more pleasant ways of spending that time, especially on Sundays and holidays, than by sitting under a cow exercising one's wrists.

Much has been said about garget and other udder diseases being caused or spread by milking machines. In my four years of experience with them, I am sure that they have caused no udder trouble and have never spread it. I can easily see how a careless person could readily spoil the cows by not milking clean, but I think such a person would be more likely to get all the milk by machine than if he milked by hand. I usually milk clean with the milker, but always examine each cow's udder upon removing the cups to make sure that I have all the milk. I also try to remove the cups as soon as the milk has all been drawn. If one quarter happens to milk a little slower than the others, I finish by hand as it is a waste of time to keep a machine going for the benefit of only one teat.

The cows give practically the same amount of milk whether milked by hand or with the machines. We were without power for several days and I could see no difference in the milk flow; but judging by the conduct of the cows, they were strongly in favor of the machines. Several cows that had always stood perfectly quiet for the machine had to be tied fast before they could be milked by hand.

When machines are used, it is easier to grade up a herd. Besides desiring a cow that produces a large quantity of rich milk, we like one with a nice square udder, large teats free from warts, etc., and one that does not kick. When machines are used it makes no difference if the teats are small, are covered with warts, or have an extra opening in the side. A kicker is also easily milked and none of the milk is spilled when machines are used. By tying one leg back, the cups can be put on the teats and since the suction is so gentle as compared with the hand manipulation, she usually does not object, and if she should not like it and decides to lift all four feet at once, the cups will simply follow the teats with no harm done instead of getting her foot into the pail, as usually happens with the hand milker. When these objections no longer exist it eliminates some of the factors which often make a very good cow an undesirable one.

The machines are very convenient to milk cows with swollen udders, especially heifers. Often after calving, the udder swells so hard that it is difficult to get all of the milk, but with the milker it is an easy job and one can work and massage the udder with the hands at the same time.

We use two double units, which milk four cows at one time. The cows are stabled so that the cows in each pair of stanchions require about the same amount of time to milk, so the machines can be kept going without loss of time. I find time to strip any cows that need it and also do some of the feeding while operating the machines. When one is accustomed to it, he can tell by the sound, even when some distance away, when the cows are milked out, or if anything should happen to go wrong with the machines. Of course a record is kept of each cow's production, so partitioned pails are used. This keeps each cow's milk separate so it can be weighed.

The pump of mechanical milkers is usually operated by gasoline engines or electric motors. We use a motor and find it very satisfactory, requiring a great deal less care than an engine. The gas engines which are cooled by water contained in a hopper on top of the cylinder have the advantage that one has hot water to rinse the machines when the milking is completed.

In buying a milking machine, it seems best to invest in one that has been on the market for a number of years and has proved successful. There is no doubt that there are machines which give entire satisfaction if properly operated, while others are not so successful. The labor shortage has caused machines to be put on the market which are intended to sell rather than give satisfaction. A neighbor bought one and has learned to his sorrow that the rubber parts to his cups last only about seven weeks and cost twenty-five cents apiece to replace. The more simple the construction of a machine, especially the teat cups and pulsator, the more desirable it is if it works properly. The more complicated, the more expensive are the repairs as a rule.

It does not require a great deal of time to care for the machines. They are rinsed with cold water and then with hot water each time they are used. The rubber parts are kept in a solution of chloride of lime or other disinfectant solution when not in use. They are given a thoro washing about once a week. This can most easily be done in the kitchen sink and requires very little time.

I find that the milking machines cut in two the labor required for hand milking, do away with the difficulties of incompetent and unreliable help and give a sanitary product. They undoubtedly increase one's profits and most certainly lessen one's troubles.

Violet IV of Corbinez, Guernsey Cow with Record of 16,336 Pounds Milk and 756 Pounds Butterfat as 5-Year-Old. Owned by Waddington Farms, Ohio Co., W. Va.

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100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.
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is carefully sterilized, especially prepared and ready to feed. It produces money makers for you. Buy direct from manufacturer and save money. Prices on request.

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SAVE THE MANURE

Manure Loss Means Money Loss

An enormous amount of plant food is wasted annually on Pennsylvania farms by the improper handling of farm manure. This is of unusual importance today, not only because of the high prices of nitrogen and potash in commercial fertilizers, with which this loss must be replaced if the fertility of the soil is to be maintained, but also because the rise in prices of all farm products has doubled within recent years the monetary returns which may be expected by using manure on the land. Today, when the productive capacity of our soils is taxed to the limit in order to feed the world, we cannot afford to neglect any factor which might be employed to maintain and if possible increase that capacity.

The average dairy cow produces annually about 12½ tons of manure, of which about 8½ tons may be collected in the stable, the remainder being deposited by animals on pasture fields. At normal fertilizer prices, when nitrate of soda was selling at $45 per ton, 16-percent acid phosphate at $12 per ton and muriate of potash at $50 per ton, this 8½ tons had a money value on a fertilizer basis of $1.90 per ton or $16.15 per cow per year. At present prices, with nitrate of soda at $90 per ton, acid phosphate at $20 and muriate of potash at $200, the commercial value of a ton of manure from dairy cows is $4.56 and the total product for the eight months that the cows are in the stable is $38.76 per cow. About 55 percent of this value is in the nitrogen, 37 percent in the potash, and the remaining 8 percent is in the phosphoric acid found in the manure.

The enormous loss which occurs will be better understood when it is known that two-thirds of the total nitrogen and three-fourths of the total potash are found in the urine or liquid part of the manure. Under average farm conditions most of this liquid never gets back to the fields for further use in crop production.

It is understood that no one will pay $200 a ton for muriate of potash for the growing of general farm crops, and that for this reason the value quoted for potash is too high for farm use. It emphasizes the importance, however, in a time when no potash can be purchased for farm use, of conserving all that the crops take out of the soil and returning it in the manure to grow the next crop. Experiments at The Pennsylvania State College have shown that manure used to grow corn, oats, wheat and grass will bring a money return of $3.29 per ton when crops are figured at 64 cents per bushel for corn, 92 cents per bushel for wheat, 44 cents per bushel for oats and $14 per ton for hay. At present crop prices, the money return per ton of manure is worth almost twice the amount mentioned.

While a small amount of loss is unavoidable on any farm, the system of handling manure should aim to avoid the draining away of any part of the liquid, either in the stable or barnyard, fermentation of manure before it is applied to the field, and leaching by exposure to rains. Stables should have a water-tight floor, preferably of concrete, on which enough bedding and absorbent material should be used to absorb all the liquid and keep the cement fairly dry. With a little planning, such a floor may be built at a comparatively small cost. All chaff, straw from clover hulled for seed, uneaten portions of shredded corn fodder and like materials of high absorbing power should be used in connection with the straw used for bedding.

Fermentation and leaching can best be prevented by hauling the manure direct from the stable to the field whenever growing crops permit. The cropping system should be so planned as to make this possible over a large period of the year. Loss by leaching on frozen ground should not deter one from hauling manure on the sod now where corn is to be planted next spring, if the other alternative is leaving it in an open barnyard over winter. Altho some loss occurs by leaching in the case of hilly land, when manure is spread over the snow on frozen ground, such loss is less than the loss which occurs if the same manure is allowed to remain in an open barnyard until spring.

On most farms there are short periods of a few months when manure cannot be hauled directly to the field because of growing crops, etc. In order to conserve during such periods the fertility which is in a readily soluble condition in the manure, a portion of the barnyard should be concreted. This does not require the construction of an expensive concrete pit. A concrete floor, with a low retaining wall of concrete to prevent the draining away of any liquid, constructed over a portion of the barnyard will answer the purpose. This floor may be allowed to slope sufficiently to necessitate a retaining wall on three sides only, thus allowing easy access with the manure spreader when hauling to the field. A roof over this portion of the barnyard is necessary.

The average rainfall in Pennsylvania is 3,300 tons per acre. A manure pile covering only one-thirty-second of an acre, if exposed to the rainfall, would thus be washed annually with over 100 tons of water. If allowed to remain in the yard only two months at a time, this would amount to over 16 tons of water. This

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Every rat on your place, according to experts in the U. S. Department of Agriculture, will cause a loss of more than $2 during the coming year. It is no uncommon thing for farm buildings to harbor forty to fifty rats and great numbers of mice. The resulting loss amounts to a pretty big sum. Build your granaries and barns with

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All over in 3 minutes. Not a harsh method. A clear, clean cut. Cows give more milk; steers make better beef. Send for free booklet.

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To think of the milk yield first and the cow's health afterward is putting the cart before the horse. Many "poor milkers" only need to have their systems working properly to become good producers.

KOW-KURE, the great cow medicine, makes cows healthy and *keeps* them healthy. Working on the digestive and genital organs, it is a prompt, sure remedy for Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite and Bunches. Try KOW-KURE; druggists and feed dealers sell it—55c and $1.10 packages.

Write for "The Home Cow Doctor," free.

DAIRY ASSOCIATION CO.,
Lyndonville, Vt.

KOW-KURE

Three Important Reasons For Buying a NEW DE LAVAL CREAM SEPARATOR At Once

THERE are three very strong reasons for the immediate purchase of an up-to-date De Laval Cream Separator.

In the first place, a new De Laval machine will now save its cost in a few months—in more and better cream and butter and in time saving—at the present very high butter prices and great need of every minute of time.

In the second place, the patriotic duty rests upon every producer of butter-fat to save every ounce of it, and nothing is of greater food value to a nation at war. All European countries are encouraging the sale of the best cream separators in every way possible.

In the third place, railway delays are such that you can't depend upon quick delivery, and if you don't order your De Laval now there is no telling when you can get it. Moreover, the supply of labor and material is uncertain and all last year De Laval deliveries were nearly two months behind.

Again, De Laval prices have advanced very little thus far but must go higher if present industrial conditions continue, let alone become more difficult. Present prices hold good until March 1st only.

There was never a time when the immediate purchase of a latest improved De Laval Cream Separator was more important to everyone separating cream, or when it could less wisely be delayed.

See the nearest De Laval agent at once. Arrange to try a new De Laval machine for your own satisfaction. See for yourself just what it will do for you. If you don't know the nearest agent simply address the nearest General Office.

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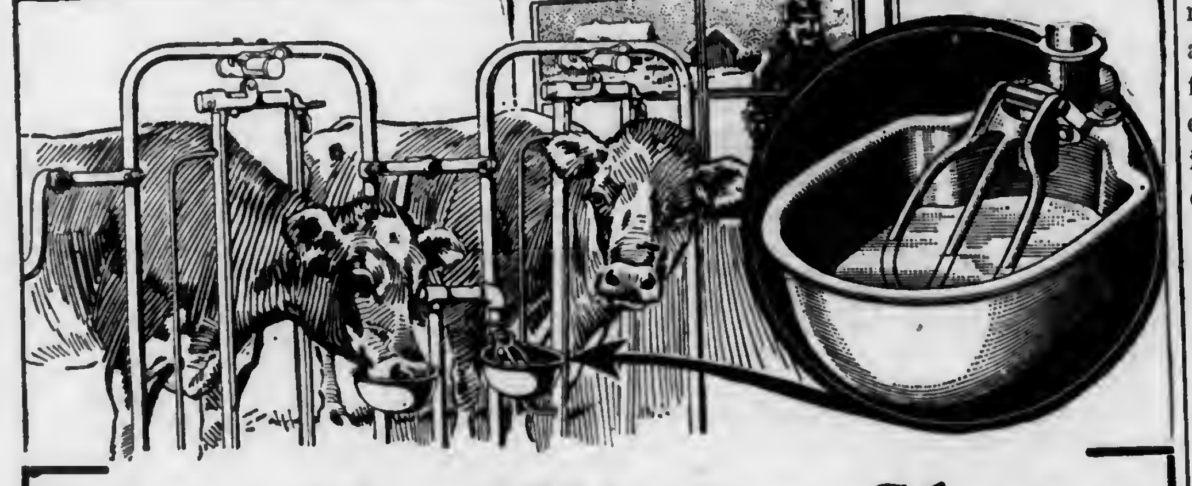

Stop the Winter Slump in Milk Production

If you want summer milk **quantity** at winter **prices**, it will pay you to find out about STAR Water Bowls.

Milk is 90 percent water. The yield slumps in winter because the animals don't get enough to drink. Even when the water in outside tanks is warmed, you know some animals won't drink a drop while they're fighting a blizzard in an open yard. And you can't blame them.

But Star Water Bowls bring it right to the stall—an abundant supply of palatable water—and the cow drinks as much as she does in summer. She will take a mouthful of hay or feed and then a drink of water. That's why Winter milk production goes **up** when STAR Water Bowls go **in**. This system prevents one tubercular cow from infecting the rest of the herd. STAR Water Bowls are individual and sanitary. Water comes and goes separately from each bowl. The sick animal can't contaminate the water used by healthy ones.

STAR Sanitary Water Bowls

Don't buy any kind of barn equipment until you investigate STAR Goods and the patented features found only in this line. Unit System Stalls assembled at the factory and with sanitary Arch Construction. The STAR Adjuster—the STAR Curb Clamp. The strong giant STAR Stanchion easily adjustable and with the One Hand Lock, Woodlined and Automatic Sure-Stop. STAR Litter Carrier Outfits meet every need.

Write us for catalogs. STAR goods sold by best dealers everywhere

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New York Branch: Industrial Bldg., Albany, N. Y.

is in addition to the moisture which the manure already contains, which is usually as much as the litter and absorbent can hold.

Some farmers prefer to have a cistern at the lowest corner of the manure pit into which excess liquid may drain and from which it may be hauled to the field by means of a portable tank. Since a tank has a tendency to rust, however, it is more expensive to maintain than a roof. The extra labor involved in handling rainwater in manure may be avoided by providing a roof.

COW TESTING CUTS DAIRY EXPENSES

Dairymen who have had their profits reduced by increased feed cost will find considerable relief thru cow testing associations. The cow testing association places responsibility on each cow to demonstrate her ability to pay for her feed and return a profit to her owner. The loafers in the dairy herd can not be detected without some system of records. The cow testing association enables the dairymen to calculate the amount of milk and butterfat which each cow returns for the feed she consumes. A system of records will disclose some eye-opening facts concerning the production of individuals of the herd.

Bossy Is the Pet of the Family

Cow testing associations afford a means for co-operative buying of supplies and also facilitate improved methods of feeding. The results which have been obtained by cow testing associations everywhere indicate that a large number of dairymen, who are not keeping records, are feeding some cows at a loss. Sometimes this loss may be attributed to poor producers, poor management, or lack of proper feeding. Savings brought about by cow testing have more than paid expenses during the first year. Marked increase in the production of the herds, and the corresponding reduction of the feed cost in comparison with the milk and butterfat yield always follows.

SAVE THE BEST CALVES

It is becoming more and more important that dairymen who expect to continue in the business use a purebred bull of good breeding and then raise the best of the calves. Several years ago it seemed a simple problem to attend auctions and buy up cows as they were needed in the herd. The cows frequently sold for moderate sums and it was not difficult to buy a few good ones in most any community. Now the farmer who attends auctions will often find that there are only a few cows offered for sale that are worth buying, and these animals are sold for prices so high that the average dairyman hesitates at the purchase. Last year the dairy cows at auctions in our section brought fine prices and the best animals sold for twice what they would have brought 5 or 6 years ago. This does not apply to the large auctions of purebred herds or the auctions of sales associations where several hundred dollars or more frequently change hands for a good cow. I refer to the average farmer's herd, which usually contains just grades of varying quality from "pure scrub" to "almost purebred". It has surprised me to find how many farmers would come for miles to bid on a few high-class grades listed on an auction bill.

Saving the best calves does not mean saving all of them. In general we all believe that a good cow will produce a good calf if bred to a good sire. A medium-to-poor cow may be paying the owner a very small profit, just enough to save her from the block. A cow of that type can hardly be expected to furnish a first-class calf altho the quality of the calf will be improved according to the value of the sire.

A purebred calf is not always worth saving just because it is a purebred. The purebred cattle business has been injured by the policy of some breeders of selling every calf produced at a good price just because it came from purebred parents. I heard a prominent breeder state that some of his neighbors were depending too much for their profit on the sales of stock without making an effort to make the milk and butter produced show an actual profit. In other words, they were disregarding production, which is the basis of the dairy business, and obtaining a good living from purebred animals regardless of how much they would earn. The dairy business must be based on a firm foundation and the breeders who neglect to make a profit on their production are not doing right. One side of the business should not be compelled to bolster up the other side, but both should be managed for profit.

Recently a city man looked at an advertisement of a local butcher for veal calves and stated: "That man is not patriotic. Every calf should be raised for beef or milk. Not a calf should be used for veal." The time will scarcely come when that will be true. A dairyman with a large herd could never be expected to raise all of his bull calves for beef. It keeps him worrying to raise enough feed for his dairy cattle without going

into the beef business at the same time. Some purebred dairy bulls are undoubtedly of inferior quality for breeders but they will never make profitable beef animals and the farmer who veals such a male is doing the right thing and the only thing he can do with profit.

The saving of good heifer calves is another proposition. They have a large prospective value as food producers and leaving all sentiment aside, it is good business for a farmer to raise the best of the heifer calves both for the increase that can be made in his own herd or the money that can be obtained for a good cow.

A calf is not an expensive animal to raise if a farmer has plenty of pasture and grain. The amount of grain necessary for feeding a calf is not large and the amount of work caring for calves during six months of the year does not require much time. A farmer who sells his best heifer calves right now may figure that the money looks good and feed is high and he will consider the deal profitable. Three or four years from now he can visit the farmer who has bought the calves and calculate their value. He may find that they are worth quite a lot of money and he will wonder if that amount could have been earned in any easier way than in keeping those calves.—R. G. Kirby.

MILK PRICES AT RECEIVING STATION

The Inter-State Milk Producers' Association issues the following schedule of prices for 3 percent milk at receiving stations. The price for all other tests vary at the rate of 4 cents for every 1/10 point above this test. This price was approved by the Food Administration and went into effect on February 7.

Miles Inclusive	Freight Rates 46 qts. 11 5 per cent of 40 qts. freight plus 3 percent tax.	Price per 100 lbs. 3 percent
1 to 10	.183	$3.22
11 to 20	.196	3.20
21 to 30	.207	3.19
31 to 40	.219	3.18
41 to 50	.230	3.17
51 to 60	.240	3.16
61 to 70	.250	3.15
71 to 80	.260	3.14
81 to 90	.269	3.13
91 to 100	.277	3.12
101 to 110	.285	3.11
111 to 120	.294	3.11
121 to 130	.302	3.10
131 to 140	.310	3.09
141 to 150	.317	3.08
151 to 160	.324	3.08
161 to 170	.332	3.07
171 to 180	.339	3.06
181 to 190	.346	3.05
191 to 200	.353	3.05
201 to 210	.361	3.04
211 to 220	.368	3.03
221 to 230	.373	3.03
231 to 240	.379	3.02
241 to 250	.385	3.01
251 to 260	.391	3.01
261 to 270	.397	3.00
271 to 280	.403	3.00
281 to 290	.409	2.99
291 to 300	.415	2.98

The present production of milk in France is only 40 percent of what it was before the war. The daily supply received in Vienna is only a little more than 20 percent of what it was in pre-war times. In Berlin the milk supply for children has been reduced one-third. The problem for the United States is not so much to keep down the price of milk as to keep up the production.—Cornell Note.

Shipping space to Europe is so scarce that thousands of tons of urgently needed war supplies are held on American docks awaiting transportation. Even though willing to pay double or treble rates, shippers cannot get their goods through.

Separators Given Priority Over War Materials

A FEW weeks ago, under authority of the French government, a shipment of five hundred Sharples Suction-feed Separators was *promptly* forwarded from here to France. The very next week another order for five hundred Sharples Suction-feed Separators was received and forwarded under similar conditions.

Both shipments were given precedence en route. Munitions might wait. Even food products might wait. But this machine that *saves* butter fat wasted by every other separator or method, was placed in the very vanguard of life's necessities.

It has been said that not munitions, not even money will win the war—but fats.

The English Government recognizes this. On December 22nd, we received the largest order for Sharples Suction-feed Separators our agents there have ever given us. Immediate shipping space was provided by the English Government.

And no wonder they are achieving first place—not merely first place among separators but among economic inventions that have made America great.

SHARPLES

The One and Only Separator

—that will skim clean at widely varying speeds.
—that gives cream of unchanging thickness—all speeds.
—that will skim your milk quicker when you turn faster.
—with just *one* piece in bowl—no discs, easiest to clean.
—with knee-low supply tank and once-a-month oiling.

Sharples is the only separator that automatically and fully prevents cream losses. No matter whether turned fast or slow, the Sharples Suction-feed principle insures clean skimming. Not less than ten pounds of butter per year for every cow is the average saving over any other separator. No wonder they want them in Europe!

See the nearest Sharples dealer at once. He probably advertises in your local paper. If you do not know his name, ask us and we will send it, together with a copy of our 50-page, old-time Song Book in appreciation of your interest. Address Dept. 20 for this information and catalog.

THE SHARPLES SEPARATOR CO., West Chester, Pa.

Sharples Milkers—used on half a million cows daily

BRANCHES: CHICAGO SAN FRANCISCO TORONTO

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Get a Silo that Can't Collapse

The 12 x 24 Craine Silo shown below was erected on the Minnesota State Fair Grounds, moved **22 miles**, and has since been filled 3 times. You may never want to move yours, but the fact that the Craine Silo will not get out of shape or collapse under such strain proves that it certainly cannot under normal conditions. Three distinct walls give this remarkable strength and stability—(1) an ordinary stave silo (no iron hoops), (2) airtight, water roof felt insulator, (3) Crainelox Cypress siding on the outside. Once erected, this silo stays put.

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Covering it the Crainelox way will settle your silo troubles for all time. Send at once for literature, special early discounts and our live wire agent's proposition

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A Solid Proposition to send new, well made, easy running, perfect skimming separator for $17.95. Skims warm or cold milk; heavy or light cream. Different from picture, which shows larger capacity machines. See our plan of

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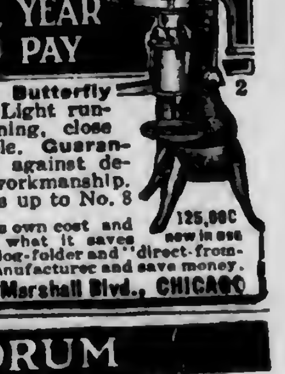

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Every indication points to high prices for all farm crops the coming season. Consequently shrewd farmers will plan to increase their production *per acre* this year.

You can grow big crops by using

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THE WORLD'S BEST BY EVERY TEST

Remember it is not the *number of acres planted*, but the *yield per acre secured*, that brings largest profits on your expenditure.

If you wish to make any inquiries about the needs of your soil, the best crops to grow or the kind of fertilizer to use, write our Agricultural Service Bureau, conducted by Dr. H. J. Wheeler (for many years Director of the Rhode Island Experiment Station), whose crop bulletins, services and advice are free to all farmers.

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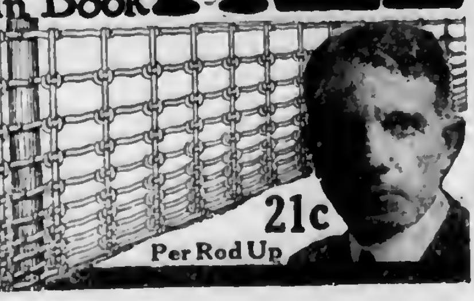

Live Stock

LIVE STOCK IN PENNSYLVANIA

The Crop Reporting Board of the U. S. Department of Agriculture makes the following estimate from the reports of its correspondents and agents on live stock in Pennsylvania and in the country on January 1, 1918, with comparisons with same date of other years:

		Pennsylvania		United States	
		Number	Price	Number	Price
Horses	1918...	590,000	126.00	21,563,000	104.28
	1917...	596,000	126.00	21,210,000	102.89
	1916...	602,000	124.00	21,159,000	101.60
	1915...	596,000	134.00	21,195,000	103.33
	1914...	584,000	139.00	20,962,000	109.32
Mules	1918...	53,000	138.00	4,824,000	128.74
	1917...	48,000	137.00	4,723,000	118.15
	1916...	47,000	137.00	4,593,000	113.83
	1915...	46,000	142.00	4,479,000	112.336
	1914...	45,000	148.00	4,449,000	123.85
Milk Cows	1918...	960,000	75.00	23,824,000	70.59
	1917...	980,000	62.50	22,894,000	59.63
	1916...	971,000	56.50	22,108,000	58.92
	1915...	943,000	59.50	21,262,000	55.83
	1914...	943,000	58.40	20,737,000	53.94
Other Cattle	1918...	717,000	36.80	43,546,000	40.88
	1917...	664,000	30.80	41,689,000	35.92
	1916...	657,000	27.10	39,812,000	33.53
	1915...	638,000	29.30	37,067,000	33.38
	1914...	632,000	28.30	35,855,000	31.13
Sheep	1918...	913,000	11.70	48,900,000	11.82
	1917...	830,000	7.10	47,616,000	7.13
	1916...	835,000	5.60	48,625,000	5.17
	1915...	831,000	5.30	49,956,000	4.50
	1914...	839,000	4.90	49,719,000	4.02
Swine	1918...	1,291,000	22.30	71,374,000	19.51
	1917...	1,174,000	13.90	67,503,000	11.75
	1916...	1,210,000	10.40	67,766,000	8.40
	1915...	1,186.000	13.50	64,618,000	9.87
	1914...	1,130.000	13.80	58,933.000	10.40

Compared with January 1, 1917, the following changes in Pennsylvania are indicated: In numbers, horses have decreased 6,000; mules increased 5,000; milk cows decreased 20,000; other cattle increased 53,000; sheep increased 83,000; swine increased 117,000. The average price per head of horses has remained the same; mules have increased $1; milk cows increased $12.50; other cattle increased $6; sheep increased $4.60; swine increased $8.40.

In consideration of live stock listed for the country the number not on farms, i.e., in cities and villages, is not estimated yearly, but their number in 1910 as reported by the Census was: Horses, 3,183,000; mules, 270,000; cattle, 1,879,000; sheep, 391,000; swine, 1,288,000. The Census of 1910 also reported 2,915,000 goats on farms and 115,000 not on farms.

Following changes in farm animals in the United States compared with January 1, 1917, are indicated: In numbers, horses have increased 353,000; mules increased 101,000; milk cows increased 390.000; other cattle increased 1,857.000; sheep increased 1,284,000; swine increased 3,871,000. In average value per head, horses increased $1.39; mules increased $10.59; milk cows increased $10.96; other cattle increased $4.96; sheep increased $4.69; swine increased $7.76.

In total value, horses increased $66,319,000; mules increased $63,058,000; milk cows increased $278,388,000; other cattle increased $282,431,000; sheep increased $238,338,000; and swine increased $599,378,000. The total value on January 1, 1918, of all animals enumerated above was $8,263,524,000, as compared with $6,735,612,000, on January 1, 1917, an increase of $1,527,912,000, or 22.7 percent.

The increase of 4.5 percent in numbers of all "other cattle" is due to an increase of 4.2 percent in calves; 22.7 percent in heifers for milk; 8.5 percent in other heifers; a decrease of 3.2 percent in steers and an increase of 1.9 percent in other cattle (milk cows not included). Swine over six months old increase 4.5 percent; those under six months increased 7.8 percent.

Pennsylvania Report

The census of live stock on the farms of Pennsylvania on January 1, as announced by the Bureau of Statistics of the Pennsylvania Department of Agriculture, shows the following: Horses, 577,887; mules, 46,216; milk cows, 921,639; other cattle, 621,307; sheep, 820,765; swine, 1,068,333. The figures show that there has been a decrease in horses during the past year of about two percent while the number of mules is about the same as a year ago. Many horses and mules have been shipped from the state for use in the war and the auto truck and tractor are replacing others, but not enough to stop the breeding at about its standard maximum.

Dairy cows have decreased about 4 percent and the number of other cattle about 3 percent. The high prices of feed and the high prices offered for cattle have brought about this decrease.

During the past two years much interest has been taken in the sheep industry. Figures show an increase of about 2 percent, or 17,300 sheep, during the past year. For ten years there was an annual decrease of about 3 percent until 1916, when the interest created in the sheep industry brought about a slight increase over 1915. The increase of the past year promises to create a new interest in sheep raising and with the benefits from the new dog law the million mark is again being sought.

The estimated total value of the live stock is placed at $190,863,653 as compared with $173,580,100 a year ago.

ALFALFA FOR HORSES

Feeding alfalfa hay to horses in limited quantities has been proved a desirable practice but this crop should be looked upon as a concentrate rather than a roughage. One pound of alfalfa hay contains 35 percent more available protein than does a pound of shelled corn.

Allowing the work horse to eat large amounts of alfalfa is not only wasteful but dangerous. The overloaded and distended digestive apparatus crowds upon the lungs and heart. This makes it difficult for the animal to breathe freely and consequently deprives him of a sufficient amount of oxygen when he is at hard work. Practically all the protein not utilized by the body must be eliminated thru the kidneys. This results in excessive stimulation or even inflammation of these organs and excessive urination.

Feeding excessive amounts of protein also has a cloying effect upon the whole animal system, resulting in impaired nutrition, filling and swelling of the legs and hocks, inability to stand hard work, excessive sweating, and impaired respiration. The feeding of from four to ten pounds daily of alfalfa hay which was cut when mature, and is free from dust, mold, or smut, has proved a very satisfactory practice. Whenever possible, horses fed alfalfa hay should also have access to timothy hay, straw, or corn fodder to add bulk to the ration and satisfy the craving that always results when extremely rich feeds are fed for long periods.

The cheapest form of cottonseed meal contains 41 to 43 percent protein. Beware of combinations and mixtures. Cottonseed meal prices are based on the amount of protein contained in the meal. In many instances the protein content is below the amount guaranteed, and for this reason buyers should make their purchases from local dealers whose guarantee is based upon the analyses made by state inspection.—Dr. C. W. McCampbell, Kan. Cir.

Crystal Spring Stock Farm, Adams Co., Pa.

CARE OF MARES BEFORE FOALING

Carelessness and lack of knowledge are responsible for a large number of losses which occur during foaling. This is doubly true because in case of trouble, aid must be given quickly and accurately. The loss of foals before weaning time has been estimated from 10 percent to 25 percent of the crop and the greater part of this loss occurs before the foals are two weeks old.

Prior to the birth of the foal, mares should have enough of good wholesome food and water, plenty of exercise, clean, light and altogether sanitary quarters along with regular attention directed or given by a man who likes the horses and who looks after this matter not from a sense of profit and loss alone, but because of human interest and duty.

On the average farm the problem of exercise is not troublesome. The great difficulty is to find help that will handle brood mares carefully. Brood mares may work up to within two or three days of the date of foaling, and be benefited by it. They should be given moderate but steady work. Such mares should not be given work which requires backing heavy loads, or where there is a chance of slipping.

There are many satisfactory rations for brood mares. Among them E. A. Trowbridge, of the Missouri College of Agriculture, mentions the following: Oats 4 parts, bran 1 part, mixed clover and timothy hay. Or oats 2 parts, corn 2 parts, bran 1 part, mixed clover and timothy hay.

Feed for this class of horses should always be of the best quality and of such composition that it will not cause digestive trouble. As a general rule, mares doing light work should eat approximately one pound of hay and one pound of grain per day per 1,000 pounds live weight. This matter should be governed, however, by the condition of the mares and they should be gaining in condition with digestion in best of condition as the critical time approaches.

Mares should be given a box stall at least four weeks before they are due to foal, in order that they may become accustomed to it, and may also have a place large enough to be comfortable during the night. The stall should at all times be kept clean and well bedded, but particular care should be taken regarding these details when the foal is born. If truly known, the source of navel trouble in foals is generally a dirty stable or yard. As a safeguard against "navel disease", besides the scrupulously clean stall, the navel should be tied and treated with a strong disinfectant, such as a solution of carbolic acid.

If the season of the year and other existing conditions permit, mares may well be allowed to foal on grass which lessens the danger of infection.

PLACING PUREBRED SHEEP

Twenty-seven purebred rams were placed with farmers of North Carolina last fall and early winter for the purpose of improving the local sheep stock. The rams were offered by breeders from all parts of the country and were made available to the farmers at about half regular market price. The work was supervised by the Beef Cattle and Sheep Investigation Office of the state. All of the rams were reported satisfactory and have given good service.

Start Right to Grow More

NEVER before has there been so loud a call for more and still more grain, coming from all points of the compass. Never did you face so great an opportunity to help the world and yourself. Never were good tillage tools so necessary!

Good tillage implements—like **Deering, McCormick** and **Osborne** disk harrows, peg and spring-tooth harrows, cultivators, etc.—make mellow, uniform seed beds, free from lumps, moisture-holding, allowing crops to grow to vigorous full yield. Real cultivation means more bushels and more dollars, and the dollars will pay for your investment.

Deering, McCormick and **Osborne** disk harrows have these big, new improvements: The **Third Lever,** which controls the depth of penetration, regardless of soil condition. The **Exclusive Attachment of the Tandem,** which forces the tandem always to cut the ridges left by leading gangs, yet allows perfect flexibility at turns.

Remember the other tried and thoroughly-satisfactory features—built-in angle steel weight boxes; adjustable forecarriage; tall, hard oilers, convenient and protected; 4-wear wood bushings, improved scrapers, etc.

This year every added bushel counts doubly. Start right with right seed beds. See the local dealer and write us now about **Deering, McCormick** and **Osborne** tillage tools.

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(Incorporated)
CHICAGO USA
Champion Deering McCormick Milwaukee Osborne

MORE WORK FROM YOUR HORSES

Heavy spring work takes the surplus flesh from the horse. His collar no longer fits. His neck and shoulders chafe and gall. He can't do his full share of work and you lose money. Prevent these evils by using TAPATCO Pads.

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Pat. in Can. Apr. 6, 1915.

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At present prices you cannot afford to waste a pound of feed. But you are wasting it—losing good dollars—if your horses, mules, cattle, sheep and swine are not digesting it perfectly because of poor condition. Make your live stock get the full benefit of everything they eat by using

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America's original Stock Tonic and Conditioner. It corrects common live stock troubles in a natural way. Sharpens the appetite—assists digestion and assimilation—regulates the bowels—tones up the whole system—makes rich, red blood—assures 100% feed efficiency—prevents loss and swells profits.

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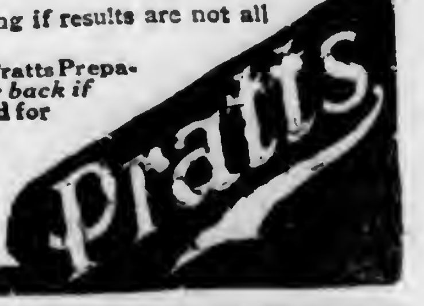

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This field of corn was grown at Molino, Mo., and the above photograph was taken seven weeks after planting. On the left 100 pounds of A. A. C. Fertilizer was used to the acre, and on the right none. This illustrates what good fertilizers will do in the Mississippi Valley, even when used in small quantities.

The U. S. Dept. of Agriculture Says:

"The farmer who wisely and systematically applies commercial fertilizer to his fields will raise larger and better crops. *This statement applies with the same force to the rich soils of the Mississippi Valley as to soils of the Eastern States or of New England.*"

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Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

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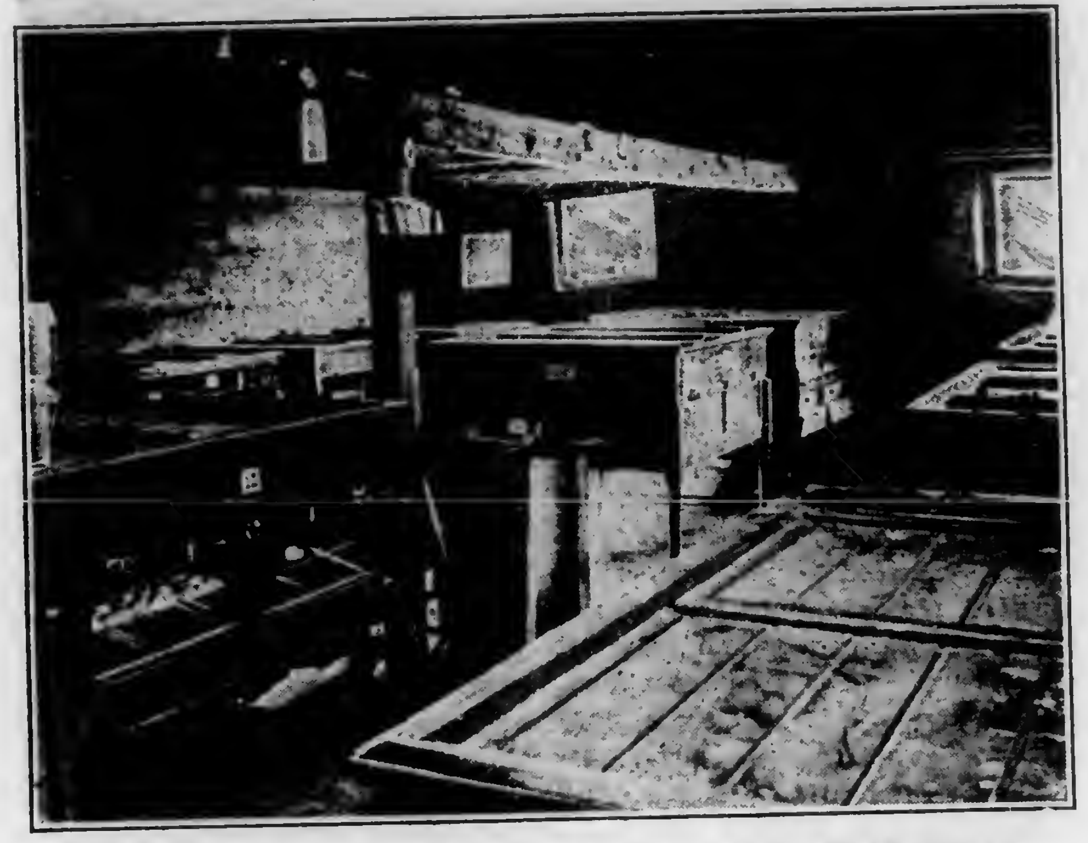
The Delayed Hatch

Some Reasons and Remedies

Perhaps the most discouraging experience in artificial incubation is the delayed hatch. A complete failure of the hatch thru the fault of the eggs, while discouraging, gives one the satisfaction of knowing that the incubation was not at fault, but the experience of finding the hatch a day or more over-due with the resultant production of a few sickly chicks and large numbers of chicks partly hatched, but dead in the shell, is exceedingly disheartening to say the least and this is particularly true in the case of the beginner.



Incubator Cellar Containing a Number of Small Machines

Delayed hatches are not, as some think, entirely the experience of the beginner with poultry, for even the experienced poultryman has his troubles in this regard. Naturally, in the case of the experienced poultry raiser the cause may be due to somewhat different reasons and his previous experience in incubation will enable him to know when the hatch is not coming off right and make possible such measures as will partly overcome the effect before it is too late. However, one should not take the stand, as some do, that a delayed hatch now and then is unavoidable, for in every case there is a preventable cause. The main thing is to discover that cause and eliminate it.

We may divide the reasons for delayed hatches into four principal causes: Too much moisture, too little moisture, insufficient heat, and eggs that are too old or have been harmed by heat or cold before being placed in the incubator. While it is true that the trouble of delayed hatches is principally an incubator complaint it is nevertheless no fault of artificial incubation; it is the operator's fault. Each of the causes mentioned may be brought about in several different ways, but in every case there is a remedy if one will but seek for it.

One of the most common causes of delayed hatches is insufficient heat. For best results the heat of the incubator should average a full 103 degrees for the twenty-one days of incubation, and an average of 103¼ has been found by many experienced poultrymen to give the best results.

Some few poultrymen have advocated maintaining a fixed temperature of 103 to 103½ for the entire three weeks, but best results seem to be obtained where the average is maintained somewhat as follows: 102½ the first week, 103 the second week, 103½ the third week, allowing the temperature to run up to 104 the last few days of the hatch. Where such temperature average is actually maintained there can be no chance of a delayed hatch due to lack of heat. However, thermometer indications are not always to be relied upon.

There are a number of ways in which the poultryman may be deceived as to the real temperature the eggs are receiving. First of these is the inaccurate thermometer. As is very frequently the case after a year or two of use, a thermometer will be found upon testing to register from a half to a full degree below the correct temperature. Where this occurs the cause of delayed hatches is very apparent and the only way to overcome the trouble is to test all of one's thermometers with a clinical thermometer at least once a year. If a thermometer is found wrong it need not be thrown away but may simply be marked and run that much higher when used. The best insurance against this trouble is the use of certified thermometers.

To test incubator thermometers with a clinical thermometer a basin of warm water should be provided, being sure it is not so hot as to break the instruments, preferably not over 100 degrees. In testing, both the clinical and the other thermometer must be placed in the water at the same time and the temperatures read as soon as the clinical thermometer stops rising. It must be remembered that the clinical thermometer will not drop with the cooling of the water as will the incubator thermometer. Therefore, it is only feasible to test one at a time, shaking the mercury down in the clinical thermometer and starting anew with each thermometer.

Another thing that will deceive the poultryman as to the temperature the eggs are receiving is the practice of fastening the thermometer to a stand or hanging it in the compartment with the bulb considerably above the level of the eggs, since the eggs in the trays half an inch below the bulb of the thermometer are perhaps subject to a degree less heat than that registered by the thermometer. This is the reason for the theory some breeders advance that a temperature of 102, 104 and 105 respectively is necessary to obtain a good hatch. Their thermometers are too high; the heat received by the eggs is really 102, 103 and 104, making a general average of 103 for the period of incubation.

The best plan, tho slightly inconvenient, is to use the lay-down type of thermometer, placing the same on the eggs so that the bulb lies in the space between three or four eggs with the bulb on a level with the top of the eggs. Care should be taken not to allow the thermometer bulb to touch any of the eggs since the temperature of individual eggs will vary greatly according to their vitality.

Another thing that is liable to cause improper heating and delayed hatches is not having the incubator level, thus causing the heat to be greater on one side of the compartment than on the other. The best way to level an incubator is with a spirit level, being sure to level the machine both lengthwise and across. A good plan to follow in order to avoid the possible damage uneven heat may cause is to reverse the egg tray end for end and back for front each time the eggs are turned.

Old trays that have been used so long that the wire is sunken between the cross supports allowing the eggs to lay in hollows and thus receive a lower heat than eggs in higher parts of the tray will cause the same result as too low a temperature because some of the eggs are always at a low temperature.

Too much cooling will bring about the same result as too low a temperature and practically amounts to the same thing. Proper cooling is really a matter that must be worked out by each individual for himself. However, a general plan can be given which must be varied under different conditions. With an average temperature of 103¼ degrees it is a good plan to turn the eggs twice daily, allowing no cooling the first week, from five to ten minutes the second week and from ten to fifteen minutes the third week, discontinuing cooling after the eighteenth day.

Cooling must be practiced with common sense and a consideration of conditions. No cooling should be allowed whenever the temperature has been low and more should be given when it has been too high. Many experienced poultrymen find the plan of cooling the eggs until they are cool, not cold, to the touch the best.

Excessive moisture is, perhaps, not so much a cause of delayed hatches as a failure of hatches. Where too much moisture has been applied the contents of the eggs do not evaporate as much as Nature intended, thus causing the growth of an excessively large chick with an air cell that is too small, causing the chick to smother in the shell. Where such chicks do survive they lack sufficient vitality to move about and break the shell and therefore are found dead in the shell.

The condition of excessive moisture is brought about by supplying moisture to machines made to operate without moisture, sprinkling the interior of the machine with water during the first eighteen days of incubation, or exceedingly wet cellars in which the machine is housed.

Lack of moisture is also a cause of delayed hatches and is usually caused by operating the incubator in a dry upstairs room or to neglect of the moisture pans. The placing of the machine in a fairly moist but not wet cellar will usually remedy the trouble. Where the non-moisture type of incubator is used it is a good plan to sprinkle the floor of the cellar frequently during the last few days of incubation, but not during the first two weeks.

Eggs that are too old are also a frequent cause of delayed hatches and of chicks so weak in vitality that they can not break out of the shell without help.

A great many delayed hatches can be saved if proper measures are taken at the opportune time. A hatch that is coming off properly should show the majority of the eggs chipped on the twentieth day and the hatch should be entirely over by the end of the twenty-first day.

Poultrymen of experience, upon seeing that a hatch is not showing up right on the morning of the twentieth day, will increase the temperature to 105 and even 106 by the end of the day, but never higher than that. If by the morning of the twenty-first day the majority of the chicks are not out he will begin to apply moisture.

An excellent manner of applying moisture in such cases is with a small spray pump, spraying the interior of the machine, including the eggs, with a fine mist of hot water. The application of the moisture will cause the temperature of the machine to fall several degrees and gradually rise again as the moisture evaporates. This condition must be adjusted by raising and lowering the heat as necessary.

It is always best to remove the hatched chicks to another machine or warm basket before applying the moisture to the partly hatched eggs. Two applications of moisture, given five or six hours apart, will accomplish all that is possible in that way.—J. Raymond Kessler, Chester Co., Pa.

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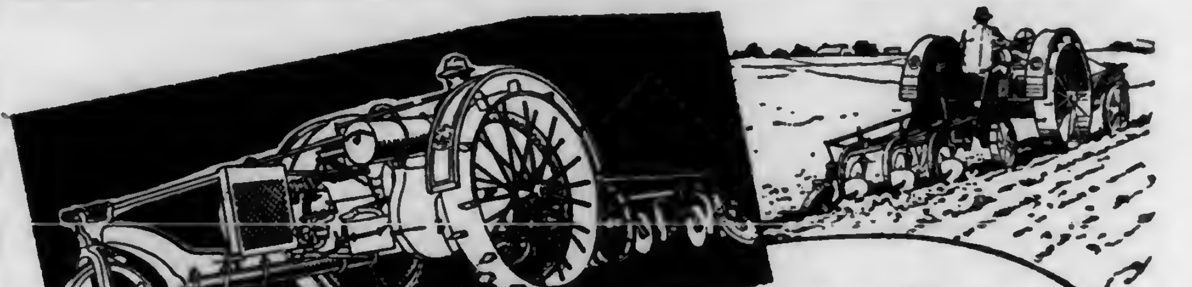

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The Home Sewing—V

By M. JANE NEWCOMB,

Home Economy Department, Pennsylvania State College

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(No. 1 of this series explained measure taking; No. 2, how to adjust patterns; No. 3, use of adjusted waist pattern; No. 4, underwear processes.)

Bias Strips

Cutting Them.—Fold the material so that the warp threads are laid on a line with the woof threads, that is, so that point A, Fig. 2 lies on point B, and the fold comes on a true bias or diagonal, as the line CD. Make the first cut along this fold. Then measure on both selvages one-third more than the desired width of the strip, and mark the points, as at E and G on one selvage side and at F and H on the other selvage. Now lay a yard stick on the material from point E to point F, and mark along this line. Then lay your yard stick thru points G and H, and mark along this line. If a number of strips are to be cut, it is best to measure and mark all at once, before beginning to cut, because it is thus easier to do the measuring correctly. The strips must, of course, be exactly the same width all the way.

Joining Bias Strips.—Lay the two diagonal ends of the strips with their right sides together, and adjusted so that the edges of the strips come exactly together at the beginning and end of the seam, with the points projecting as at A and B, Fig 3. Baste and stitch, then the seam will look as at CD, Fig. 4.

Bias Facing

By Hand.—Lay the right side of the bias strip on the right side of the garment, bring the edges together evenly, and stitch a 3/16-inch seam with a running and back stitch. Turn the facing to the wrong side of the garment to cover the edge, turn the raw edge under carefully, and hem down.

By Machine.—Turn a ¼-inch edge of the garment to the wrong side and baste in place. Make a 3/16-inch turning on both edges of the bias strip, place the bias strip on the wrong side of the garment, stretch it so that it will fit, baste the two folded edges together, making the edge of the strip come a little inside the edge of the garment; now stitch both edges.

Bias Binding

By Hand.—Lay the right side of the strip on the right side of the garment. Bring the edges together evenly, baste a 3/16-inch seam and sew with a running and back stitch. Make a 3/16-inch turning on the other edge of the bias strip, and hem down this folded edge even with the stitches of the first sewing.

By Machine.—Baste as for facing by hand; make a 3/16-inch turning on other side of the bias strip, baste this folded edge on line with and covering the first stitching, then stitch on the right side of the garment in such a way as to take in both edges of the binding, and thus fasten both edges with one stitching.

Making a Ruffle

Cutting It on the Straight.—Such a ruffle should be cut across the warp threads of the cloth. Measure the desired width of the ruffle on both selvages, and mark the points; then cut across from point to point, making sure to have the strip the same width all the way. The parts of a straight ruffle should be joined with a narrow felled seam on the wrong side.

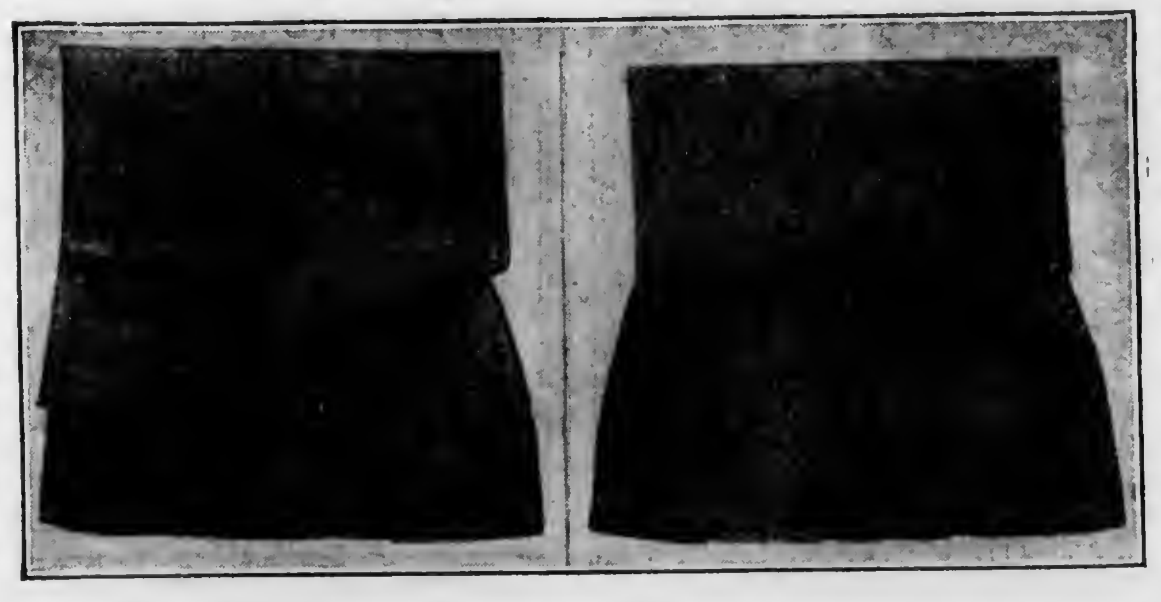
A ruffle may be finished with a hem varying in width according to the width of the ruffle, or it may be finished with embroidery, as described in Article 4 of this series.

To get the gathers of a ruffle even, the strip should be divided into quarters, and each quarter should be gathered on a separate thread. Use a double thread with a knot, and work on the right side of the garment, gathering about ¼ inch from the edge with an uneven running stitch made by taking up about two threads of the cloth and passing over four (Fig. 1, A).

Joining a Ruffle to a Skirt

Inserting in a Hem.—To insert a ruffle in a hem, turn the hem to the right side of the garment and crease hard. Divide both ruffle and hem into quarters and mark the divisions. Insert the edge of the ruffle in the hem (Fig. 5, A), with the right side of the ruffle to the right side of the garment, crowding it closely into the crease, baste and stitch about ¼ inch from the edge of the fold (Fig 5, B). Turn the hem to the wrong side, baste and hem down the upper edge, then the right side will look as in Fig. 6, A and B.

Putting on Ruffle with Bias Facing.—Divide both garment and ruffle into quarters and mark the points. Baste the ruffle to the garment and stitch the seam. Turn the raw edges up on the garment, cover with the bias band, baste and stitch on both edges. This finish may be made on either the right or wrong side of the garment.

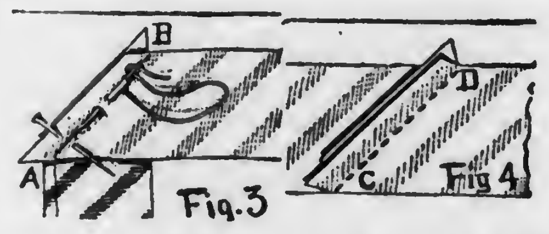


OLD-FASHIONED CORN MEAL

Fresh, Burr-Ground Meal Has No Superior

Last season America raised three and a quarter billion bushels of corn, equal to the total of all other cereals; the richest, most nutritious, most wholesome and most palatable of them all; and she treated it as only fit for stock food. Yet we are struggling with the food supply question, and our instructors are adulterating wheat flour into unpalatable bread as a war measure.

The Puritan Fathers, coming from Europe, were wheat eaters. They knew no corn. The Indians kept the colony alive thru the famine winter with corn; yet the Puritans never considered it other than an addition to a wheat diet. They made hasty pudding, and they made "Rye and Indian" bread; and later, corn muffins. The southerner fed his slaves on corn, thereby developing an entire regime of corn foods without peer in the world. But the slaves were classed with the other live stock, and the colored chefs with bandana handkerchiefs about their heads could not overcome the stigma. It is time we faced this princely food element squarely and gave it its full due.



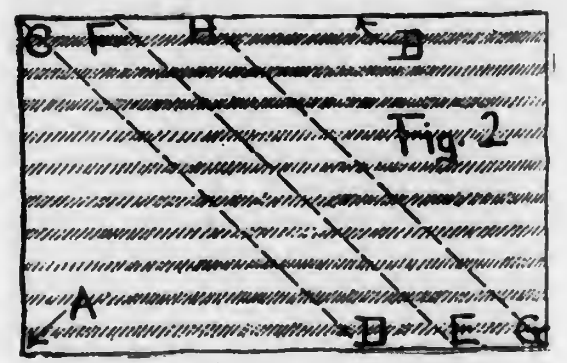
To begin with, corn is not, like wheat, an indefinite keeper. It is rich in oil, and the oil oxydizes on exposure to the air and becomes "strong", then "sour". All corn meal ought to be used as soon as possible after grinding. Corn will keep in the crib, in the ear; to a less degree it will keep shelled; but what people know as the characteristic corn taste is the first stage of rancidity. Rejecting corn meal that has stood an indefinite time in commercial stock is on a par with rejecting eggs and milk for the same reason. Who wants to do this excellent food stuff justice must get it fresh, even tho he have to shell out the ears himself and grind it in a hand mill at home.

Many years ago, when the roller process for wheat was perfected, the millers tried it on corn; and they gave the market a granulated meal, like sand. There was much protest among the cooks; but the millers persisted, issuing instructions how to handle the meal. It was of no avail. Since then people have used less and less corn meal. It would not do the same work. It would make a lighter mush, but for bread purposes it was ruined. We must get back to the burr-ground meal—and use it fresh. Then we must get back to the old-time cookery. One of the old-time princesses of the southern kitchen would have refused to insult her corn cookery with the admixture of any other ground cereal whatsoever. Modern cooking experts may say all they like, that corn meal can not be used alone. The "mammies" used it that way. The modern cook simply does not know how. But that is a personal matter.

For illustration: The writer's family has been using corn griddle cakes for the breakfast table with almost unfailing regularity during the present winter. The corn is taken from the crib in lots of a dozen ears. It is dried as may be on the kitchen mantle-shelf until wanted. It is ground fine in a hand mill, mixed into a cake batter with baking powder and sweet milk, and baked just like buckwheat cakes. One tablespoon of meal makes two cakes. It will not do to tell how many cakes are allotted to each person. Suffice that no other bread is used for the meal—or wanted. The cakes are light, they never cloy, and there is no digestive disturbance following. Such cakes would be impossible with the commercial granulated meal; and with meal of an uncertain age they would be unpalatable.

An old southern dish consists of a corn meal thick batter made with sour milk and soda put into a deep pan, covered with thin slices of fat bacon, the lid set on, and baked in a slow oven for three or four hours. A two-quart pan will bake a loaf two or three inches thick; and one person will eat one of six wedges into which it is cut. It is as light and palatable as the best cake. But the granulated meal will not make it unless flour is added to hold the gas, and flour spoils the dainty flavor. The starch of corn like that of rice is flinty, and requires long baking to become wholly soft.

Prof. McCollum's experiments with vitamines have demonstrated that animals can not live and reproduce on a wholly wheat diet. They have done so for him fairly well on a wholly corn diet. If we will admit to ourselves that we really do not know corn, and set about it humbly to learn, Europe can have our wheat and we will live better than she, not denying ourselves from a sense of duty but consuming our heritage from the Indian by choice, as more desirable.



The unfortunates who dwell in the city may never know the deliciousness of good corn, for it is not in the city market. That is only one of the good things of life they must do without for the sake of being within reach of the movies. But there is no such handicap on the farmer. Let him go to his crib, grind his own corn meal and have his wife stir up a batch of corn meal griddle cakes. And it is an old saying, that where there is corn on the table there is no dyspepsia.—Charles H. Darlington, Chester County, Pa.

WOMEN IN PENN STATE WINTER COURSES

Twenty-five percent of the short course students at Pennsylvania State College this winter are women, the largest enrollment of women in the history of these courses. Several are faculty women who are pursuing some special subject in domestic science, but the majority are following a regular, approved schedule, in preparation for definite work.

One, the mother of a Penn-State graduate of the class of 1916, is to take part in the city garden work of Reading. Her son is in the army. Two sisters are preparing for service in the "better homes movement" in Susquehanna County. One young woman is employed in the college creamery, and is taking some secretarial night studies.

A sister and a brother from a dairy farm in Somerset County are taking the course. The sister has already swung from the short course into a special course covering two years. She is also learning typewriting, and earns pin money by doing a family ironing.

The youngest member of the class is sweet sixteen. She is planning to enter the college for a four-year course at the age of 19, and to study stenography and typewriting. She expects to prepare herself for advanced work in chemistry.

In the two-year course five women are preparing for definite work. One of these is a married woman who expects to engage in institutional farm management. A Swedish young woman from a colony in McKean County is getting in training to manage a farm of her own.—Julia C. Gray.

CABBAGE IN MANY WAYS

In these days when the housewife is admonished to use home-grown vegetables, the cabbage is coming into its own. Following are some delicious ways of serving this too often slighted vegetable:

Stuffed Cabbage. — Select a firm head, cut away the outside leaves, soak 30 minutes in warm salted water. Drain and drop in ice cold water for 30 minutes. Drain and parboil for 15 minutes, drain again and dip in cold water for 5 minutes. Put back in colander in which it has known so many drainings, and let stand 15 minutes in a cool place while you make a dressing of ¼ lb. lean veal and ¼ lb. fat fresh pork put thru meat grinder, 1 chopped sweet pepper and seasoning of salt, pepper, parsley and nutmeg. Bind together with two well-beaten eggs. Scoop out the center of the cabbage, fill with the dressing, tie in a thin white cloth and cook in water to which 1 tablespoonful of lemon juice has been added. When tender remove to a hot dish, pour around it 1 cup of brown sauce, and serve. In draining the cabbage care should be taken that it retains its shape.

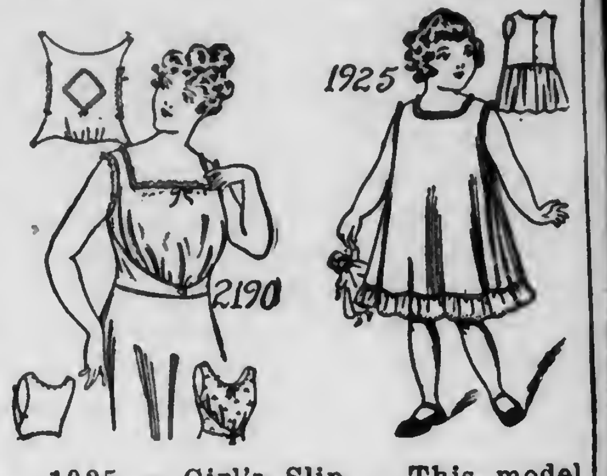
Baked Cabbage. — Put alternate layers of cold cooked cabbage and cold mashed potatoes in a casserole. Over the top put a layer of bread crumbs dotted with butter. Pour on 1 cup of rich meat stock and set in a moderate oven until nicely browned.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

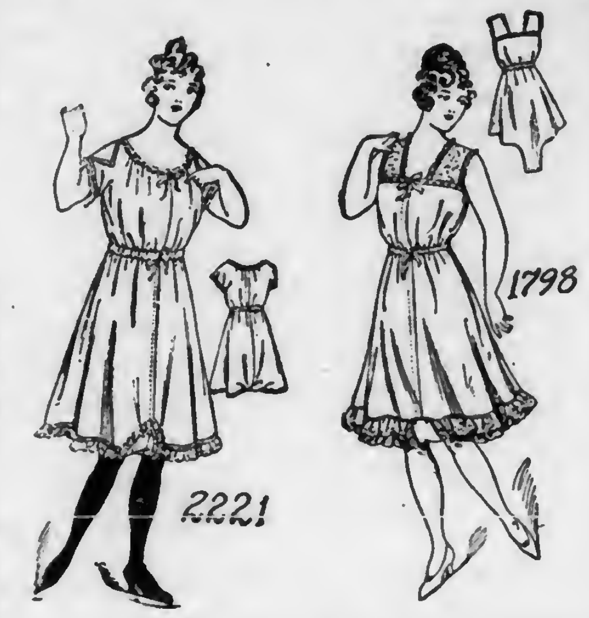
Under Muslin Wear

2190. — Ladies' One-Piece Corset Cover.—Round, square or "V" neck. Suitable for "all over" embroidery, for lawn, batiste, cambric, nainsook, crepe or silk. Any desired trimming may be used. Very easy to make. Pattern is cut in 6 sizes: 32, 34, 36, 38, 40 and 42 inches bust measure. It requires 1⅜ yards of 36-inch material for a medium size. Price, 10 cents.



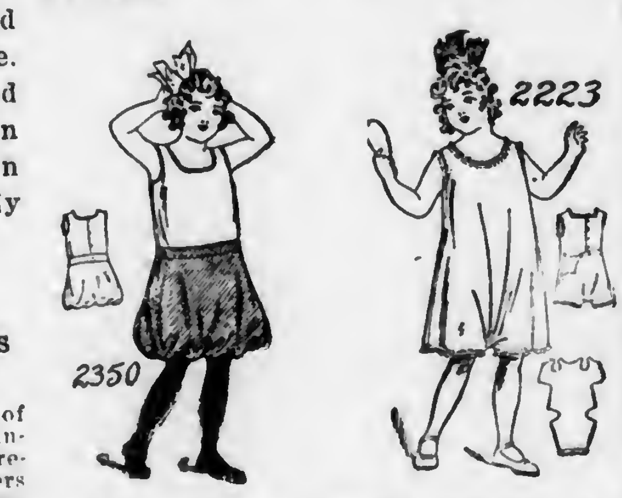
1925. — Girl's Slip. — This model has added fulness at the back in the skirt, which is joined to the waist portions. The ruffle may be omitted. Lawn, nainsook, batiste, flannellette and crepe are nice for this model. The pattern is cut in 5 sizes: 2, 4, 6, 8 and 10 years. It requires for size 6, 2 yards of 36-inch material. Price, 10 cents.

2221. — Combination Envelope Drawers and Corset Cover.—Nice for muslin, crepe, cambric, lawn, dimity, batiste and silk, and may be trimmed with lace or embroidery. Pattern is in 4 sizes: Small, 32-34 inches bust measure; medium, 36-38; large, 40-42 and extra large, 44-46. Size medium requires 3⅜ yards of 36-inch material. Price, 10 cents.



1798.—Another Envelope Garment.—This style forms an ideal combination of corset cover and drawers when gathered at the waist and finished as illustrated. Without the envelope extension it becomes a chemise in regulation style. The pattern is cut in 3 sizes: Small, medium and large. It requires 3½ yards of 36-inch material for a medium size. Price, 10 cents.

2350.—Little Girl's Bloomers and Waist.—For the waist, cambric, muslin, drill, jean or canton flannel may be used. The bloomers may be of serge, sateen, alpaca, or of material to match the dress with which they are worn. They are circular in shape, and take the place of petticoats. Bloomers are an ideal undergarment for growing girls. They give freedom in walking and running, are neat and easy to launder. The pattern is cut in 5 sizes: 4, 6, 8, 10 and 12 years. Size 10 requires 2⅜ yards of 36-inch material for the bloomers and 1⅜ yards for the waist. Price, 10 cents.



2223.—Little Girl's Envelope Garment.—This garment is in one piece. The waist portion closes at the back and the drawers button over its lower edge. The pattern is cut in 6 sizes: 1, 2, 4, 6, 8 and 10 years. Size 6 requires 1⅝ yards of 36-inch material. Price, 10 cents.

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WHY FARMERS LEAVE THE FARM

We agree fully with L. Wayne Arny that "any effort tending to make the farm worker more satisfied with his lot will be well worth while" but, since the majority of farm families are possessed of some degree of brain power coupled with a growing tendency to exercise it, the first step in that direction must necessarily be toward making that lot more satisfactory.

By all means, let the man operate his farm as a business; which, translated, means figuring all the expenses that enter into the production of a thing, counting his own labor at the market price, including depreciation, interest, etc., and adding 10 percent profit. The price at which the article sells must cover all this and the farming class must organize sufficiently to enforce the price.

Mr. Arny makes a collossal error when he says the average city man who is skilled in his particular trade to the same degree that the farmer is in his, earns probably $18 per week. In the cities of Western New York and Pennsylvania and Eastern Ohio, ordinary factory workers start in on $18 or more; whereas, a city man who had never worked on a farm couldn't possibly earn his board for sometime. He would never forget to demand good wages, but the farmer would be out of pocket more than he paid him in cash. A factory hand with perhaps three years' experience easily commands better than $30 per week, while a farm hand, three years from the city, would not be at all skilled. Many young men in the selective draft have farmed 15 years or more; suppose those years had been spent in a factory or office, would the man not have attained a far better position at infinitely better wages? Certainly the farmer has his house free of rent, and so has the city man on precisely the same conditions—that he own it, pay taxes upon it, and keep it in repair. My father-in-law is a city man who owns his own house; indeedfi he owned it for some time before he lived in town and, during that time, there was practically no difference at the end of a year, whether the amount invested in the house had been where it was or in the bank. The rent collected was, of course, greater than the interest the bank would have paid but the net gain, after deducting taxes and cost of upkeep, was entirely insufficient to cover labor and trouble of looking after the property.

No, we don't imagine that any feature in farm training makes for later success in industrial work, except as the hardship involved develops stronger character than the comparative ease of city life. It is, however, generally conceded among educators that the farm youth easily outstrips the town or city youth in the class room, and why not in the factory? From a financial standpoint, surely Mr. Arny is not telling the story of any young man of my acquaintance who has gone to the city. We soon hear of the property these young men are acquiring, tho they never owned any before; then they begin to own interests in different business concerns, and soon the receipts from these outside investments grow larger than their wages. Presently they become what we would consider rich men and, while we grant that no one has much identity in a big city, he has comfort and modern conveniences and his own little circle of friends.

Frankly, it doesn't appeal to me because I love the country and should always be homesick in the city, but we are surely paying a toll we can't afford for the privilege of living here, and I have no doubt that unless some radical change occurs we shall eventually be forced to the city. Perhaps the "young people can not be expected to weigh advantages and disadvantages with mature judgment," but ours usually do it fairly well and I have yet to see one from our community who went to the city because of its allurements. We love our country church, our grange, and our multiplicity of purely rural good times, but they are fast proving to be luxuries we can't afford, and we shall not live here under present conditions until we starve. But when we leave, we shall go as our neighbors have gone before—soberly and because we must.—Mrs. E. M. Anderson, Chautauqua County, N. Y.

AGRICULTURAL BILL IN CONGRESS

In considering the bill making appropriations for the Department of Agriculture, the usual motion was made—an annual affair—to cut out the free distribution of seed. On motion, however, of Representative Candler, of Mississippi, it was decided to increase the appropriation from $242,320 to $364,480 for free distribution of seed. The campaign for back-yard gardens by the food administration, he said, has made the demand for seed greater than ever before.

Rural carriers are increased, in accordance with the provisions of the Steenerson bill, 15 percent up to $1,500 and $24 a mile a year for each mile over 24.

AN OPEN LETTER

In an open letter in which he recites the past experiences and present needs of farmers, Mr. Gifford Pinchot concludes with the following:

"The farmers of Pennsylvania know that the risk was taken out of the production of ships when the Government undertook to supply the money, find the men, furnish them homes, buy the ships when built, and pay the builders a fixed profit above all their expenses. When the railroads were taken over, the risk was taken out of railroading by a Government guarantee of a fair return on railroad securities. In much the same way, the risk has been taken out of the production of war munitions on a vast scale. But except in the case of wheat and to some extent of pork, the farmer is asked to take all the risk in an enterprise whose success is more vital than any other to victory in the war.

"The farmers have long known that under these circumstances it is impossible for them to equal the crop they raised last year, much less to increase it. We are told by those who know just as surely that shortage of labor, shortage of seed, the losses of the past, the high cost of farm supplies, and the lack of confidence in the future, stand like a stone wall between what the farmer would like to do and what he can actually accomplish.

"There is no need to agitate among the farmers. The known facts have done that already. Nor is there any danger that such a statement as this will add to their discouragement. The farmers have long been fully advised. But there is need to get the known facts to the people of the cities in order that these known facts may convey their own most serious lesson. Unless the people of the cities can be brought to understand the situation of the farmer well enough to provide him the means of doing his work, the crop of 1918 will be less than the crop of 1917, and the necessary consequences will follow.

"It must be made possible for the farmer to render to the Nation the services which the Nation and the war most deeply need. It is not possible now.

"One necessary step is to take the farmer into partnership in the war. At the time this is written, so far as we know there is not a single representative of the organized farmers of the Nation in any position of authority in the U. S. Food Administration, the Council of National Defense, or of any of the great bodies organized to conduct the war.

"At the time this is written, there is not a single representative of the organized farmers of Pennsylvania among the hundreds of members of the State Food Administration, the State Fuel Administration, or the Committee of Public Safety of the Keystone State.

"A silent partner in business is a man who has a voice in the control of an enterprise without doing the work. If the farmer is today a silent partner in the war, it is on the theory that he is to do the most essential part of the work, but have no voice in the control of the enterprise.

"The first necessity, without which nothing is possible, is for the people of Pennsylvania and the Nation to realize the facts. The second step is to stop making an outsider of the man who is more needed than any other to win the war. The third step is to re-establish the confidence of our farmers by giving them convincing assurance that the means of production are going to be available. Among these are labor, credit, seed, fertilizer, the assurance of a fair price for their crops when grown, and a realizing sense that the Government is as much alive to the needs of the producers of food as it is to the needs of the producers of ships, transportation, and munitions. The Government must say to the farmers: 'We are gladly doing our part to help you—come and do yours.' Instead it says: 'We are carrying much of their burden for many others, but very little of yours—go and carry it alone.'

"The object of this letter is to set forth on the basis of actual knowledge, that we are threatened with failure in the one duty in which we can serve our people and our Allies best, the one service we are most fit to render in order to win the war, the one thing most necessary to be accomplished, a general increase in our crops next fall. Unless we take steps to prevent it, our Allies will be short of food next year, and it will be our fault."

MEETING OF NEW YORK STATE FRUIT GROWERS' ASSOCIATION

(Continued from page 10.)

or with arsenate of lead alone 5 pounds, water 100 gallons, a few days before the fruit begins to blush red, generally in the early part of June. In badly infested orchards, at least during the first season, two applications should be made about weeks apart. If a heavy rain follows the first application another spraying should be made.

The apple maggot may be controlled by spraying the trees rather thoroly with either one of the foregoing mixtures, preferably the latter. The first application should be made the last week of June or first week of July for the early varieties and about the middle of July for the late varieties. Previously badly infested orchards should be sprayed twice, at least during the first season. The application should be repeated after a heavy rain. It should be said that under certain conditions the sweetened bait has given some burning on apples.

A leading Canada fruit grower said he used nothing else than the regular fungicide sprays for the cherry and apple maggot. A Western New York grower said he had controlled these pests with lime-sulphur and arsenate of lead. He makes the last spraying when the cherries are about the size of peas.

Berry Culture

Some "Latest Ideas in Berry Culture" were given by L. J. Farmer, an extensive small fruit grower of Pulaski, N. Y. Mr. Farmer regarded the selection of varieties the most important question, and advised the planting of several varieties for the purpose of finding the best for the individual grower's local conditions. He had been successful in developing small markets, and in supplying farmers with fresh berries. One of the greatest values of heavy mulching, he said, was killing the crop of spring weeds. Paying berry pickers by weight instead of by the quart was recommended.

Farm Loans

An address on "Farm Mortgage Loans," was given by James B. Morman of the Federal Farm Loan Bureau at Washington. It was the wish of this organization, Mr. Morman said, to know how the farmers feel in regard to its plans. The claim that loans are not going to be made on orchard properties is not true. The Farm Loan regulation on orchards is that where lands have no substantial value except for orchard purposes no loans shall be made. But while orchards shall not be regarded as permanent improvements, they shall be taken into consideration as enhancing the value of the land. The regulations say that the value of the land shall be put upon its productive capacity. In Washington and Oregon loans have been made on orchard lands to the extent of from $300 to $700 an acre, and in Western New York up to $230 an acre.

Fruit Diseases

Professor H. H. Whetzel, of the State College of Agriculture at Cornell University, gave some up-to-date information on "Fruit Diseases and Their Control." He emphasized the need of spraying for apple scab before the blossoms open. While not 20 percent of the growers spray regularly before this time, he said it was the men who sprayed thoroly before the blossoms opened last year who got the clean apple. It is more important to have leaves free from the scab than the fruit, as there must be full foliage to have fruit.

Baldwin Spot, according to Professor Whetzel, is caused by an uneven supply of water in the soil, and can not be remedied by spraying. His advice was to keep the soil thoroly cultivated to preserve soil mulch in dry weather, and later grow cover crops to take up the surplus water in late rainy seasons.

(Concluded next week.)

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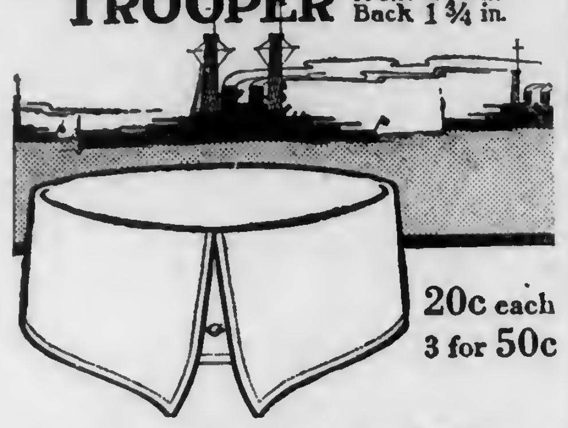

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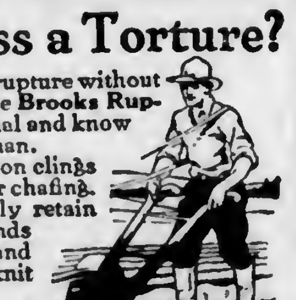

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NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

CHAPTER XXX (Continued.)

It was late November. A far, clear air drew the snow-capped ranges sharply down to the eye of the desert—as if the speckless sky, lighted by the radiant sun, were but a monster glass rigged to trick the credulous retina. De Spain, in the saddle in front of the barn, his broad hat brim set on the impassive level of the Western horseman, his lips seeming to compress his thoughts, his lines over his forearm, and his hands half-slipped into the pockets of his snug leather coat, watched Page with his light wagon and horses drive away.

Idling around the neighborhood of the barns in the saddle, de Spain saw him gradually recede into the long desert perspective, the perspective which almost alone enabled the watcher to realize as he curtained his eyes behind their long, steady lashes from the blazing sun, that it was a good bit of a way to the foot of the great outpost of the Superstition Range.

De Spain's restlessness prevented his remaining quietly anywhere for long. As the morning advanced he cantered out on the Music Mountain trail, thinking of and wishing for a sight of Nan. The deadly shock of Pardaloe's story had been dulled by days and nights of pain. His deep-rooted love and his loneliness had quieted his impulse for vengeance and overborne him with a profound sadness. He realized how different his feelings were now from what they had been when she knelt before him in the darkened room and, not daring to plead for mercy for her uncle, had asked him only for the pity for herself that he had seemed so slow to give. Something reproached him now for his coldness at the moment that he should have thought of her suffering before his own.

The crystal brightness of the day brought no elation to his thoughts. His attention fixed on nothing that did not revert to Nan and his hunger to see her again. If he regarded the majestic mountain before him, it was only to recall the day she had fed him at its foot, long before she loved him—he thought of that truth now—when he lay dying on it. If the black reaches of the lava bed came within view, it was only to remind him that, among those desolate rocks, this simple, blue-eyed girl, frail in his eyes as a cobweb despite her graceful strength, had intrusted all her life and happiness to him, given her fresh lips to his, endured without complaint the head-strong ardor of his caresses and, by the pretty mockery of her averted eyes, provoked his love to new adventure.

Memory seemed that morning as keen as the fickle air—so sharply did it bring back to him the overwhelming pictures of their happiness together. And out of his acute loneliness rose vague questionings and misgivings. He said to himself in bitter self-reproach that she would not have gone if he had been to her all he ought to have been in the crisis of that night. If harm should befall her now! How the thought clutched and dragged at his heart. Forebodings tortured him, and in the penumbra of his thoughts seemed to leave something he could not shake off—a vague, haunting fear, as if of some impending tragedy that should wreck their future.

It was while riding in this way that his eyes, reading mechanically the wagon trail he was aimlessly following—for no reason other than that it brought him, tho forbidden, a little closer to her—arrested his attention. He checked his horse. Something, the trail told him, had happened. Page had stopped his horses. Page had met two men on horseback coming from the Gap. After a parley—for the horses had tramped around long enough for one—the wagon had turned completely from the trail and struck out across the desert, north; the two horsemen, or one with a led horse, had started back to the Gap.

All of this de Spain gathered without moving his horse outside a circle of thirty feet. What did it mean? Page might have fallen in with cronies from the Gap, abandoned his job, and started for Sleepy Cat, but this was unlikely. He might have encountered enemies, been pointedly advised to keep away from the Gap, and pretended to start for Sleepy Cat, to avoid trouble with them. Deeming the second the more probable conclusion, de Spain, absorbed in his speculations, continued toward the Gap to see whether he could not pick up the trail of Page's rig farther on.

Within a mile a further surprise awaited him. The two horsemen, who had headed for the Gap, after stopping Page, had left the trail, turned to the south, down a small draw, which would screen them from sight, and set out across the desert.

No trail and no habitation lay in the direction they had taken—and it seemed clearer to de Spain that the second horse was a led horse. There was a story in the incident, but his interest lay in following Page's movements, and he spurred swiftly forward to see whether his messenger had resumed the Gap trail and gone on with his mission. He followed his quest almost to the mountains, without recovering any trace of Page's rig. He halted. It was certain now that Page had not gone into the Gap.

Perplexed and annoyed, de Spain, from the high ground on which he sat his horse, cast his eyes far out over the desert. The brilliant sunshine flooded it as far as the eye could reach. He scanned the vast space without detecting a sign of life anywhere, tho none better than he knew that any abundance of it might be there. But his gaze caught something of interest on the farthest horizon, and on this his scrutiny rested a long time. A soft brown curtain rose just above the earth line against the blue sky. Toward the east it died away and toward the west it was cut off by the Superstition peaks.

De Spain, without giving the weather signs much thought, recognized their import, but his mind was filled with his own anxieties and he rode smartly back toward Calabasas, because he was not at ease over the puzzles in the trail. When he reached the depression where the horsemen had, without any apparent reason, turned south, he halted. Should he follow them or turn north to follow Page's wanderings? If Page had been scared away from the Gap, for a time, he probably had no information that de Spain wanted, and de Spain knew his cunning and persistence well enough to be confident he would be back on the Gap road, and within the cover of the mountains, before a storm should overtake him. On the north the brown curtain had risen fast and already enveloped the farthest peaks of the range. Letting his horse stretch its neck, he hesitated a moment longer trying to decide whether to follow the men to the south or the wagon to the north. A woman might have done better. But no good angel was there to guide his decision, and in another moment he was riding rapidly to the south with the even, brown, misty cloud behind him rolling higher into the northern sky.

CHAPTER XXXI

De Spain Rides Alone

He had ridden the trail but a short time when it led him in a wide angle back toward Calabasas, and he found, presently, that the men he was riding after were apparently heading for the stage barns. In the north the rising curtain had darkened. Toward Sleepy Cat the landscape was already obliterated. In the south the sun shone, but the air had grown suddenly cold, and in the sharp drop de Spain realized what was coming. His first thought was of the southern stages, which must be warned, and as he galloped up to the big barn, with this thought in mind he saw, standing in the doorway, Bull Page.

De Spain regarded him with astonishment. "How did you get here?" was his sharp question.

Page grinned. "Got what I after, and c'm' back sooner'n I expected. Half-way over to the Gap, I met Duke and the young gal on horseback, headed for Calabasas. They pulled up. I pulled up. Old Duke looked kind o' ga'nted, and it seemed like Nan was in a considerable hurry to get to Sleepy Cat with him, and he couldn't stand the saddle. Anyway, they was heading for Calabas to get a rig from McAlpin. I knowed McAlpin would never give old Duke a rig, not if he was a-dyin' in the saddle."

"They've got your rig!" cried de Spain.

"The gal asked me if I'd mind accommodatin' 'em," explained Bull deprecatingly, "to save time."

"They headed north!" exclaimed de Spain. The light from the fast changing sky fell copper-colored across his horse and figure. McAlpin, followed by a hostler, appeared at the barn door.

Bull nodded to de Spain. "Said they wanted to get there quick. She fig'ered on savin' a few miles by strikin' the hill trail in. So I takes their horses and lets on I was headin' in for the Gap. When they got out of sight, I turned 'round——"

Even as he spoke, the swift-rolling curtain of mist overhead blotted the sun out of the sky.

De Spain sprang from his saddle with a ringing order to McAlpin. "Get up a fresh saddle-horse!"

"A horse!" cried the startled barn boss, whirling on the hostler. "The strongest legs in the stable, and don't lose a second! Lady Jane; up with her!" he yelled, bellowing his orders into the echoing barn with his hands to his mouth. "Up with her for Mr. de Spain in a second! Marmon! Becker! Lanzon! What are you all doing?" he roared, rushing back with a fusillade of oaths. "Look alive, everybody!"

"Coming!" yelled one voice after another from the depths of the distant stalls.

De Spain ran into the office. Page caught his horse, stripped the rifle from its holster, and hurriedly began uncinching. Hostlers running thru the barn called shrilly back and forth, and de Spain springing up the stairs to his room provided what he wanted for his hurried flight. When he dashed down with coats on his arm the hoofs of Lady Jane were clattering down the long gangway. A stableboy slid from her back on one side as Bull Page threw the saddle across her from the other; hostlers caught at the cinches, while others hurriedly rubbed the legs of the quivering mare. De Spain, his hand on McAlpin's shoulder, was giving his parting injunctions, and the barn boss, head cocked down, and eyes cast furtively on the scattering snowflakes outside, was listening with an attention that recorded indelibly every uttered syllable.

Once only, he interrupted: "Henry, you're ridin' out into this thing alone—don't do it."

"I can't help it," snapped de Spain impatiently.

"Its a man killer."

"I can't help it."

"Bob Scott, if he was here, 'ud never let you do it. I'll ride wi' ye myself, Henry. I worked for your father——"

"You're too old a man, Jim——"

"Henry——"

"Don't talk to me! Do as I tell you!" thundered de Spain.

McAlpin bowed his head.

"Ready!" yelled Page, buckling the rifle holster in place. Still talking, and with McAlpin glued to his elbow, de Spain vaulted into the saddle, caught the lines from Bull's hands, and steadied the Lady as she side-stepped nervously—McAlpin following close and dodging the dancing hoofs as he looked earnestly up to catch the last word. De Spain touched the horse with the lines. She leaped thru the doorway and he raised a backward hand to those behind. Running outside the door, they yelled a chorus of cries after the swift moving horseman and, clustered in an excited group, watched the Lady with a dozen great strides round the Calabasas trail and disappear with her rider into the whirling snow.

She fell at once into an easy reaching step, and de Spain, busy with his reflections, hardly gave thought to what she was doing, and little more to what was going on about him.

No moving figure reflects the impassive more than a horseman of the mountains on a long ride. Tho never so swift-borne, the man, looking neither to the right nor to the left, moving evenly and statue-like against the sky, a part of the wiry beast under him, presents the very picture of indifference to the world around him. The great swift wind spreading over the desert emptied on it snow-laden puffs that whirled and wrapped a cloud of flakes about horse and rider in the symbol of a shroud. De Spain gave no heed to these skirmishing eddies, but he knew what was behind them, and for the wind, he only wished it might keep the snow in the air until he caught sight of Nan.

The even reach of the horse brought him to the point where Nan had changed to the stage wagon. Without a break in her long stride, Lady took the hint of her swerving rider, put her nose into the wind, and headed north. De Spain, alive to the difficulties of his venture, set his hat lower and bent forward to follow the wagon along the sand. With the first of the white flurries passed, he found himself in a snowless pocket, as it were, of the advancing storm. He hoped for nothing from the prospect ahead; but every moment of respite from the blinding whirl was a gain, and with his eyes close on the trail that had carried Nan into danger, he urged the Lady on.

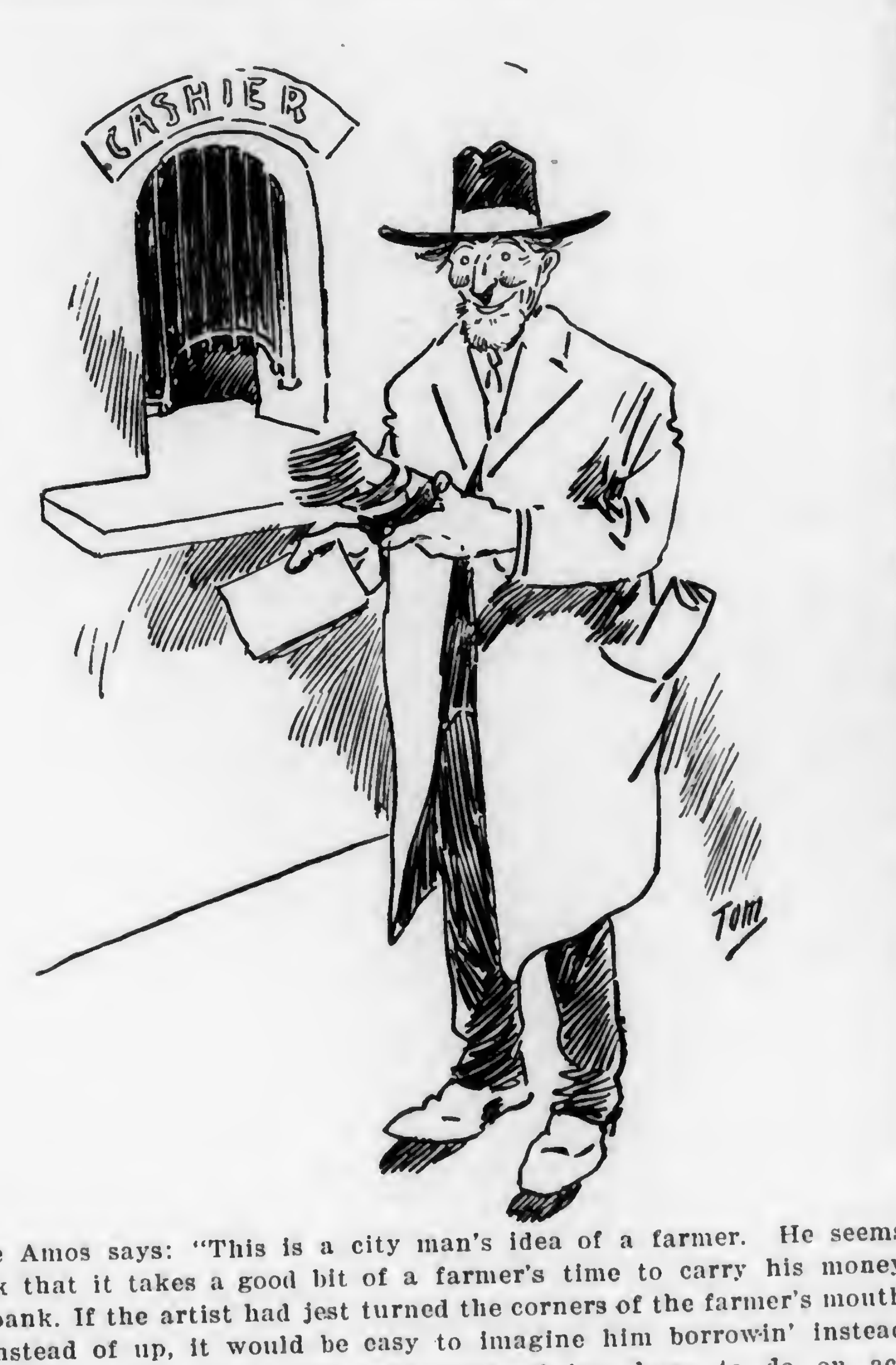
When the snow again closed down about him he calculated from the roughness of the country that he should be within a mile of the road that Nan was trying to reach, from the Gap to Sleepy Cat. But the broken ground straight ahead would prevent her from driving directly to it. He knew she must hold to the right, and her curving track, now becoming difficult to trail, confirmed his conclusion.

A fresh drive of the wind buffeted him as he turned directly north. Only at intervals could be see any trace of the wagon wheels. The driving snow compelled him more than once to dismount and search for the trail. Each time he lost it the effort to regain it was more prolonged. At times he was compelled to ride the desert in wide circles to find the tracks, and this cost time when minutes might mean life. But as long as he could he clung to the struggle to track her exactly. He saw almost where the storm had struck the two wayfarers. Neither, he knew, was insensible to its dangers. What amazed him was that a man like Duke Morgan should be out in it. He found a spot where they had halted and, with a start that checked the beating of his heart, his eyes fell on her footprint not yet obliterated, beside the wagon track.

The sight of it was an electric shock. Throwing himself from his horse, he knelt over it in the storm, oblivious for an instant of everything but that this tracery meant her presence, where he now bent, hardly half an hour before. He swung, after a moment's keen scrutiny, into his saddle, with fresh resolve. Pressed by the rising fury of the wind, the wayfarers had become from this point, de Spain saw too plainly, hardly more than fugitives. Good ground to the left where their hope of safety lay, had been overlooked. Their tracks wandered on the open desert like those who, losing courage, lose their course in the confusion and fear of the impending peril.

And with this increasing uncertainty in their direction vanished de Spain's last hopes of tracking them. The wind swept the desert now as a hurricane sweeps the open sea snatching the fallen snow from the face of the earth as the sea-gale, flattening the face of the waters, rips the foam from the frantic waves to drive it in wild, scudding fragments across them.

De Spain, urging his horse forward, unbuckled his rifle holster,



Uncle Amos says: "This is a city man's idea of a farmer. He seems to think that it takes a good bit of a farmer's time to carry his money to the bank. If the artist had jest turned the corners of the farmer's mouth down instead of up, it would be easy to imagine him borrowin' instead o' depositin'. An' that's jest what lots of 'em have to do on account o' the high price o' everything he buys. Howsumever, we're goin' to hold on. Things is comin' our way an' it won't be long until all good farmers can have a credit in a bank book."

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threw away the scabbard, and holding the weapon up in one hand, fired shot after shot at measured intervals to attract the attention of the two he sought. He exhausted his rifle ammunition without eliciting any answer. The wind drove with a roar against which even a rifle report could hardy carry, and the snow swept down the Sinks in a mad blast. Flakes torn by the fury of the gale were stiffened by the bitter wind into powdered ice that stung horse and rider. Casting away the useless carbine, and pressing his horse to the limit of her strength and endurance, the unyielding pursuer rode in great coiling circles into the storm, to cut in, if possible, ahead of its victims, firing shot upon shot from his revolver, and putting his ear intently against the wind for the faint hope of an answer.

Suddenly the Lady stumbled and, as he cruelly reined her, slid helpless and scrambling along the face of a flat rock. De Spain, leaping from her back, steadied her trembling and looked under foot The mare had struck the rock of the upper lava bed. Drawing his revolver, he fired signal shots from where he stood It could not be far, he knew, from the junction of the two great desert trails—the Calabasas road and the Gap road. He felt sure Nan could not have got much north of this for he had ridden in desperation to get abreast of or beyond her, and if she were south, where, he asked, could she be?

He climbed again into the saddle—the cold was gripping his limbs—and, watching the rocky landmarks narrowly, tried to circle the dead waste of the half-buried flow. With chilled, awkward fingers he filled the revolver again and rode on, discharging it every minute, and listening—hoping against hope for an answer. It was when he had almost completed, as well as he could compute, the wide circuit he had set out on, that a faint shot answered his continuing signals.

With the sound of that shot and those that followed it his courage all came back. But he had yet to trace thru the confusion of the wind and the blinding snow the direction of the answering reports

Hither and thither he rode, this way and that, testing out the location of the slowly repeated shots, and signalling at intervals in return. Slowly and doggedly he kept on, shooting, listening, wheeling, and advancing until, as he raised his revolver to fire it again, a cry close at hand came out of the storm. It was a woman's voice borne on the wind. Riding swiftly to the left, a horse's outline revealed itself at moments in the driving snow ahead.

De Spain cried out, and from behind the furious curtain heard his name, loudly called. He pushed his stumbling horse on. The dim outline of a second horse, the background of a wagon, a storm-beaten man—all this passed his eyes unheeded. They were bent on a girlish figure running toward him as he slid stiffly from the saddle. The next instant Nan was in his arms.

(To be continued.)

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(Continued from page 8.)

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PLANTING FARM LAWNS

There is a saying supposedly very smart in vogue: "I don't know where I am going, but I am on my way." Farm folks nowadays have no time for such aimless wandering. They desire a destination for their travels.

Plan

Whether, then, the problem is one of construction, re-modeling or rational continuous improvement, some definite scheme should be developed and perhaps reduced to paper; either as memoranda, a study or a scaled drawing.

Purpose

The first thing to consider in the plan is just what is being attempted. It may be that a windbreak or a screen is needed; or perhaps the framing of a particularly fine view is wanted. Backgrounds and flankings make much difference in the appearance of the farmstead. Shade is desirable. "Plenty of shade" is a cherished advertising phrase and is supposed to add to the value of a property far out of proportion to the cost and trouble involved. Some old places, however, would have sufficient shade if some of the crowding trees were removed, permitting some sunlight and more air and better grass to be enjoyed.

Foundation planting softens the lines of buildings as do vines and climbers. Border plantings are deservedly popular. These irregular plantings are varied both in ground line and skyline. Much latitude of choice of material is allowed and changes may be readily made in the interest of variety. They are easily cared for.

Expression

What pleases, may well be admired and emulated; the eccentric for the mere sake of novelty should be avoided; but in home planting as in home furnishing, there should not be slavish copying but a desire to express the sentiments of the family. Of course, there must be character to be expressed. A quiet dignity without ostentation; the spirit of plenty without extravagance; cheerful beauty without gaudiness; these should be the grace of the countryside.

Procedure

During the winter consider where to plant a windbreak next spring. Be watchful for pleasing outlooks that may be developed by judicious thinning out or emphasized by framing in. Note where some rich evergreens or cheerful berry-bearers will be welcome. Notice how some planting around the buildings might relieve stiffness.

While the leaves are off the trees, carefully observe the homestead as it is approached and decide how the picture may be improved, either by cutting out or moving or planting something. Even tho little be done at a time, much improvement may result. Constant observation will make for steady progress and intelligent satisfaction.—Frank M. Bartram.

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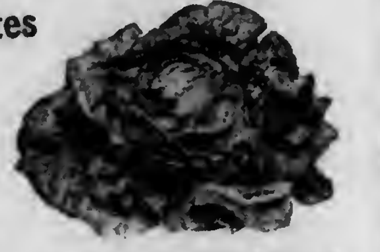
"John Baer" Tomato
The Earliest and Best Tomato on Earth]
Shipping Fruit in 30 Days

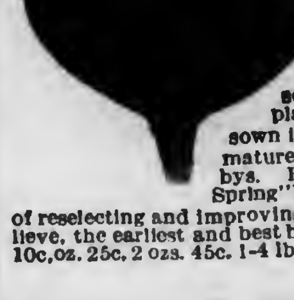


Big Boston Lettuce
Bolgiano's Famous Stock

"John Baer" Tomato produces perfect, solid, high-grown, beautiful, brilliant Red Shipping Tomatoes in 30 days from large, strong, well matured plants grown in veneer band with roots undisturbed. "John Baer" tomato produces an enormous crop of tomatoes, from 50 to 100 fruit to each plant. Entirely free from core. Ripens evenly right up to the stem. No mis-shapen fruit. Mild delicious flavor. Almost seedless. A perfect shipper. Growers everywhere marvel at its extreme earliness, wonderful prolificness and the beauty of its fruit. Pkt. 10c & 25c, 1-4 oz. 50c, 1-2 oz. 90c, 1 oz. $1.50, 2 ozs. $2.50, 1-4 lb. $4.50, 1-2 lb. $8.00, lb. $15 Postpaid.
We offer Veneer Bands 50c per 100

For years we have reselected and improved our stock of this Wonderful Lettuce, until we believe we now have the finest stock in the World. Big Boston Lettuce is the most valuable lettuce in cultivation. Its excellent qualities have made it the most popular and most extensively used lettuce in the world. It produces grand, large, buttery, yellow heads, filled with sweet, crisp, tender, beautifully blanched leaves. Bolgiano's Big Boston Lettuce stands long without going to seed, has few outer leaves and makes a large attractive plant. Our stock is especially adapted to cool, open ground culture. Pkt. 10c, oz. 15c, 2 ozs. 25c, 1-4 lb. 35c, 1-2 lb. 60c, lb. $1.00 Postpaid

Bolgiano's New "Early Spring" Beet
The first Beet in Market



Most perfect in shape and beautiful deep red color. It is earlier in maturing than Crosby's Egyptian and is of a much finer grain. Has a very small tap root also top not being as large as Crosby's Egyptian. Even in maturing. Can be sown under glass & transplanted outdoors or sown in the open field & will mature much earlier than Crosbys. Bolgiano's New "Early Spring" Beet is the result of years of reselecting and improving, resulting in, we believe, the earliest and best beet on the market. Pkt. 10c, oz. 25c, 2 ozs. 45c, 1-4 lb. 75c, lb. $2.50 Postpaid.

Bolgiano's "Early Fortune" White Spine Cucumber

The Ideal Cucumber for Home or Market

The Earliest and by far the best Rich Dark Green White Spine Cucumber. The greatest producer of all varieties and at all stages of its growth, it is a model in shape, being the most handsome and attractive cucumber ever grown. The quality is superb, flavor delicate, refreshing and delightful, entirely free from bitterness, fine grained, flesh compact, exceedingly crisp and brittle. Pkt. 10c, oz. 15c, 2 ozs. 25c, 1-4 lb. 45c, 1-2 lb. 85c, lb. $1.50 Postpaid

Special Offer To those not familiar with the superiority of Bolgiano's "Big Crop" Seeds, we will send for a trial, one large 10c package of each of the above four Bolgiano's Specials for 25c postpaid if you will mention The Pennsylvania Farmer.

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Thousands of farmers have increased their yields per acre with consequent bigger incomes from all fields sown with this drill. And you can do the same. The New Climax Grain and Clover Drill sows more rows to the acre but fewer seeds to the row, resulting in stronger plants and a good seed saving on account of even distribution.

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Don't fail to get our prices and all the special details about this drill. It is equipped with complete outfit for all kinds of grains and grass seeds, with or without fertilizer attachment. Sows seeds and fertilizer in rows only 4 inches apart. For Wheat, Oats, Barley, Rye, Soy Beans, Alfalfa, Red Mammoth, or Japanese Clover, Timothy, Orchard Grass, Cow Peas, etc. Sows less seed to the furrow but drills more furrows. Only two horses required. This drill will sow clover or any other small seed in the growing wheat without injury to the wheat. And because of a strong lifting spring which aids the lever, even a boy can easily and quickly raise the discs out of the ground when required.

Costs no more to sow with this drill than with any other. It means bigger crops and, therefore, more money without any additional labor.

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White Blossoms; the greatest money-making crop of today. Big money for the farmers who grow it. Builds up land rapidly and produces heavy, money-making crops while doing it. Excellent pasture and hay; innoculates land for alfalfa. Easy to start; grows on all soils. Our seed all best scarified hulled, high-germinating and tested. Quality guaranteed. Write today for our big, Profit-Sharing Seed Guide, circular, free samples. Address

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Farmers Obtained Record Prices for Produce last year. Should do so Again this year.

Farms should be run to Capacity and Proper Fertilizers Liberally used.

Use MAPES MANURES

Their Standard Absolutely Maintained in Field and State Experiment Stations.

All during the war the Mapes Manures were made and are being made precisely as in the past, under pledge to supply the Phosphoric Acid from Animal Bone and Guano, made available without acidity, no Rock or Acid Phosphate used. While they do not contain as much Potash as formerly, they do hold enough to greatly aid the present crop to more perfect growth and development, and thus insure the balance of its necessary Potash being taken from latent soil supplies.

Our splendid record with the State Experiment Stations of 1916 again maintained.

We give below the average of all the Station Analyses which we have received of our prominent brands for 1917.

1917 ANALYSES

	Ammonia	Phos. Acid Available	Total	Potash
MAPES POTATO				
Average of six State Station Analyses..	4.95	7.74	9.08	1.09
Guarantee	4.50	8.	8.	1.
GENERAL SPECIAL				
Average of four State Station Analyses.	7.29	6.22	9.04	1.64
Guarantee	7.	6.	8.	1.
TOBACCO STARTER IMPROVED				
Average of four State Station Analyses.	5.23	6.14	8.33	1.12
Guarantee	5.	6.	8.	1.
CORN MANURE				
Average of four State Station Analyses.	3.24	7.67	10.74	1.07
Guarantee	3.	8.	10.	1.
TOP DRESSER, FULL STRENGTH				
Average of three State Station Analyses.	12.12	6.27	8.36	2.25
Guarantee	12.	5.	8.	1.
TOBACCO MANURE				
Average of two State Station Analyses.	10.24	6.34	8.45	1.82
Guarantee	10.	....	8.	1.

We are equally proud of the results in the field. They have been most excellent, fully substantiating our theory as to the advisability of supplying at least limited Potash to aid the crop to make a start, and so enable it to avail itself to the utmost of the latent supplies of Potash in the soil.

Order at once. Under this year's conditions it is the only way to be sure of having your Fertilizer when you want it.

The Mapes Formula & Peruvian Guano Co.

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The most modern application of gasoline power to farm work is found in this simple practical, inexpensive little tractor.

In cultivating, it goes astride of onions, carrots, beets and other crops grown in narrow rows, cultivating one or three rows at a time.

It will take the place of a horse or mule in cultivating crops grown in wide rows, and in plowing and harrowing.

Cultivates closer, faster and better than is possible with hand wheel hoes or one horse cultivators.

No pushing—no pulling. So easy to guide and control that a boy or a woman with a Beeman can do the work of three men with hand wheel hoes.

Write today for Catalog P.

Cultivates any crop that grows in rows—

Pulls small plow or harrow—

Develops 4 h. p. on the belt—

Does all the small belt power work on the farm—

Goes from job to job on its own power.

Consolidated Gas & Gasoline Engine Co.

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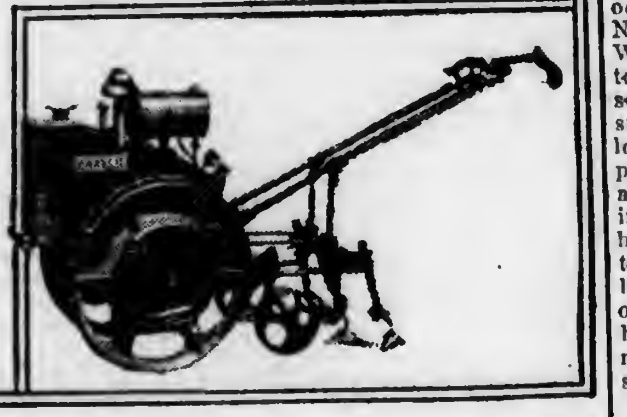

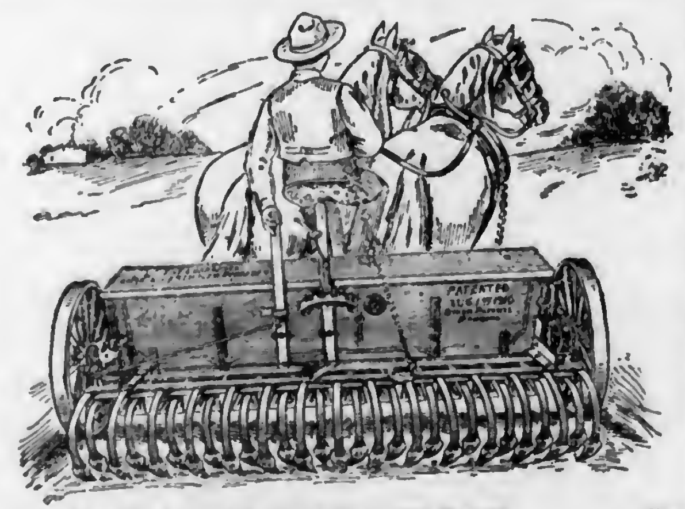

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 11, 1918.

While the general range of price in the potato market is showing very little if any change, and no decisive trend, the indications would seem to point towards an easier market. The receipts are not heavy but at the same time are ample for all demands and with the more moderate weather prevailing the receivers anticipate heavier supplies. Strictly fancy Pennsylvania potatoes are still selling around $2.75 to $2.85 per cwt., but only in a small way. The bulk of the sales are being made at $2.40 to $2.60 per cwt. with some poor stock as low as $2.20. New York State stock has sold generally from $2.20 to $2.40, with some strictly fancy up to $2.50. The nearby Jersey stock hauled in by the farmers is still commanding 80 to 90 cents per ⅝-bushel basket.

Sweet potatoes are in somewhat more liberal supply, but the demand is active and prices rule firm at the advance quoted in these columns last week. Prime New Jerseys are selling at $1.40 to $1.50 per ⅝-bushel basket with medium drawing $1.10 to $1.25 and seconds from 85 to 90 cents. Southern sweets are moving promptly at $2 to $2.25 per bushel hamper for prime, with No. 2's selling generally at $1 to $1.25, except some poor stock which sold at low as 75 cents.

Vegetables

Dried beans are ruling about the same as reported last week. A moderate amount is being moved every day and the market has a generally firm tone. The fact that the government has taken so many of the imported beans has had a rather stimulating effect. Marrow beans are selling at $15.50 to $15.75 per cwt; pea and medium at $13 to $13.50 and red kidney $13 to $13.75. Green beans while still very scarce are increasing in supply and extremely high prices prevailing last week are no longer being obtained, as best are now selling at $7 per hamper, with poor and ordinary from $3 to $4. Brussel sprouts are more plentiful and lower, ranging from 18 to 24 cents per quart. New beets are in light supply and drawing from $2 to $3 per box, as to quality. Old beets continue in light supply and rule firm and active at $3.50 per barrel. Carrots are unchanged and bringing $2.75 to $3.25. Parsnips while still far from plentiful, are in more liberal supply than last week and prices are about 50 cents a barrel lower. Sales are being made generally at $3.50 to $3.75 with an occasional sale of strictly fancy up to $4. White turnips are scarce and active at $3 to $3.50 per barrel.

Old cabbage is in very light supply and the market is very firm, active and higher with fancy green Danish selling from $65 to $70 per ton. New cabbage is also in light supply and higher with fancy stock moving quickly at $1.75 to $2 per hamper. Cauliflower is in quite liberal supply from California and selling from $1.25 to $1.50 per crate. Boxes from Florida are drawing from $1.75 to $2.25. Hot house cucumbers are more plentiful and the market is easier with prices ranging from $1 to $1.50 per dozen. Pennsylvania celery is in fair supply and meeting an active demand at 10 to 15 cents per bunch. New York State celery is selling from $1 to $3.50 per crate, as to quality, with very little good enough to reach the outside prices. California celery remained steady at $3 to $4.50 per crate. Florida celery is making its appearance on the market, two cars having reached here so far this season. The first sold at $3 to $3.25, and the second, $2.50 to $2.75. Horse radish continues in light supply and firm and active at $7 to $8.50 per barrel.

The lettuce is showing quite a little improvement with fancy stock, selling from $1.50 to $1.75. Some poor stock is still arriving and sells as low as 75 cents to $1 per hamper. Fancy Pennsylvania hot house mushrooms are a little more plentiful and prices somewhat lower, ranging from 50 to 55 cents per pound. Onions are moving very slowly and the market is very dull and weak. Most sales of yellow onions are being made at $1.75 to $2 per cwt., with an occasional extra fancy lot slightly higher. No. 2's are being sold as low as $1 per cwt. White onions are moving slowly at $1.25 to $1.75. A few peas of ordinary quality sold from $3 to $5 per bushel hamper, but strictly fancy would sell much higher. Parsley remains practically unchanged. Curley parsley is selling at $8 to $10 per barrel and plain at $5 to $6. Shallots continue in light supply and readily bring $5 to $6 per barrel. Peppers are firm when fancy at $6 to $7 per crate. Hot house radishes are bringing $2 to $4 per 100 bunches. A car of Texas spinach sold at $2.50 per bushel basket. Rutabagas are in light supply, the market firm and active on small and medium size stock at $2 to $2.25 per cwt.

Most of the tomatoes that have been on the market the past week have been extremely poor, being spotted and green and hard to move at any price. Strictly fancy tomatoes are selling up to $4 to $4.50 per crate, while some spotted and green and practically worthless sold as low as 50 cents a crate. Hot house tomatoes continue scarce and firm at 25 to 35 cents per pound. Watercress ranges from $1 to $3 per 100 bunches as to quality.

Fruits

Altho the receipts and offerings of apples have been quite liberal this week there has been a good active demand on strictly fancy fruit, with the market ruling firm, active and higher. Prices are ranging about as follows: Baldwins, $3.50 to $5.50; Ben Davis, $3.25 to $4.75; Ganos, $3.50 to $4.50; Greenings, $4 to $6.50; Kings, $4 to $6.50; Hubbardsons, $3.50 to $5.50; Rome Beauty, $5 to $6; Winesaps, $3.50 to $6. There are quite a few common, ordinary and frozen apples arriving on the market which have to be sold accordingly, ranging from $2.50 to $3 as to condition. Box apples are also ruling very firm and active, and higher. Rome Beauty is selling from $2 to $2.50; Spitz, $2 to $2.50; Stayman Winesaps, $2 to $2.50; Delicious, $2.50 to $3; Black Bens, $2 to $2.25; Winesaps, $2 to $2.50.

Only a limited number of pears are arriving on the market. These are of the Keiffer variety and selling from $1.50 to $2.50 as to quality. Strawberries are much more plentiful and the market is much lower than last week. While a few berries have sold up to 45 per quart the general market ranges from 35 to 40 cents. Some showing very poor quality sold as low as 20 to 25 cents.

Poultry

Supplies of practically all kinds of dressed poultry have been very light and the market continues practically unchanged, ruling very strong and active. Turkeys are selling quickly at 38 to 40 cents per ponnd. Large heavy fowls are in strong demand at 33 to 35 cents, with small size 30 to 32 cents. Fancy soft meated are moving out quickly at 30 to 34 cents per pound. Western boilers are drawing from 35 to 42 cents per pound with nearby 42 to 45 cents. There is a good demand for old roosters at 23 to 24 cents. Ducks also meet a good inquiry at 23 to to 30 cents.

Live poultry is also ruling firm, active and higher with fancy heavy fowl selling from 30 to 35 cents. Spring chickens are active at 30 to 33 cents. Old roosters are selling at 22 to 24 cents. Ducks are quite a little higher, selling from 30 to 34 cents. In the absence of any important supplies of live turkeys and live geese, quotations on these 30 cents.

Eggs

Altho receipts of eggs are quite a little heavier, there has been sufficient demand to absorb the offerings daily and the market has been ruling about steady. With moderate weather, however, a still greater increase in supplies is looked for at most any time, and it is not to be expected that the present high prices will be maintained. At this writing nearby firsts are selling at 56 cents per dozen with current receipts at 55 cents. Western fresh eggs are bringing from 54 to 56 cents, while southern eggs are selling at about 52 to 58 cents. Fancy selected, graded and candled eggs are being jobbed out at around 60 to 63 cents per dozen.

YORK PRODUCE MARKET

York, Pa., Feb. 11, 1918.

There have been few changes in the quotations of produce the past week. Eggs dropped several cents. Other produce is steady, except in those lines which are nearly exhausted. In these articles the price naturally advances. The first movement of potatoes has taken place this week. One car load was sold at $1.10 f.o.b. track here. Still the farmers are hesitating as they believe the severe freezing may cause an advance. Also the increased use of potatoes as flour may raise the consumption. It is largely a gamble as to whether they will receive more later, but the fact that at points not more than 50 miles distant the price ranges from 20 to 60 cents a bushel higher adds to their inclination to hold.

Eggs.—48@56c per dozen.

Butter.—Country, 48@52c lb; separator, 50@55c lb. Milk, 10c quart.

Poultry.—20@25c lb; dressed, 75c@$1.50 each.

Vegetables.—Potatoes, 10@18c ½ pk; 80c @$1.10 bushel. Lettuce, 5@15c head. Cabbage, 5@12c head. Beets, 5c bunch. Radishes, 6@7c bunch. Onions, 10@12c box; 25c ½ pk. Lima beans, 35c quart. Soup beans, 12 @18c quart. Celery, 5@10c a stalk, turnips, 20@25c ½ pk. Corn meal, 10@12c quart.

Fruit.—Apples, 10@40c ½ pk. Pears, 10c box; 15@20c ½ pk.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c; back-bone, 25@30c lb; ribs, 30@32c lb; tenderloin, 40@48c lb; steak, 34@38c lb; pudding, 24@28c lb; cured hams, 40@42c lb; lard, 26@34c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 90c; rye, $1.75; bran, $2.50 cwt; middlings, $2.50@3 per cwt.

Wholesale Grain Market.—Wheat, $2.08; corn, $1.60; oats, 72c; rye, $1.60; bran, $45 to 48 ton; middlings, $50@57 ton.

LANCASTER PRODUCE

Lancaster, Pa., Feb. 11, 1918.

There was only a light demand for potatoes on the market on Saturday morning and prices ranged between $1.40 and $1.50 per bushel. The market was well filled with farmers but the offerings of goods were light, and so was the demand. Eggs and butter, on the other hand, were plentiful and met a good, steady sale. The prices were not changed.

Butter and Eggs.—Creamery butter, 55@58c per lb; country butter, 55c; fresh eggs, 53@55c dozen; storage eggs, 45c.

Poultry.—Dressed old chickens, $1.25@1.75; young dressed chickens, $1@1.25; live chickens, $1.75@2 per pair; old live chickens, 35c lb.

Vegetables and Fruits.—Tomatoes, 20c per box; lima beans, 18c per pint; lettuce, 5@12c head; sweet potatoes, 25c ½ pk; potatoes, $1.10@1.50 per bushel; do., 12@25c ½ pk; turnips, 18c ½ pk; grapes, 20c lb; apples, 20@25c ½ pk.

Grain Market. — Wheat, $2.05 per bu; chicken wheat, $2; ear corn, $1.70; corn, $1.75; rye, $1.70. Timothy hay, $26@27 per ton; mixed hay, $26@27; wheat straw, $17@18.

NEW YORK PRODUCE

New York City, Feb. 11, 1918.

Little change in the prices of butter. Stock is accumulating. Cheese market opens quiet but firm. Trading in eggs is more active and receipts more liberal. Little change in potato prices.

Butter.—Creamery, extras, (92 score), per pound, 51½c; higher score, 52@52½c; thirds to firsts, 41@51c; state dairy, 42@51c; ladles, 37@40c.

Cheese.—Colored specials, 26¼@26½c. Daisies, 26¾c.

Eggs.—Fresh gathered extras, 58c; extra firsts, 57½c; nearby white, fine to fancy, 55@58c; ordinary to good, 55@58c; browns, 56@60c.

Vegetables and Greens. — Beets, per 100 bunches, $3@7. Onions, per 100-lb. bag, $2

Potatoes, Jersey, $2.25@2.75 per 100 tate and western, $2.42@2.80 100 lbs. ts, $2@2.50 per barrel. pples.—McIntosh, $4@6.50; York Im- l, $3.75@5.50; Twenty Ounce, $4@ King, $4@5.50; Baldwin, $3.50@5.25.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 11, 1918.

ef Cattle.—The market for steers and was slightly lower under a light de- d and moderate but ample offerings. es of fine quality ruled firm, with de- d fair, but much of the supply was of the er grades, which were quiet and irregu- in value.

eers, best, $13.50; fair to good, $12@ common, $11@11.50; bulls, $7.75@9.50; fancy fat, 10@10½c; calves, excep- l lots, $17.50@18; good to choice, $15 ; medium, $13@14; common, $10@12; essee and southern, $8@16.

eep and Lambs.—There was a fair de- for sheep, prices of which ruled steady r moderate offerings. Lambs were quiet showed little change.

heep.—Wethers, extra, $13.50@14; good choice, $11@12.50; medium, $9@10.50; mon, $7@8.50; ewes, heavy, fat, $12@ Lambs.—Choice, $18.50@18.75; do. me- , $17.50@18; inferior, $15@16.50.

ogs.—The market ruled firm under light ings and a fairly active demand. There some complaint of stock being delayed transit. Quotations for best western, $19.

ity Dressed Stock.—Transportation dif- ties were still holding up shipments in e instances, but demand was irregular and es of steers and heifers were slightly r. Hogs also ruled a shade easier.

teers, 16@21c; heifers, 15@19c; cows, 18c; calves, 24@25½c; southern and yards, 18@20c; country dressed, 21@ ; sheep, 23@24c; do., extra, 25c; lambs, 28c; extra, 30c; hogs, 25c.

NEW YORK LIVE STOCK

New York City, Feb. 11, 1918.

Beeves.—Receipts, 3,580; irregular; steers, 0@13.50; bulls, $6.50@11; cows, $5@ 0; tail ends, $4.50@9.50.

Calves.—Receipts, 840; weak; veals, $14 18; culls, $11@13.50; westerns, $8@ 0; barnyard calves, $7@8.50.

Sheep and Lambs.—Receipts, 4,280; sheep, minal; lambs, dull, at $17.25@18.50.

Hogs.—Receipts, 6,740; steady; medium to heavy, $17@17.25; roughs, $16.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 11, 1918.

Cattle slow; supply, 80 carloads; prime, 2.50@13.

Sheep steady; supply very light; prime ethers, $13@14; culls and commons, $6@ lambs, $14@18; veal calves, $15.50@16.

Hogs lower; receipts, 50 double decks; me heavies, $16.50@16.60; mediums and vy yorkers, $16.85@16.90; light yorkers, 6.65@16.75; pigs, $16.25@16.50; roughs, 5@15.50.

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 11, 1918.

Cattle.—Receipts, 2,500; slow; prime eers, $13.50@13.75; shipping steers, $11@ 50; butchers, $10.50@12.50; yearlings, 1.50@13; heifers, $8@11.25; cows, $4.50 10.50; bulls, $6.50@11.50; stockers and eders, $6.50@9.50. Fresh cows and spring- , $65@140. Calves, receipts, 1,500; easier, @16.50.

Hogs.—Receipts, 11,200; easier, heavy $17 17.10; mixed and yorkers, $17; light york- $16.25@16.50; pigs, $16@16.25; roughs, 5.50@15.60; stags, $14@14.50.

Sheep and Lambs.—Receipts, 5,000; light, ady, others easier. Lambs, $14@18.50; rlings, $13@16.50; wethers, $14@14.50; es, $7@13.50; mixed sheep, $13.50@14.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Feb. 11, 1918.

Baled Hay and Straw.—Receipts, 120 tons f hay and 2 cars of straw. There was very ttle hay offering, and values were largely ominal in the absence of important trans- ctions. Straw ruled firm.

No. 1 large bales, nominal; No. 1 small ales, nominal; No. 2, $29@30; No. 3, $26 27; sample, $21@23; no grade, $17@19. lover-mixed hay, light mixed, $29@30; No. do., $27@28.50; No. 2 do., $24.50@25.50.

Straw.—No. 1 straight rye, $19@19.50; . 2 do., $18@18.50; No. 1 tangled rye, 16.50@17; No. 2 do., $15.50@16; No. 1 heat straw, $15.50@16; No. 2 do., $14.50@ ; No. 1 oat straw, $15.50@16; No. 2 do., 14.50@15.

Note.—A considerable proportion of the re- ipts of hay coming into this market is for port, and it is hard to determine with any gree of accuracy the total receipts for the al trade.

Bran.—Supplies were small and the mar- t was nominal.

Wheat.—No. 2 red, $2.24.

Oats.—No. 2 white, 99½c@$1.00½.

NEW YORK HAY AND GRAIN

New York City, Feb. 11, 1918.

Feed.—No offerings were reported in the arket, either for spot or future delivery om the mills, while there was also nothing r sale in transit from second hands. There understood to be a good demand from cer- in quarters, but the question of delivery sulting from the railroad congestion will ot allow important new trades. The mills re working hard trying to fill contract ders, and consumers here are receiving only oderate supplies. City mills are trying to fill he demand, but the moderate receipts also re- ult in a limited output.

All spot prices have been withdrawn.

Hay and Straw.—There is no further hange in the market today. Hardly any- hing offered at 33d street, and the few cars nloaded from day to day are mostly spoken r on arrival. At B. E. D. T. shed market also doing better with light offerings, tho ices are still averaging somewhat under 33d reet. At Brooklyn and uptown Manhattan ck delivery stations offerings are more than ample, and sales are being forced without much regard to price in the effort to move stock and avoid demurrage charges. Rye straw quiet and about steady.

Hay.—No. 1 large or small bales, $37@39; No. 2, $33@37; light clover, mixed, $31@36. Rye straw, $20@22 per ton.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Feb. 11, 1918.

Butter.—The usual Saturday quietude prevailed in this market, but receipts of solid-packed creamery, as well as of prints, were light and prices were firmly maintained.

Western, fresh solid-packed creamery extra, 52c; higher-scoring goods, 53@54c; extra firsts, 49@50c; firsts, 47@48c; seconds, 45@46c; sweet creamery, extra, 53c; under grades, 50@52c; nearby prints, fancy, 56c; do., average extra, 53@55c; firsts, 48@50c; seconds, 45@47c; special brands jobbing at 57@59c.

Cheese.—The market ruled very firm, with a fair demand.

New York, full cream, fancy June, 26½@27c; specials higher; do., September made, 26c; do., fair to good, 23@25c.

NEW YORK MILK MARKET

New York City, Feb. 11, 1918.

The irregularity of trains has seriously interferred with the proper delivery of milk and made it difficult to estimate the condition of the market. The delay in the arrival of trains, sometimes amounting to twelve or fifteen hours, was due to the extreme cold and the snow. It is thought that under normal transportation conditions the supply would show a considerable surplus.

Ellis A. Bates, an assemblyman from New York City, has introduced into the legislature at Albany, a bill providing for the establishment of a department of milk supply for this city. It is proposed that it shall be headed by a commissioner to be appointed by the mayor and receive a salary of $5,000. There would be three deputies. The chief function of the department would be the purchase of milk and its sale at cost, the city being divided into zones for conveniences in delivery. The bill provides that no milk or milk products may be sold in the city except thru this department.

The Milk Commission rates for February to the producer of Grade B in the first district are $3.34 a hundred for 3 percent milk; $3.58, or approximately 7.6 cents a quart, for 3.6 percent; and $3.74 for 4 percent milk.

Receipts of milk and cream in 40-quart cans for the week ending February 9 were as follows:

Railroad	Milk	Cream
Erie	38,790	2,145
Susquehanna	5,910	20
West Shore	9,390	835
Lackawanna	55,640	1,010
N. Y. Central (long haul).	99,763	1,412
Ontario	34,142	1,580
Lehigh Valley	43,242	535
New Haven	4,725	10
Pennsylvania	9,165	175
Other sources	5,750	160
Totals	306,517	7,892
Same week last year	332,768	9,125

WOOL TRADE REVIEW

The Boston "Commercial Bulletin" of February 9 says:

"The wool market has passed thru another dull week, altho there was heavy trading. Prices were firm on all good wools but short scoured Capes were easier. The manufacturers are finding a very good call for civilian cloth altho the Government is not exhibiting any great keenness to place new orders as yet."

Ohio and Pennsylvania fleeces: Delaine washed 83@85c; delaine unwashed, 75@76c; ½-blood combing, 77@78c; ⅜-blood combing, 77@78c.

Michigan and New York fleeces: Fine unwashed, 63@64c; delaine unwashed, 73c; ½-blood unwashed, 75@77c; ⅜-blood unwashed 76@77c.

Wisconsin, Missouri and average New England: ½-blood, 70@73c; ⅜-blood, 75@76c; ¼-blood, 74@75c.

Virginia Kentucky and similar ½-blood unwashed, 77@78c; ⅜-blood unwashed, 78@79c.

GRASS SEED MARKET

Toledo, O., Feb. 11, 1918.

Cloverseed.—Prime, cash, old, $20.45; new, $20.70; February, $20.70; March, $19.95.

Alsike.—Prime, cash, old, $4; new, $4.10; March, $4.15.

TOBACCO MARKET

Altho climatic conditions were greatly improved, the general situation in tobacco localities had by no means recovered from the staggering blow of two months of continuous and unusually severe winter weather. The roads were still covered with ice, layer upon layer, each indicating some particular snow and sleet storm. However, tobacco growers and buyers in common with others were enabled to get a little farther away from home and it will not be long until normal conditions will be re-established all along the line. Considerable inquiry was heard for the small unsold residue of the 1917 crop and it will soon be eagerly sought. No sales were reported but it is surely worth as much or more than at any past time. It is probable that offerings of fair to good quality will be salable at around $30 per cwt. Stripping is not well advanced for the time of year, there being even yet a singular surplus of moisture in stems of leaves. Buyers urged growers to defer stripping until tobacco is in proper condition as wet stems may mean unsatisfactory deliveries. Manufacturers were somewhat pessimistic with reference to the outlook, the high cost of tobacco and other materials on the one hand and the necessary increase in selling prices on the other having placed them between two fires, neither of which is quite comfortable. An event of the week was the sale to a New York house of some 1,200 cases of Wisconsin tobacco at the record-making price of $45 per cwt.—H. E. Tweed, Feb. 11.

FRUIT KIL-TONE Would Have Prevented This

Green Cross **Fruit Kli-tone** is a very effective combined insecticide and fungicide for the control of the codling moth, sooty blotch, fly-specks and bitter rot, etc. It is used by many of the most successful orchardists and fruit growers. It will not clog the spray nozzles as it is smooth and free from grit. It adheres strongly to the leaf-surface without closing up the active parts.

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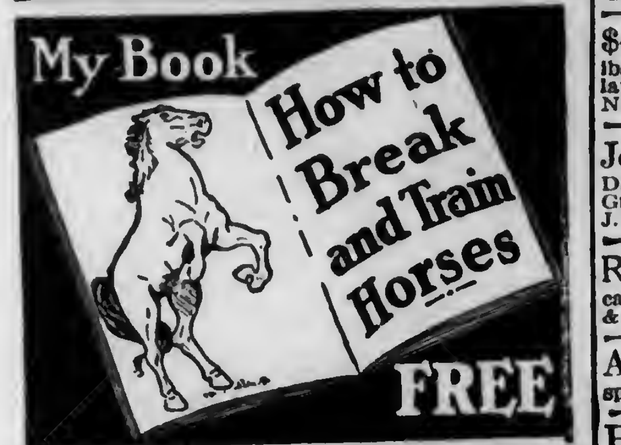
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25 head of Registered Jersey Cows, Heifers and 2 bulls. Many are daughters of R. of M. dams, some fresh, others close springers.

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Who is a son of King Segis out of a 30-lb. granddaughter of the noted foundation cow Prilly. We have 65 of his young daughters born at Winterthur, the first of which will freshen in 1918:

No. 1—Born October 26, 1917. He is a splendid individual, about even in color. His dam is a large, typy heifer of great conformation and recently made 22.80-lbs. butter, 425-lbs. milk, (7 days), 97.90-lbs. butter, 1741.7 lbs. milk (30 days). She is on yearly test.

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This youngster traces to King Segis 4 times.

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Full particulars including pedigrees and photographs will be furnished on request to

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$400 will purchase three finely bred Registered Aberdeen Angus heifer calves, weight 400 to 500 lbs. each and a 14 mo. reg. Angus bull by Black Woodlawn, Sire of Champion and Prince It. 50006.
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Jersey Bull ready for service. Dam's record over 500 lbs. butter in 1 year, Sire's Dam 22 lbs. in 7 days, Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us.
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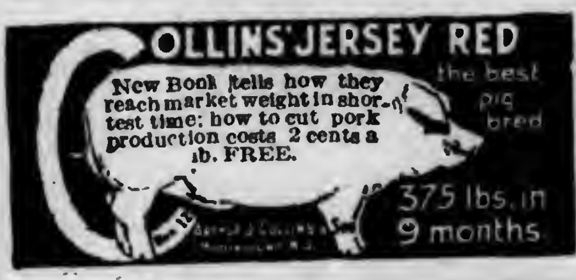

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NEW BULLETINS

The Community Fair.—Farmers' Bulletin, No. 870, published by the U. S. Department of Agriculture, Washington, D. C. Illustrated. This bulletin treats in a helpful way of the organization, exhibits, judging, premiums, expenses, etc., and urges the holding of community fairs as a means of developing an interest in the community as well as in agriculture.

Raspberry Culture.—Farmers' Bulletin, No. 887, published by the U. S. Department of Agriculture, Washington, D. C. Forty-four pages, illustrated. This bulletin is a concise but complete treatise on the culture of raspberries, discussing the different types, location of plantation, the preparation of land, planting, tillage, pruning, yields, diseases, etc.

Backyard Poultry Keeping.—Farmers' Bulletin, No. 889, published by the U. S. Department of Agriculture, Washington, D. C. Illustrated; 22 pages. This bulletin gives information and instructions to the beginner in poultry keeping, or for those who wish to enter it in a small way.

Farm Sources of Fertility.—Bulletin No. 8, published by the New Jersey Department of Agriculture, Trenton, N. J. This timely bulletin treats of organic matter, clovers, grass sods, stable manures, and uses of stable manures. This is a reprint from "Crops and Methods for Soil Improvement."

Human Food from an Acre of Farm Products.—In these days when the problem of producing the greatest possible amount of human nutrition with the means available, this bulletin, No. 877, by the U. S. Department of Agriculture is both interesting and valuable. Tables are presented giving the food value of different products, and also the amount from an acre of ground. In addition, the comparative value of the different meat-producing animals when fed upon an acre of vegetable growth.

NEW BOOK

Rural Arithmetic by Augustus O. Thomas, Ph.D., State Superintendent of Public Instruction for Nebraska. Published by American Book Company, New York. Contains 288 pages and is well illustrated. Price thru Pennsylvania Farmer, 68 cents.

The author has prepared this book with the idea that the home environment provides plenty of material for building the educational structure, and has used the well-known objects and everyday work of the farm as the basis of the problems. The country child who studies arithmetic from such a book will not only appreciate rural life better, but he will make a more efficient farmer.

FARM LOAN FRAUD WARNING

The Federal Farm Loan Board calls attention to the fact that one man has been advertising his services in the establishment of local farm loan banks for a stated price. Help from "advisers" is not needed. The law specifies that no money can be spent in "promotion" and the Federal Board would not charter organizations thus formed. For full information on the formation of the necessary local association address the Federal Farm Loan Board, Treasury Department, Washington, D. C. Beware of anyone wanting to sell his services in the formation of such organizations.

COUNTY NOTES

Lancaster Co., Pa., (S.E.) Jan. 28.—This section of the state is snowbound with the heaviest fall of snow known in years. All traffic is at a standstill. Many of the public roads are impassable. Trolley cars are tied up in snow drifts and steam trains are many hours late. Farmers are putting in the time stripping tobacco. Quite a few from this section attended the state meetings at Harrisburg. Wheat sells at $2.15 bu; corn, $1.70; oats, 65c; fresh cows, $80 to $150; fat hogs, $23 per cwt. dressed. Milk, $3.30 per cwt; butter, 52c; eggs, 66 cents doz. Bran costs $47 ton; white middlings, $55 ton; cottonseed meal, $61 ton. Farm help will be very scarce this spring.—C. B. Snyder.

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From $40 invested
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of quality guaranteed to 1,500 miles. Egg Hatching at low prices. Bar. Rocks, S. C. W. horns, S. C. and R. C. Reds, W. Wyan Buff and W. Orpingtons. Chicklet catalog
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50 BEST PAYING VARIETIES
Hardy Northern raised Chickens, Ducks, Geese, Turkeys. Pure-bred heaviest laying strains. Fowls, Eggs, Incubators, all at low prices. Large new Poultry Book and Breeders' Complete Guide FREE.
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Baby Chicks S. C. White L horns. $12.50 100. Circul
R. S. GOOD, PEACH BOTTOM,

Hampton's Black Leghorns Day old and egg my free circular before you order chicks; tells Black Leghorn is the greatest laying and most table breed on earth. Write today. Also White hora Chicks. A. E. Hampton, Box F, Pittstown,

Eggs--Baby Chicks Single comb white horns, trap-nested heavy laying strain. Cat. on inquiry. Book orders because big demands and shortage of stock. Riv Poultry Farm, F. E. McAllister, Prop., Cortland,

S. C. White Leghorns Tom Barron S of heavy layers description of and eggs. for catalog giving prices and breeding stock, baby chicks Poultry Farm, Box 71A, Avondale, Chester Co.,

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60 Breeds chickens, ducks, geese, turkeys, neas, bantams, Hares, Collie and terrier puppies. Stock and Eggs. Exceptional fine free. Write for yours now. Edwin A. Souder, Telf

S. C. R. I. Reds Eggs $8 per 100; $1.5 Healthy vigorous utility —no pullets.
E. R. JOHNSON. Center Bridge,

Baby Chicks English Leghorns $15.00 per From trap nested stock. Re ber we don't run a "Hatchery."
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Look—Chicks $9 per 100 and up, for Apr livery. 200,000 for 1918— varieties. Our ninth year. Order early. Catalog
KEYSTONE HATCHERY, Dept. 19, Richfield

Thoroughbred Poultry Best 20 var Eggs 15, $1.0 $2.50 up. Cat. free. H. K. Mohr, Quakertown, Pa

Baby Chix B. Rock, February and March order now for del. Satisfaction assured. JUSTA POULTRY FARM, Southampton,

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More profitable than poultry. Big Thousands needed. Experience Send for our money-making propo big free illustrated book, explains LABORATORY SUPPLY CO
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Scotch Collie Dogs for sale. Sevent head to make yo lection from. More than 20 years a breeder of C Send for illustrated circular and prices.
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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Inflamed Urethra.—I have horse that has mucus discharge. His urine is thick, creamy in appearance, but he has good appetite. He has gradually lost flesh for some time, but does not have a symptom of sickness and has no pain. E. Y., Geigers Mills, Pa.—Give him one teaspoonful acetate potash and one ounce ground gentian at dose in feed, twice daily. Change his feed and keep his sheath clean.

Weakness—Indigestion. —I have horse that is dull and lifeless, tiring easily when doing very light work. I have given him salt, sulphur and copperas, equal parts, one-third of a teaspoonful at dose in feed, three times a day. This treatment failed to help him. E. A. S., Montrose, Pa.—Mix one part ground nux vomica, one part powdered sulphate iron, one part ginger, one part cooking soda and five parts ground gentian, and give him two tablespoonfuls at dose in feed, three times a day. Changing his feed occasionally will help him.

Fistula — Sprained Tendons. —Have been reader of your paper for some time and always read the veterinary column, but have failed to find case like the one I am writing about. I have a horse that has running sore under chin. It was caused by his getting fast in halter and when cast he injured himself. I also have another horse with sprained tendons, causing lameness. J. C., Geneva Falls, N. Y.—Either inject some tincture iodine into fistula 3 times a week, or pack it full of iodoform twice a week. Clip hair off tendon and apply one part powdered cantharides and four parts fresh lard, twice a month.

Spasm of Larynx—Choke.—Please tell me thru the veterinary column what ails my pigs. They are 13 weeks old, will weigh 90 lbs. each and so far as I can tell were in good health, but suddenly when they commence to eat they seem to choke, soon fall backward and appear as if choked. Soon as I shake them well they seem to get well and commence eating as if nothing happened. One of them died. I cut it open but found no cause of death. The pigs seem to choke on pure cold water and corn. W. M. K., Columbia, N. J.—If you will warm their drinking water and corn you will have much less trouble with your pigs. Feeding cold, or ice water is one of the common causes of pigs suffering from spasm of larynx and giving choke symptoms.

Unhealthy Cow—Shy Breeder.—I have six-year-old cow that seems to be in good health, but she drinks too little water. For the past 6 years she has raised only two calves. She comes in heat regularly one year and at other times fails to come in heat. Most of time she has been in heat every twenty-one days. A. C. S., Mt. Ephraim, N. J.—Certain animals do not seem to require as much water as others. The light drinkers thrive fairly well, but never put on flesh rapidly, and are seldom deep milkers. Very little can be done to make her breed more regularly. All things considered, she should be discarded from dairy and fatted for beef.

Bumble Foot. — One of my best fowls appears to have a swollen foot and lately has been discharging a thick pus. This is about the only description I can give you of the bird, but perhaps you can tell what is wrong. M. F. K., Center, Pa.—Usually bumble foot or foot abscess in poultry is the result of a puncture between toes, or a bruise resulting in abscess. When the swelling fluctuates on pressure, do not hesitate to open it up freely with a sharp, clean knife. Scrape out pus with the point of a spoon or scoop, swab out abscess with tincture iodine and place the bird in a clean, dry place which is well bedded with clean straw, and the foot will soon get well.

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Seed Potatoes For War Years

Increasing Crop Production Without Increasing The Labor Requirements

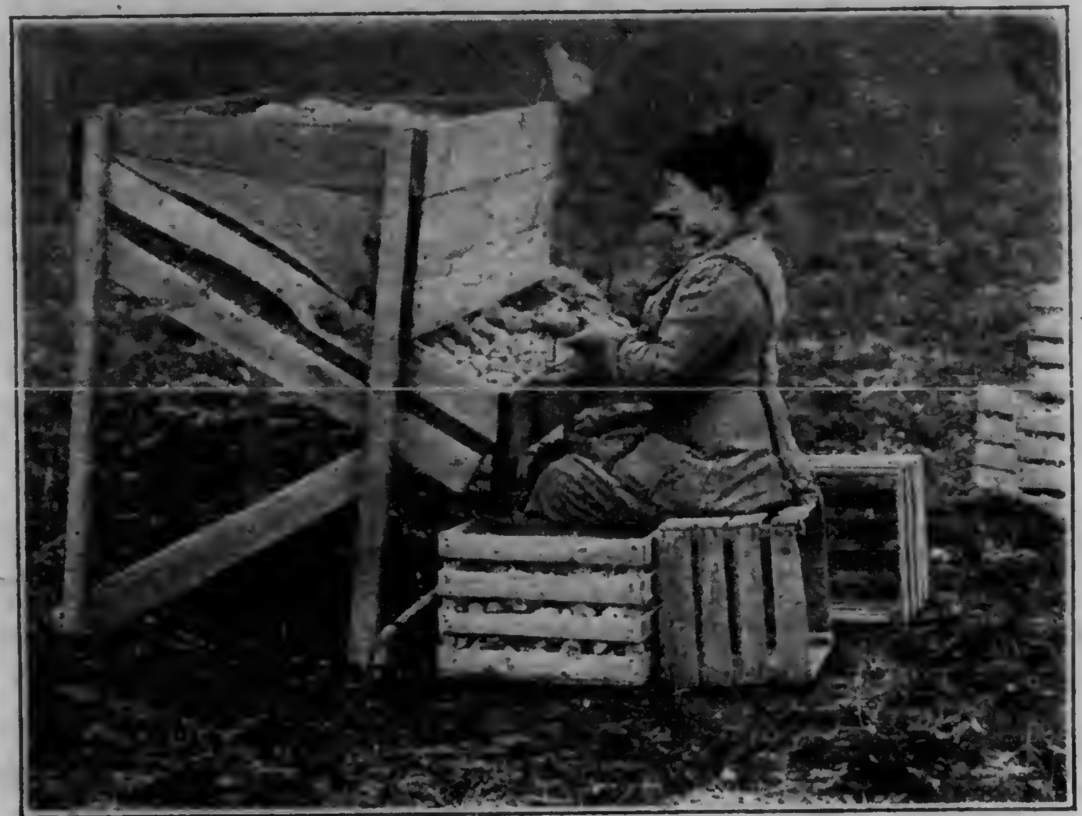
By DANIEL DEAN,
TIOGA COUNTY, N. Y.

The potato crops of 1918 and succeeding years so long as the war lasts must be grown on fewer acres and by fewer men than the crops of 1917 and preceding years. Hundreds of thousands of men from American farms are going into the army and many more are being attracted to cities by the high wages paid there by the manufacturing plants. If our country and its allies are to be fed, it must be by the increased production of our present farms, and the means to do so are limited. European countries are finding that yields fall off as the war goes on and we must profit by their example.

Already the American farmer is the most efficient in the world in the production of food per man engaged. Labor-saving tools have been invented and used to an extent not thought of in Europe, with the result that the production in bushels of each American grower of potatoes, wheat or corn is far greater than that of his European competitor. As an example, the writer produced on his own farm in 1917 6,000 bushels of potatoes with the help of only two hired men, altho the season was one in which bad weather made potato growing very difficult. If exchanged for a suitable variety of foods of equal value, this production would support two hundred soldiers in Europe for a year. American efficiency in food production has had bad as well as good results. It has led to a fierce competition in food prices which has given American cities the cheapest food the world has ever seen, but has driven millions of farmers to the cities and has resulted in farm incomes averaging so low that most farms have been badly reduced in fertility in the struggle for existence.

The means of increasing present production are limited. So much labor-saving machinery is already in use that more diggers and the increased use of the Colorado cutting-rack are almost all that can be expected, altho if the war lasts long enough, tractors may be developed to a point where they may be generally used.

The demand for sulphuric acid and other chemicals is so great for munition manufacture that fertilizers have risen greatly in price and are often hard to get. Low prices for milk in the eastern states are forcing farmers to sell many thousands of cattle for beef, with the loss of the much-needed manure. Spraying should be more used in the northern states where blight may be expected in some years from Maine to Wisconsin. With tillage, the very enterprise of American farmers to quickly adopt and use every improvement in tillage has led often to an excessive use of tools, particularly late in the season. Potato growers are finding that better results are obtained by killing weeds before planting and early in the growth of the crop, stopping the tillage when the roots begin to fill the soil.



Colorado Cutting Rack. Cuts Twice as Fast as Knife Held in Hand. Eyes in Sight When Cutting

Improved seed remains as one of the best means we have to increase potato production during the war. It is only by looking back over a series of years that we can realize how much progress in potato production has been made since the time when the Early Rose, Burbank and similar varieties were in use. These varieties were the best of their time, and while part of the reason they were discarded is due to fashion in color and shape, the great reason for the popularity of our present varieties is the fact that each is more efficient in its region of use than the older varieties it has replaced. Farmers have found in each of the great potato producing sections of our country the varieties of the general type which succeed best under their conditions of climate, soils and markets. Prof. Wm. Stuart, of the National Department of Agriculture, has classified in Bulletin No. 176, most of our present and past varieties into eleven groups or types, each composed of varieties generally similar.

The largest of these great potato producing sections, the one which grows the largest share of our potato crop, is the one which uses mainly varieties of the Rural New Yorker No. 2 type, often called "blue sprouts". This section extends from southern New England thru New York and Pennsylvania, thru Michigan and Wisconsin to Minnesota, altho millions of bushels of the Rural type are grown in states south and west of these and many other varieties are also grown along with the Rural type. The popularity of the Rural type is mainly due to its ability to stand poor conditions of soil or of season better than others. It will grow good crops when other varieties like the Burbank or Green Mountain fail in time of heat and drouth. The others may do as well or better in the more favorable seasons when potatoes are plentiful and cheap, but too often they fall down when most needed. This fact is of particular value while the war lasts. The statesman who directs or the farmer who handles food production must especially prepare for the lean years when food production may be short, and most dangerous to national welfare.

The Triumph is the favorite type in the far south for the earliest spring markets. Then follows the Cobbler from the sections from Norfolk to Missouri, with the Early Ohio on the plains from Kansas to the Red River Valley. The northern Atlantic coast and northern New England find the Green Mountain type best. Colorado largely uses the Pearl and California, the Burbank.

Every new seedling variety starts with a degree of vigor which may roughly be said to be its best. That is, it is nearly impossible to increase the vigor of a variety or of a strain within a variety, but it is very easy to reduce that vigor. In fact, it is so easy that a common opinion is that "running out" can not be avoided. It is perfectly true that any potato variety can be "run out" and will be if it is subjected to such conditions of climate or of handling as are severe enough to

Seed Storage House in Process of Erection at Colorado Shipping Station

impair its vigor. Such conditions are found in the great heat of the far south in summer, which spoils the crop ripening at that time for use as seed. Even as far north as northern Maine, Ottawa, and even to a latitude of over 50 degrees north in the Saskatchewan, there has been found sufficient heat in some seasons to injure potato crops for use as seed.

Potatoes for seed must not only be grown in regions of favorable climate, but every attention must be given to methods which will keep up vigor if the season should turn out to be a bad one. A rich soil is a great advantage because it always has some available fertility ready for the plant. The use of either animal or commercial fertilizers helps in the same way. Either may tide the plant thru a period of hard times which might wreck its vitality.

Water

Potatoes suffer badly from lack of water. Drouth may cause the crop to be practically useless for seed. Its effects may be prevented largely by the presence of plenty of organic matter in the soil. This holds water like a sponge. When potatoes have used up all the soil water their roots can get, they begin to give off, thru the pores of the leaves, some of the water which forms part of the plant. The leaves begin to dry up, a condition called tip-burn or sun-scald, often mistaken for the true blight. Not only is the yield reduced, but the seed vitality suffers. I have found that the method of applying fertilizer in spring to the surface of fall-plowed land, disking in and then plowing under, has the effect of forcing the plants to root deep into soil where there is always some water in time of drouth. Furthermore, less water is needed by potatoes where fertilizer is used, as they can get their plant food from the soil water solution easier. This fertilizer method is suited for use on the late crop in New York and might prove useless for early planting or for wet climates like that of Maine.

Tillage

The production of the best seed potatoes demands care in every detail of growing. Breeders of farm animals know how an individual that is once stunted never fully recovers. The same holds true with potatoes. Especially should care be taken not to cultivate or ridge up potatoes after the roots have spread out much. Great damage often results.

Diseases

The potato is subject to many diseases which may affect the vitality of seed, or may be carried in or on seed and injure the resulting crop. The late blight and rot disease not only reduces the yield but causes rot spots on the tubers. Seed with these spots is very liable to rot in the ground when planted, making a poor stand of plants and a poor yield. The germs carried in the seed increase the chance of an epidemic of the disease the next year. Thoro spraying with bordeaux mixture prevents late blight and rot and helps to control insects and several other diseases which attack the foliage. In sections where late blight is liable to occur, spraying should always be practiced on potatoes intended for seed. Disinfection with corrosive sublimate is a valuable means of preventing loss thru the common scab disease which attacks the tubers, and the rhizoctonia which often causes a poor stand of plants.

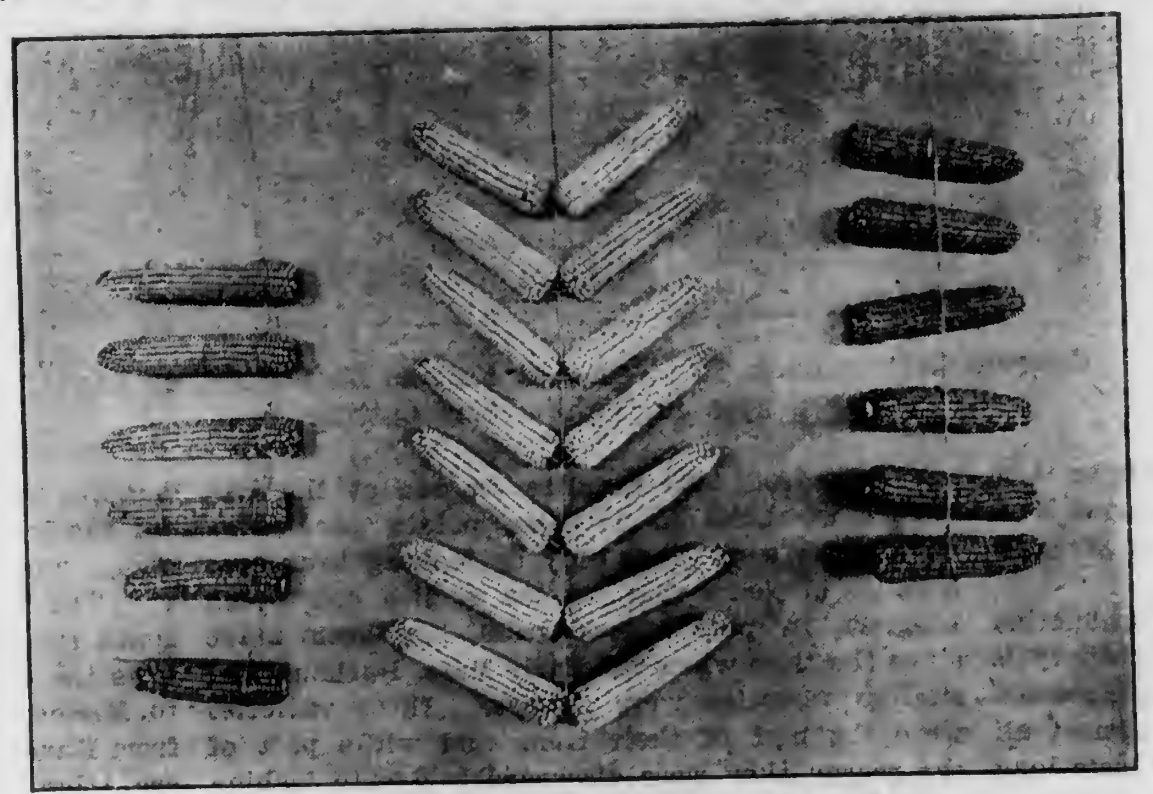
Several dangerous potato diseases are carried by the seed that can not be destroyed by any treatment. Such are the fusarium and verticillium wilts, black-leg, mosaic, and the class of troubles due to degeneration. The only cure for these is prevention, by getting seed known to be free from the trouble. After once getting into a strain of seed, these troubles are hard to get out, and some even infect the soil for future crops as well. For this reason, use only the best seed.

The demand of potato growers along the Atlantic coast for better seed has led to the production of what is called certified seed. A number of states have arranged to have trained scientists inspect the fields intended to produce this certified seed during the growing season, at the times when experience shows that various diseases are best detected. For example, in New York State a scientist from the state college of agriculture visits the fields at blossoming time to detect mixture of varieties and to look for the perfection of the stand. In August or September, the field is visited just before the plants begin to ripen to detect fusarium and the evidences of "running-out" which are easiest seen at that time. The third inspection is after digging, and for the discovery of rot from late blight, the scab diseases and rhizoctonia. This service is paid for by the grower at the rate of one dollar per acre with the first application for inspection. If the field is rejected, as happened to about one-half in 1916, there is no other charge. If accepted, an additional one-half cent is charged for each bushel grown.

A Germinator for Testing Seeds

Seed Selection

Any grower can improve his own seed by following the methods used for the production of certified seed. The writer has for fourteen years been using methods of seed improvement more rigorous than is demanded for certified seed, and has found it profitable to do so. Beginning in 1904, the best hills have been saved for seed every year. It is much surer in results to test seed by actual performance in the field than to attempt to pick it out in the bin. New beginners may profitably use the tuber-unit method of selection with any seed. A cheaper and in some ways a better method of selection after the first year is to dig part of the crop by hand, saving the best hills for use as seed. Scales must be used at first. The hills with a good number of medium sized tubers do not look as fine to the eye as those with a few overgrown ones, but the scales will show the former to yield better. Not only that, but they will sell for higher prices in car lots because city buyers dislike either very large or very small tubers, and are willing to pay more for those of medium size. Hills showing any form of rot or of knots from second growth should be discarded, as these troubles are transmitted in the seed. The best method for scientific work is to keep entire hills separate over winter to plant together, but this is costly for the farmer. In connection with any other method, fields intended for seed should always be "rogued" for weak or diseased hills. By taking these out just before the healthy plants die, they are not left to mix with the good hills.


Methods of Drying and Keeping Seed Corn

Culls as Seed

Much controversy has taken place over the use of culls as seed. Many scientific experiments have shown that smaller yields may be expected from culls than from larger potatoes, and the crop will contain more culls and diseased tubers. In some cases good results have been obtained. These have proved that where there has been no disease or running out in the parent stock the culls make good seed. But it is a fact that most culls come from the poorest hills in the field, and so make poor seed because they inherit and transmit the diseases of their parents.

The potato grower of 1918 and following years to the end of the war must expect that the greatly increased cost of potato growing of the 1917 crop will even be increased. With labor, food, seed, fertilizers, chemicals and farm machinery all high in price, he must carefully study every means of increasing production if he is to meet the increased costs of potato production.

(Editors' Note.—It cannot be too strongly emphasized that the question of seed of all kinds is a very important one this year. Seed potatoes should be selected with a view to their viability, productivity and adaptability to locality. Such care will go a long way in overcoming the handicaps of the times. A big crop of potatoes next season is a necessity to meet next year's food requirements, and every effort should be made to secure a good yield at the lowest production cost.)

Why I Need A Tractor

I have three farms of 102, 113, and 79 acres respectively. With the horses I never get the work done as I see it should be done. The 102-acre farm is devoted to dairying and fruit growing, 2,000 peach trees and 500 pear trees besides some apples, and once in a while we raise a bumper crop of potatoes. The other two farms are devoted to general farming: Corn, potatoes, wheat, hay, pigs (a big item), and some cattle. There is one man on every farm and one extra man where needed, besides day laborers during harvest, etc. We have 8 or 9 horses. We always have a lot of work for the men and horses, yet we have quite a few "idle" acres because we can not get to do any extra work on those idle acres. When we get a tractor we have three men, father and two sons, who can run tractors and in that way we could make about 15 hours a day in rush season. So, where in other times three men were plowing, one only will be plowing at a time and those two other men can do other work. Now, when we have time we will clean up the idle acres and cultivate all intensively, so that we can raise 5 to 10 bushels more wheat to the acre, and other crops in proportion. How could I be more patriotic?

For quite a few years I have been looking for a practical tractor and I think the time has come when they are fairly practical. Of course, they are still subject to improvement. I can do with a few horses less, which is an item these days. When the tractor does not work, its costs nothing. By doing the plowing and planting just at the right time, it may mean the value of a tractor in a single year, and the increased acres and increased yields I figure by far the most besides also the satisfaction of having the machine. It will also come in handy in filling our silos, as at other times we had to hire an engine as ours did not have ample power.

So I think the time has arrived when a tractor is as indispensable on a large farm as a binder or mower. It will aid in getting more work done in less time and with less labor.—C. R. Bashore. Berks Co., Pa.

Preventing Waste on the Farm

Results of Experience in Stopping Leaks

By W. H. ROTHENBERGER

MONTGOMERY CO., PA.

The profits of any business are not determined by the gross receipts but by what is left after all expenses and losses have been deducted In farming there are so many loop holes thru which opportunity and cold cash itself can flow out that one can not guard his business too well.

Poor Seed

Poor seeds are a very prominent channel thru which profits escape whether it be by the use of such as are not acclimated, of low producing strains, or low vitality, or adulterated or misbranded. Nearly every farmer has made the mistake of putting seeds or plants where the length of the growing season, the soil moisture, or the character of the soil itself was not that which was required. One of the most unfortunate illustrations is a farmer spending his costly time and seed in planting a few acres of alfalfa only to find that the land selected is not sufficiently drained, thereby not only causing a money loss but also discouraging him from trying to grow that very valuable dairy plant again. One can also readily find numerous instances where potatoes have been planted where it was either too wet or too dry, resulting in a quarter crop. We have had several young cherry trees winter-kill because they came from a southern nursery and could not stand our climate.

The loss on every farm because of the use of seed which came from low-producing stock or which is of low vitality runs high in the dollars. Crops are like a chain. One poor link makes an otherwise strong chain a weak one. It matters not how much labor, fertilizer, etc., we expend, if poor seed is used, the resultant crop will be likewise. This is going on continually, unnoticed very often, but gnawing at the profits just the same whether it be poorly cured seed corn, using small seed potatoes, inbreeding chickens or using a scrub bull.

Who can measure the loss from adulterated seeds whether it be with weeds or other foreign matter? Most seed dealers offer different grades of seed and it is usually best to get the highest, for that is often none too good. The difference in price is not much as compared with resultant troubles with very bad weeds. Even if seed is adulterated only with dead seeds or foreign matter, 5 or 10 percent of such material in clover or alfalfa is quite a loss.

Too Large Acreage

It is usually a waste to grow more crops than one can tend to properly. Corn is a good illustration. If it is not cultivated at the proper time and the weeds get the upper hand, it will surely mean either a partial failure or that a great deal of time will have to be wasted hoeing it. If the potato bugs or the blight can not be tended to, it would be more profitable to have less potatoes.

Fertilizer Losses

Every farmer should know his soil requirements for fertilizer, lime, etc. I know that by applying $3.50 worth of fertilizer per acre to my wheat, I can increase the yield at least 10 bushels per acre. It would be a waste of labor and seed to try to grow it without fertilizer. It would also be a waste to use much more fertilizer because the yield would not increase in proportion to the increased cost of fertilizer. The same applies to my oats and corn, but only about half that amount of fertilizer is the proper quantity to make these crops most profitable. Everyone must decide for himself when he has struck the happy medium.

New Varieties

A great deal of money, labor and valuable land is wasted in trying out alluringly-advertised crops ranging anywhere from ginsing to miracle wheat, but which in most cases prove a failure. My only experience along this line was with the miracle wheat for which I paid $3 for a peck. It was to be sown upon one acre of ground and produce 40 bushels of wheat. I sowed it on one-half an acre and got about half as much wheat as from an ordinary variety.

A great deal of money is wasted because farmers usually have a lot of hay, cabbage, potatoes, etc., to sell the year when they are low in price and when any of these products are scarce or high in price, they have more to spare. If this could be reversed, this waste because of the low selling price would be eliminated. When a certain crop is high in price one year, it is a matter of fact that the next year the great majority of farmers will speed up in the production of that crop and the price will be low. While these are abnormal times yet the same thing holds true to a great extent at present. The people who have doubled their acreage in potatoes, onions, etc., are already learning to their sorrow that their expectations will not be realized. Hay was plentiful and low in price last season. Watch for reverse conditions this year. With the ordinary annual farm crops which are sold from the farm, the wise man tries to speed up those which were low in price the previous year.

Syrup Strained Thru Felt as Drawn From Evaporator

Poor marketing or not securing for one's products what they are worth is one of the biggest farm wastes. In many cases this is beyond the control of the farmer, but in others not. The present conditions in regard to market milk shows what can be done along the line of organization when for once the farmer has the middleman in a position where a decent price is paid for producing milk. The only way the farmer can get justice is to be organized as are all other lines of industry, and then make his demands and at the same time try to market as directly as possible, eliminating the parasitic middleman as far as possible.

Another big waste is muscular energy which we call manual labor. It is a matter of fact that the farmers are the hardest working class of people, making the longest hours. This is partly due to necessity because of the low returns for the products, but also partly because of poor management. It is in this latter where most of us can make some improvement. This is a different problem for each farmer but one can often arrange the buildings more conveniently at very little expense and have a proper place for the tools where they can be found when needed. We can arrange the work so that it is spread out evenly thru the year instead of all coming in bunches, by growing crops that do not all require attention at the same time, and by doing the little odd jobs about the buildings during winter or on rainy days so that they need not be done when other work is pressing.

Making Maple Sugar and Syrup

The arrival of spring-time, with its warm days and frosty nights, is the signal for the maple sugar maker to get busy in the sugar-bush. The making of a clean, clear, sparkling and delicately-flavored maple product necessitates machinery and many utensils with which to do it. One needs a tightly-built sugar house with good ventilation at the roof directly over the evaporator. In this house he needs a modern evaporator. We have only five hundred trees and our four-by-fourteen-foot evaporator, which is supposed to care for the sap from one thousand trees, easily boils away the sap with less fuel and in less time than a smaller one would.

We use a new 7/16-inch tapping bit each year so that the bore will be sharp and clean and not over 1½ inches into the tree. A taper spile, round and smooth, does not injure the bark of the tree and obviates the necessity of raising the bark with an axe, thus saving much time in tapping. Buckets should be made of metal that will not rust. If one has a bush with plenty of underbrush to break high winds, it is an advantage to use covers upon the buckets for they keep out rain and sunshine, but with an open bush, covers are not practical, principally on account of winds.

When there are from two to four quarts of sap in the buckets, we begin to gather it. When the first load of sap arrives and is strained from the gathering tank into the feeding tank, the fire is started in the arch. For fuel we like steam coal and wood mixed, as it generates more heat and does not require so much firing.

Filling Cans With Maple Syrup and Tightening Caps With Pipe Wrench

The evaporator is self-regulating, sap flowing in only as fast as it is boiled away. Syrup is drawn off about once each hour, straining it thru white felt as it is drawn, the felt removing all lime.

There are unreliable, cheap sugar thermometers upon the market, but one needs a reliable one which can be bought for not less than $1.25 of the firms that sell evaporators.

Syrup is poured into the settling tank and left to become perfectly cold. Then the gallon cans are placed upon the scales, and it is easy to run the syrup into them, shutting it off when the weight of the scales rises. Caps on the cans are made tight with a pipe-wrench, gummed labels are pasted upon the cans and the syrup is ready for market. Maple syrup-making is profitable at present prices.—S. M. T.

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PHILADELPHIA, PA., FEBRUARY 23, 1918.

Implement Inspection Week

The first week in March has been designated as National Implement Inspection and Repair Week. During that week farmers are urged to inspect all implements and machinery that will be needed in spring and early summer farm work. They are urged to determine what parts are broken and worn, and what will have to be replaced in order to put the machinery in good operating condition; also to determine what machinery will have to be replaced or supplemented with new equipment in order to make the decreased labor supply most effective. The two primary purposes of the movement are to insure such early inspection as will avoid damaging delays in farm work later, and to encourage early ordering of parts and repairs so they may be on hand when needed. This early ordering is most essential in view of the shortage of labor and materials in the implement business and the present serious shipping difficulties. Early ordering is absolutely necessary this year if the needed implements and parts are to be at hand when the spring rush of work comes on.

A special week for the work outlined is a new thing, suggested and imposed by the urgency of full farm production. The particular work suggested is not a new thing to good farmers. The careful farmer would do the things suggested anyway. The movement is to insure that the less careful man will have even less excuse for neglecting it. The Inspection Week idea is backed by the most progressive farmers. It should have the enthusiastic support of all.

* * *

Farm Tractors and Labor

The shortage of farm labor is greatly hastening the general use of farm tractors on eastern farms. The tractor enables the farmer to get his spring plowing and harrowing done with less help and in shorter time. It enables him to do more work in the short time available after the soil is ready to work in the spring and the time that crops should be in. It will enable him to do many of the heavier jobs on the farm with less help. In short, it probably takes the place of hired help to a greater extent than any other single implement. For this reason it is most generally urged as a help in the coming season of short labor supply. From many states comes the suggestion that the commonwealth buy tractors for the use of farmers. It is reported that the Pennsylvania Department of Agriculture is interesting itself in securing some forty tractors, to be purchased from the State Defense funds and loaned out to the farmers at nominal rental. This has been tried in a limited way in other states, and with unfavorable results. A number of New York counties tried it last year and the experiment was regarded as a failure. The proposition was submitted to New Jersey farmers gathered in a state meeting a few weeks ago and they turned it down.

Forty tractors for the use of farmers in sixty-seven counties of Pennsylvania, all farmers needing help at the same season and with the bulk of heavy work coming in about a two-month's period, would present a serious problem in diplomacy but little actual assistance to farmers. There are 200,000 farms in the state. Granting that only half of them are fitted for tractor operation there would still be about 100,000 farms with equal claim on the forty tractors, or 2,500 farms for each machine. The hurried use of a state-owned machine for a few days, then passing the machine on to the next neighbor who has been delaying his work in anticipation of the help, has not proved satisfactory where tried. It is not likely to prove satisfactory here this year. Practical farmers appreciate this fact. They are not asking for gifts, but they are asking for the opportunity to help themselves.

Officials of the state Committee of Public Safety do not look favorably on the proposition. They do, however, appreciate the possibilities of more tractors in use on the farms of the state this year. They stand ready to help secure the necessary credit to enable deserving and responsible farmers to purchase tractors for their own and community use. Such credit will have to be arranged thru local bankers in most cases, and where assistance is needed it is understood that an appeal to the State Committee of Public Safety will receive sympathetic attention.

* * *

A Friend At Court

On page 21 of this issue we publish a memorial which was lately presented to the President by a committee representing the Federal Board of Farm Organizations. That paper calls attention to the necessity for the adoption by the Government of a definite, constructive policy in relation to agriculture if that industry is to be able to meet the needs of the present emergency. Five definite propositions are brought to the attention of the President. Each is represented as being vital to success and is backed up by arguments which the well-informed will recognize as just as well as logical. This action of the Federal Board, coming as it did so soon after the letter by the President to the late Farmers' Congress held in Illinois, is significant. Two weeks ago we pointed out in these columns the evident failure of that letter to carry reassurance to the farmers because it lacked definite suggestions and left the impression that the President was not fully informed on the subject.

Theoretically, and to be consistent with other departments of the Government, the Department of Agriculture should be the source from which the President could obtain the fullest knowledge as to formulate a policy which would best foster its development, promote efficiency and secure to the nation an ample food supply, and to the farmer a fair return for his products. The Department has the power, the equipment and the money. Why must the necessity for carrying information as to the most vital needs and for outlining a constructive policy devolve upon private citizens? So far as we have seen, the Department has not presented any one of the five propositions as being important, nor has it publicly given them intelligent consideration. Practical, sympathetic men realize that it will require more than professional advice and nicely-spun theories to increase the food supply in the present emergency. They appreciate the seriousness of the present food situation. They seek to secure needed relief before it is too late.

The Federal Board of Farm Organizations has again exemplified the need for such a body. It is to be congratulated for its keenness in analyzing the present needs, and for its courage in presenting them forcibly to the President. The farmers of the country realize the seriousness of the situation and also the fact that their business is not fairly, much less proportionately, represented at Washington. For these and other reasons the official National Grange should hide its head in shame because it has failed to live up to its opportunity, and still more for the fact that it arrogantly refused to join other bodies to form a joint organization for the purpose of representing the farmers. Due credit must be given the few state grange masters who have given their active support to the national farmers' board.

Farmers are beginning to realize the necessity of having friends at court, both at Washington and at the state capitols, who can effectively and intelligently represent them. This is nothing more than every other industry has had for years, and for this reason they are fully taken care of while farmers are running around in a circle, wasting words in the empty air.

May the Federal Board of Farm Organizations continue to thrive until it is fully what the industry of farming deserves and needs.

* * *

Worth-While Conservation

Conservation of common-place things does not come easily to a people that has been reared in a land of plenty. The American people have never known what it means to conserve food products. They have never faced the necessity, except as it affected their individual pocketbooks. As a result, we have earned the unenviable reputation of being the most wasteful people on earth. It has been said many times that the average American family wastes enough to maintain an average European family. We now have the opportunity to save where we have wasted before. We need to save not only for the families of our Allies, but for the sake of our own men and boys now abroad and soon to be sent abroad and for our own welfare in the coming year. The meatless and wheatless days, the flour substitute orders and every regulation to conserve and make available foods for our Allies provide new experiences for our people. Some may regard them as temporary hardships, but there is little actual hardship until there is actual want. And it is to prevent the day of actual want, here and abroad, that these orders are issued.

The individual may see little gain in the saving of a few pounds of flour and meat, a few measures of sugar and meal, but in the aggregate this saving makes up the supply necessary to send our Allies to keep them in the war. We have already sent more than our normal surplus of wheat, flour and meat abroad. The wheat and flour that we are able to send from now until next harvest must come from what we can save from our normal consumption. What that saving means to the men and nations that are fighting our battles for us is told in the following words of Sir William Goode of the British Food Ministry, in talking to the people of his country last week. He said:

"Great Britain relies on the United States and Canada for 65 percent of its essential foodstuffs. . . . . The popular idea seems to be that the United States is an up-to-date combination of miracle loaves and fishes and widow's crust. . . . . I want you to realize the amazing way in which the energies and sentiments of the American people have been harnessed to a great national movement of organized self-sacrifice so that the Allies can have food enough to carry on the war.

"Early last month we received from Mr. Hoover a cablegram saying he found that as a result of the American conservation campaign he had 150,000,000 pounds of bacon and 25,000,000 pounds of frozen meat more than the British representatives in the United States had estimated as likely to be available. His offer was so unexpected that we had to hustle to get the finance and shipping for this windfall.

"Later on it turned out that the amount of frozen meat available was thousands of tons above the Hoover estimate. Except for the hold-up of shipping in American ports, due to congestion on the railways and blizzards, our bacon and meat shortage would long since have been eased by these shipments, which represented only a small percentage of the total sacrifices of the American people. It is lucky for us that a man like Mr. Hoover is at the helm of the Allied food supply, and that behind him is a people willing to deny themselves so we may live to fight."

This is worth-while conservation and there should be little objection to performing so obvious a duty in the interest of the causes for which we are at war. It should be clear to every mind that the great purpose is to curtail home consumption of the products most needed abroad. We may not be able to use substitutes at a money saving. But the purpose is not to save money but to save food that our Allies may "live to fight".

HARRISBURG NOTES

Realizing the Situation.—With the return of milder weather, and the holding of various meetings for interchange of views, coupled with the development of the state gubernatorial situation, people in authority in Pennsylvania's government and in many parts of the state are commencing to realize the seriousness of the farming problems about which representative men have been crying. It is now a matter for writing of many letters to the Capitol and while many plans are being considered it is frankly said that the situation is one which is going to call for closer relation between federal and state governments. The desire of the national government that Pennsylvania acreage devoted to foodstuffs be largely increased was communicated solemnly last year, but thus far no plan has been evolved whereby the labor necessary would be secured. Elaborate systems for securing skilled labor for shipyards and for maintaining it at munition plants have been worked out, but the farmers and students of farming who have been here lately say that the hands to secure the foodstuffs have not been assured. It is likely that when the governor gets back from balmy Florida that something will be done toward securing a definite understanding from the national government about farming labor. Men who have been here for various meetings have brought the news of farms not occupied, not even for grazing; many young men and women have gone to places where wages are higher.

Draft Will be Later.—According to what has been learned here the next call of men within the draft age, and it should be remembered that young men reaching twenty-one since last June's registration day come under that distinction, will not be until well on in May. The call then will depend upon the ability of the cantonments to handle the men. By that time it is expected that the supply situation will be such as to equip all draftees called. If this is carried out and the various statements about agricultural labor being kept in deferred classes are correct, there will be no decrease of farm labor now available except such as remove to industrial centers. And it may result in people who have been housed up in manufacturing plants realizing that work on the farm has value from a health standpoint. It is said among men active in industries that they believe many of the men will seek leaves this year to go home to help on farms and that the number who will go may prove a source of embarrassment to the owing to the demands for products. If the national defense can make allowances to give the men for the food supply, certainly industry can do more in opinion of some of the farmers who have been here.

The "Dry" Sentiment.—Meetings held here and in other cities the last few weeks have served to emphasize the strength of the sentiment for ratification of the prohibition amendment and it is likely that the call for men to register or enroll so that they may make their influence felt in nomination of legislative candidates will be widely answered. The State Threshermen's demand that prohibition be declared for the period of the war at least is only another indication of the way people in rural districts feel.

The Threshermen's Meeting.—The convention of the Threshermen appears to have given more attention to compensation insurance rates, which have been boosted for that classification, as in many others, in the last six months than to highway matters. A few years ago the organization assailed the conduct of the highways with vigor and traction engine registration and regulation were burning themes. The program this year was more or less of a sedative character as far as concerns highways.

Dorsett's Situation.—E. B. Dorsett, state chief of markets, has cancelled speaking tours and will remain in the bureau to handle the seed corn and other situations until March 1 when his resignation is effective. While some are moving to have Dorsett remain after that date the cabal inside of the state government against him is endeavoring to block any such plan. Dorsett is going to get paid for his services some day, according to statements here. It will be interesting to see whether the feelers put out by the governor and his friends regarding willingness of some men to serve on the Commission of Agriculture in place of some of the present members forecast the oft-reported shake-up in that body or are put out for ante-primary consumption by the grangers of the state.

To Evolve Direct Plan.—The committee in charge of the development of the plan for farmers and laboring men to get together thru the medium of the State Grange and State Federation of Labor for direct buying will work out a system and report it in May. The general idea is to have labor unions or communities of working men get together and buy in car load lots, arrangements as to credits and payments to be established as well as details as to loading, car service and unloading. It is believed that it will help materially in food distribution and do away with middle payments. Possibly, some of the farmers may be able to obtain additional help when needed on the farm by the same means of communication.

Extra Session Talk.—The rumor end of the state government is busy these days. It is now said that Governor Brumbaugh is considering whether the situation in the state does not justify calling of the legislature in special session to enact a redistricting of Pennsylvania for election of congressmen and legislators. The idea would be to announce it as mandatory under the constitution. Even tho a redistricting could be had that would help ratification of the dry amendment there might be some objection because of the expense and the fact that the governor disregarded the constitutional mandate in the regular sessions of 1915 and 1917 as did his predecessor in 1911 and 1913. An extra session would give chance to cure many things, but as the business would be limited to specifications in the call of the governor and the state is now in a political turmoil, it might add to complications especially as the men who would be recalled to Harrisburg are those who sat last year and voted down all anti-liquor legislation and woman suffrage. It also manifested pronounced unfriendliness to the governor, particularly the Senate.—Hamilton, Harrisburg, Pa., Feb. 18, 1918.

NEW YORK LETTER

Potato Situation Needs Remedy.—Arthur Rule, of the North American Fruit Exchange, has spent several weeks studying the potato situation. He says as a result of the call of the country for a big potato crop the farmers responded with a large crop and have held them waiting for a price at which they could afford to unload. Consumption is at a low ebb and the most extreme winter in history has hampered the movement of all produce, especially potatoes. Two-thirds of the crop are yet unmarketed and chances are strong that heavy losses will occur. The crop of 1914 moved slowly and potatoes sold at 25 and 30 cents a barrel to the starch factories or were thrown away. The government urges the eating of more potatoes and prompt and steady marketing of all potatoes now held in storage. Potatoes have brought about $1 a bushel at the cars all winter, but are now going at 90 cents in Central New York.

Evaporators Find Costs Greater.—At a recent meeting of Western New York Evaporators' Association it was found that evaporated apples must bring the operators of driers at least 14½ cents a pound. Fresh apples cost them 40 cents a bushel as compared with 15 to 18 cents in normal years, and fuel and labor were also higher in 1917.

Successful Tractor Schools.—The classes of farmers in attendance at the six tractor schools already held in the state have varied from 45 to over 100 and calls are coming in for a larger number of schools. The state food commission pays the expense of the schools. Six to eight types of tractors are taken apart and assembled and expert instructors teach interested farmers how to run them and keep them running. A much larger number of schools than was originally announced is being arranged for.

Additional Farms for Convicts.—So successful was the plan of using honor men in Auburn prison on a farm leased for that purpose last year that this year additional farms will be secured. Not a man tried to escape tho left by themselves all day. Only garden truck and potatoes will be grown this year.

Dairymen Secure Seed Corn.—The Dairymen's League has secured an option on 12,000 bushels of Long Island grown seed corn from inspected fields. The variety is Luce's Favorite, which has been exhaustively tested by the state college and farm bureaus of the state for 4 years by the side of a large number of other varieties and pronounced as best fitted to New York conditions. The seed has been carefully tested, none showing a germination test of less than 85 percent, most of it being over 90 percent. The option holds until March 15 and members are urged to secure supplies at once thru the farm bureaus. The price is $4.75 to $5 a bushel, delivered, including sacking, grading, etc.

School Boy Help Again.—Owing to Congressman Mott's efforts Dr. Finnegan of the state educational department announces that High School boys of the state will be released early this spring that they may help with spring planting. Each boy must have an average of 75 percent in his school work, with no subject below 65 percent. All must be physically fit, this to be determined by examination and the farms where they are to work must present good moral and sanitary conditions.

Apple Movement Slow.—Never before has the movement of apples been so slow as now, the time of fastest unloading in normal years. Holdings are light, and extreme weather has made shipping impossible. But besides this consumption is greatly decreased, owing to the high price of sugar for cooking, combined with transportation difficulties.

Campaign for Greater Use of Milk.—The food administration of Onondaga County is to put on a drive to promote the freer use of milk. "Children must have milk, and unless milk is bought freely enough to encourage farmers to produce it they will not do it. We must pay the farmer his price for milk now or it means higher prices and less milk next year." The aim is to show that even at present prices milk is a cheaper food than others and far better.

Milk Station to Reopen.—The Arymont Dairy Company of Potsdam will reopen its milk station. It closed several months ago and the farmers took their milk to a local condensary.

Lower Prices of Dairy Feeds to Materialize.—The February price of milk was lowered because the price of feed was to be lowered following the fixing of the price of bran and other wheat products on the basis of 38 percent of the average cost of wheat. This would bring bran about $28; shorts, $30; mixed feeds, $32; flour middlings, $37 and Red Dog, $43. Over one month later bran is selling at $45 to $48 a ton and other products in proportion. Corn and corn products are unobtainable at any price. The farmers' only resort is to feed good wheat and buckwheat to his stock, pigs and hens, and this is being widely done.

Break at the Capitol.—Just as the Legislature was getting down to business after 6 weeks' inactivity a break between the Governor and Speaker Sweet of the Assembly has thrown things into confusion. The governor sent a message to the Senate thru channels other than the usual ones asking for the repeal of the township school law after the Speaker had informed him of a pending bill designed to amend the law in its most unpopular features. The Temperance forces are now active at the Capitol, and other important bills are pending.

Poultry Embargo.—The shipping of fowls has been prohibited thru February, March and April and the price has been fixed by the Government. Sugar can be had now only with double the amount of corn meal.

Maple Sugar Outlook.—The cold weather is expected to produce a fine maple sugar crop. The price will be higher than ever before. The remainder of last year's syrup is bringing $1.75 a gallon. Tin for cans is very scarce, with prices more than doubled. More sugar will be made than usual.—F.

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Growing Tomatoes—II

Second Early, or Mid-season Varieties

By C. C. HULSART, MONMOUTH CO., N. J.

The second early, or mid-season, crop of tomatoes is not made so by planting in the field later in the spring, as many suppose. The varieties, strains and types of tomatoes are so numerous that there may be found one or more for all purposes. In fact, if we count all so-called varieties we may find one for every day in the year because there are listed over 300 varieties. Many of these, however, are duplicate strains of the same variety. But there are many varieties with distinct characteristics—some in leaf, some in stem, some in shape and color of fruit, and all have a little different time of ripening. There are minor characteristics, too, that when known help the grower to decide which is best for him to plant in order to have fruit at a given time during the season.

If the grower is going to produce tomatoes for a local, consuming trade he wants a fruit that will attract buyers and please them in order to have his trade grow and stick to him. If he is growing for a market thirty to sixty or more miles distant, where the fruit must be shipped and sold at wholesale by commission men, then he must have a variety that will carry well and show up to advantage on arrival. If the grower is producing for a local can-house, or catsup maker, the main thing to be considered is a variety that crops well and ripens its fruit well up to the stem, without rotting while doing it. With a list of strains and varieties hovering around the four-hundred mark, it ought not to be hard to find what one needs. My purpose here is to help the grower make his selection. I have lived a fair part of the time in a tomato field for the last 40 years. In naming and describing varieties for the second early crop, I will endeavor to describe the variety, citing some of its characteristics and habits of growth, its value locally, commercially, and as a can-house variety.

Varieties for Second Early Crop—Class I

Dwarfs.—Stone, Century, Champion, in order named. Yet under certain conditions Century should be placed first, and that is a select market. The fruit is more globular in shape, more solid, hence stands up better, but is less productive. It ripens a little earlier than the Stone. The Stone, normally speaking, is the best of the three, a little later in ripening than either of the other two. It is a strong, vigorous grower, with heavy, dense foliage and, under normal conditions, a heavy cropper. It produces larger yields on light loam soils than on sandy soil, but the fruit is very hard to see when picking first begins, because of the very dense foliage. It ripens rather slowly at first, but when the main crop begins ripening it comes off very rapidly. Neither feature is very commendable. It is too slow at first, and too fast when main crop is ripening. Aside from that the variety is a good one. The fruit is large enough for any purpose, or market. In shape it is not what might be called globular, except the first few pickings, after which it gradually flattens a very little on the blossom end. The color is an attractive red. Its season is long where the vines are kept green, picking nearly or quite up to time for frost. Quality is among the best.

Champion.—One of the first of the dwarf varieties introduced. This variety had its day while there was nothing better but has been superseded by Stone and Champion. This variety is more dwarf than either of the other two. The fruit is smaller, hence produces a smaller volume of crop. It is earlier than either of the others mentioned and quality of the fruit is good. Very few of the commercial growers are now planting this variety.

Cut Leaf Varieties—Class II

John Baer, Bonny Best, Chalk's Jewel.—These are the three leading varieties for mid-season planting, and named in order as I see them. John Baer is of recent introduction. It was claimed by the introducer to be a first early sort but does not bear out that claim in the field. It, however, is a good tomato for second early. All tomatoes of this type with cut leaves and a sprawling growth of vine have a tendency to expose their fruit in mid-season after the vine sheds some of its leaves. If very hot, dry weather occurs, as it often does at this time, some fruits are likely to sun-scald or "cook", as the farmer often puts it. This variety is a good cropper, of good sized fruit that ripen evenly up to the stems; color, a very deep red.

Bonny Best is similar to John Baer, but not so good a tomato in my judgment. However, many like it.

Chalk's Jewel, the oldest one of this type, has a better foliage than either of the other two. The fruit is more flattened, softer when ripe, and will not stand up nearly as well as either of the other two; neither has it as good color. It is a light red.

As to crop yields, there is not much difference. What difference there is I would say without having made any measured tests that Chalk's Jewel was the heaviest yielder of the poorest fruit. Any and all the varieties here named and discussed are good catsup and can-house fruit, except Dwarf Champion which is a pink variety hence, not a good can-house tomato because of its color. Chalk's Jewel is a poor fruit for the canner because of its soft, watery nature.

Plants and Cultivation

Plants for the second early crop for this latitude must be produced under glass, and if ripe fruit is desired fairly early in the season, the seedling plants should be transplanted to cold frames as recommended for the early crop. However, many acres are set with plants direct from the seed bed. When this method is decided upon, the plants must be grown more thinly in the seed bed or they will be too spindling and weak to withstand the shock and hot sun when set in the field. Those named in the first class are all dwarfs and potato leaved. This type of tomato grows more stocky, hence makes nicer plants in the bed, provided they are not left in the beds too long and allowed to "run up". This type of tomato can be planted much closer together because of their dwarf habit. Many growers set them in check rows 3 by 3½ feet; the wider distance the way they are to be picked. On strong soil the Stone and the Century should

be six inches wider each way to avoid any possibility of crowding.

Class II. — This open-growing type should be handled the same as the dwarfs, except that they should be set 4 by 4 feet or more. On rich soil, 4½ feet the way they are to be picked should be given to allow plenty of room for both picker and basket.

In selecting a site for the second-early tomato crop one need not be discriminating as for the early crop. At planting time, every day is one nearer to settled, warm weather when cold days and storms are less likely to occur. The varieties are more hardy, too, and most of them will produce well on a wider range of soil. The more clayey the soil, the larger volume of crop but the less regular in shape and quality.

Fertility

There are more acres of this type of tomato grown without any animal manure than there are with it, artificial manure being used. This type of tomato does not want too much available nitrogen early in the life of the plant, or a rampant growth of vines at the expense of fruit will be the result. This is more pronounced on the cut leaf varieties than it is on the dwarfs. A natural and uniform growth is best until a fair amount of fruit is set. Then give a side-dressing of a good fertilizer. I am using this coming season a 4-8-2. I would prefer a 4-8-5 could I get it at reasonable prices. Use 200 pounds to each thousand plants in the hill before setting the plants, and from 200 to 400 pounds as a side dressing when fruit is well set. If soil is quite poor and plants are yellow and slow growing, apply 150 pounds nitrate of soda in addition. All side dressings should be covered for best results.

This second-early crop is more cheaply raised than is the early crop: First, it costs less to produce the plants; second, it costs less for fertility; third, they require less cultivation, and practically no hand hoeing when planted in check rows; fourth, the money value per acre for the last two seasons has been nearly equal to that of the early crop; and lastly, any portion of this crop not disposed of elsewhere can be readily sold to the canners.

DEHORNING PEACH TREES

The process of dehorning peach trees is so little used that it does not seem as tho its merits were really known to a great many growers. It is a well-known fact that it is impossible to kill a healthy peach tree by cutting it back. Also, it is well known that it takes four years to grow a peach tree to a size where it will bear good crops. Now an old tree dehorned will grow to a large size in two years' time, and the third year will bear a good crop of fruit.

Of course, there are some conditions under which it would not be advisable to try dehorning. Most any good healthy orchard that has grown to an unmanageable size can be dehorned with excellent results. When dehorning trees they should be cut so there is from twenty-four to thirty inches of the main branches left. This will generally give the best results.

Trees that have been dehorned will start out large numbers of sprouts, the strongest ones being near the ends of the branches. The growth will be so rank that it would not be advisable to prune any at all in the next winter. Do your pruning in the summer when it will have the effect of slightly checking the growth.

The second year the trees will grow almost as rankly and will be very thick. They should be pruned this summer also. Thin them out pretty well so that there will be little to cut next winter, because winter pruning will help to make them grow too fast. This summer pruning checks the growth and will make them throw out more fruit buds for the next year. In connection with this it would be well to stop cultivation early to help check the growth. The less winter pruning you do the better the blossoms will stick on next year. You now have a tree which is both large and strong. Under ordinary conditions it will bear a good crop this third season; and the tree will last another six or seven years and give you good returns.

This article is based on what I have seen dehorned trees do on the farm of Arthur J. Collins of New Jersey. Mr. Collins is enthusiastic over the results and intends to treat more of his trees in this fashion as they get too large to be handled with ease.—T. F. Young.

TIMELY FRUIT NOTES

By Dr. J. P. STEWART

Fertilizing for Young Apple Orchard

"I have a 15-acre orchard of 1-year-old trees. The soil is the same as in the State College experiment in J. R. Sleek's orchard (Frankstown stoney loam). This is new ground, just cleared, and apple trees are planted on it. I am using the buckwheat crop system, recommended in one of your bulletins.

"I wish to treat these trees with commercial fertilizer and would like to know what kind to use, how much to apply to each tree, where it can be bought, and when is the best time to apply it."

Our experiments indicate that on young trees the best fertilization that you could apply would be stable manure in sufficient quantities to make a fair mulch around the trees to a distance of 3 or 4 feet. It should be kept away from immediate contact with the tree, however, and the bases of the trees should be coated with lime-sulphur, especially in winter, to avoid damage from mice.

If you wish to use commercial fertilizer, I would try to a get a mixture of about 1 part of nitrate of soda and 2 parts of acid phosphate, and apply it at the rate of about 3 pounds to the tree over the same area as indicated above.

The fertilizer may be purchased from any of the fertilizer companies. I would apply it about when the buds start or shortly after. The manure can be applied at any time.

TILLAGE VS. SOD MULCH IN APPLE ORCHARDS

Experiments involving the four principal cultural methods—tillage, tillage and cover-crops, sod-mulch, and sod—have been conducted by the Department of Experimental Pomology of the Pennsylvania State College since 1907.

The results to date indicate that in the absence of fertilization, the mulch method gives the largest growth and most fruit in young orchards, while the tillage and cover-crop method has done slightly better in mature orchards. Where proper fertilization is added, how-

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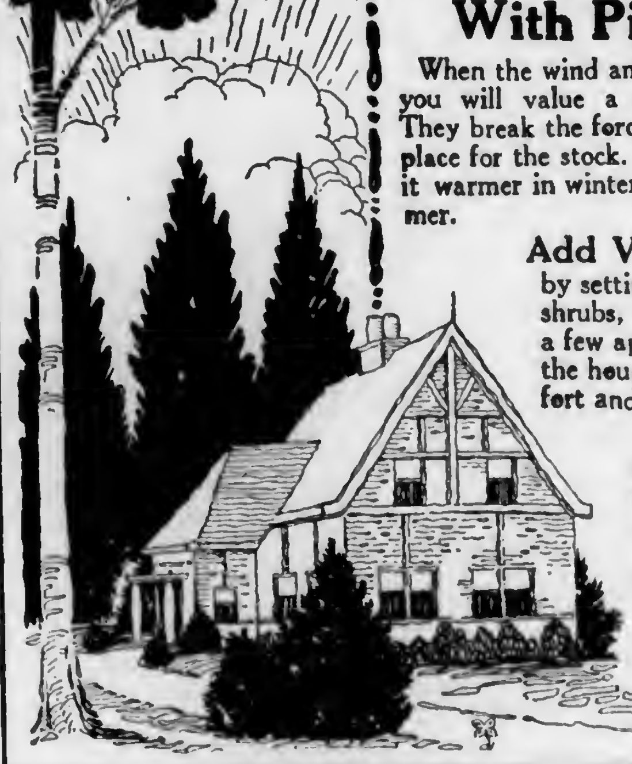

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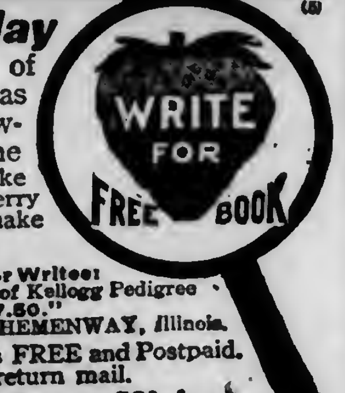

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Our seeds are selected and cleaned to be WEEDLESS and free from dead grains. They will go much farther than ordinary field seeds, nearly always adding enough to the crop to pay for themselves. Samples and catalog including "How to Know Good Seeds" free.
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We pay the freight on 100 lbs. or more.

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(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable easy-working pump placed *outside* the barrel—prevents rusting—all parts easy to reach. 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for our free booklet.
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Mr. Planter if you are going to plant out an orchard this spring be on the safe side by planting my Guaranteed Trees. True to name, free from disease and packed so as to reach you in perfect condition.

	Each	10	100
See 2 yr. 6 to 7 ft. x x x Apples, Plums, Pears	$.30	$2.50	$18.00
2 Medium size 5 to 6 ft.	.25	2.00	15.00
Sweet & sour cherries xxx 6 to 7 ft.	.35	3.00	24.00
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Send for Free Price List of our leading varieties of small fruits and ornamentals.
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American Mastodon Pansies. These possess the most robust vigor, largest sized flowers, superb rounded form, great substance, violet scent, and marvelous colors without limit. The quickest to bloom and most durable; the acme of perfection in Pansies. Seed, pkt. 10c.
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SPECIAL OFFER—These four greatest floral novelties FOR 25c. with Booklet, "How to Grow Flowers," and Catalog.
OUR BIG CATALOG of Flower and Veg. Seeds, Bulbs, Plants and new fruits FREE. We excel in quality and varieties.
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CLOVER, Timothy, Alsike, Alfalfa, Oats and all kinds of PURE FARM SEEDS direct from producer to consumer; free from noxious weed seeds. Ask for samples.
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Seed Potatoes Personally selected, Irish Cobblers; Spaulding's Rose; Green Mountain and 20th Century. All grown in Aroostook Co., Maine. I bought these personally in Maine and offer surplus that I will not need. Reasonably priced. Address
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Strawberries Try Wm. Belt Joe or Dunlap (Sweetest and best). Send us one dollar carefully wrapped for which we will mail and guarantee 150 plants of either sort or 50 of each East of Miss. river only. Cat. free. Slaymaker & Son, Wyoming, Del.

ever, the mulch treatment has generally proved equal or superior to any other. The mulch treatment also requires much less labor than tillage which is especially important just now.

The necessary mulch can be secured in the younger orchards at least by growing alfalfa between the rows. This method has proved very successful at the College during the first 10 years, and there is no apparent reason why it should not continue for at least 10 more. Any plant materials, such as swamp grass, damaged straw or hay, or even finely chipped brush and limbs obtained in the prunings, may be used for the mulch. Efficient and thoro protection against mice must be provided in connection with the mulch treatment, however.

Among the annual cover-crops, hairy vetch, soybeans, oats and Canada peas, buckwheat and millet are now showing the best results, in the order named.—J. P. Stewart.

NEW YORK STATE FRUIT GROWERS' ASSSOCIATION

(Concluded from last week.)

Root rot, which is killing many trees in New York, Pennsylvania, Virginia and the Carolinas is caused by a fungus known as xylaria. Professor Whetzel says it is not safe to plant a young tree where old, dead trees are taken out. Dig out the roots and seed down. Do not cultivate around the infected stumps or holes as cultivation spreads the spores. In four or five years it may be possible to plant young trees without danger of infection.

Leaf blight of cherries has been very bad during the last two years. As a means of control it was advised to make the first spraying just after blossoms fall and two other sprayings later.

Resolutions

A noteworthy feature of this meeting was the attendance of the legislative committee on farm needs, headed by Senator Elon R. Brown. While these men were present, strong resolutions were unanimously adopted directed against the personnel of the new State Farm and Markets Council. It was stated that in the appointment of the council, none of the agricultural societies had been consulted and that no member of the council was representative of agricultural interests. The resolution asked that Governor Whitman and Senator Brown appoint a new council, and it was demanded that the senate refuse to confirm the present council.

Other resolutions adopted asked for the enactment of a Federal law for the uniform grading and packing of apples; declared against the bill now in the United States Senate virtually prohibiting the importation of nursery stock; favored the appointment of a committee composed of the officers of the society and the executive committee to meet a similar committee from the New York State Fruit Growers' Association, the two committees to draft a constitution and by-laws under which the two organizations can be merged; favored the new Federation of Agricultural Organizations and recommended that the society join that body; favored the standardization of farm tools so far as practicable, and asked that the present embargo on spray materials be lifted.

The present officers were re-elected to serve until such time as the union with the New York State Fruit Growers' Association is effected.

DREER'S 1918 GARDEN BOOK

DO NOT LET YOUR "WAR GARDEN" be a failure this year by lack of knowledge of what to plant, how to plant and when to plant.

Dreer's Garden Book for 1918
is an authoritative guide to all garden work for both vegetables and flowers. Cultural directions by experts.

256 pages: four full page color plates and four full page duotone plates; also hundreds of photographic illustrations.

A copy free if you mention this magazine.

DREER'S CRIMSON BALL RADISH—a very quick maturing, dainty little radish of mild flavor; skin bright red flesh tinged with red. Packet 10 cts.; oz. 20 cts.

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Our products are the best of their kind.

Hennesy's Scientific Formula Fertilizers
are dependable at all times and will surely increase your yield, besides improving your soil for future use.

Our Peerless Brand Hydrated Lime
will correct soil acidity at low cost. It is practically 100 per cent pure.

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is a real egg producer. It makes hens lay and pay.

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Calicide—The best spray material for trees, potatoes and other vegetable crops. Write and get our prices and literature covering all our products. See for yourself how you can save. Write the

READING CHEMICAL CO, Reading, Pa.

Hoffman's Northwest Clover Seed

Selected from the states along the Canadian border and from the districts adjacent to the Black Hills and Rocky Mountains. "NORTHWEST" CLOVER is

Earlier, Hardier and More Productive

The superiority of "NORTHWEST" Alfalfa Seed has long been acknowledged. Clover Seed, Alsike and Timothy Seed grown in the Northwest have a like advantage. It is *earlier*, because of the short season in which it matures—*hardier*, because of its survival of Northwest winters—*more productive*, because of its extreme vitality. "NORTHWEST" Grass Seed succeeds where other fail. Less "NORTHWEST" seed need be sown per acre.

Hoffman's 1918 Catalog is full of valuable hints for growing crops. It offers Seed Oats, Corn, Potatoes, Field Peas and Beans, Alfalfa and Grass Seeds. It is free, with a packet of seeds samples, if you mention this paper

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Landisville, Lancaster Co., Pa.

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Saves Time and Labor—Increases Yield

Pays for itself many times over. One man and team opens furrow, drops seed any distance or depth, drops fertilizer (if desired), covers up, marks next row. Automatic. More accurate, dependable and quicker than hand planting. Furrow opens and seed drops in plain sight. Does not injure seed. Has long life, needs few repairs. 3 sizes for 1 or 2 rows. Protect yourself against uncertain labor and season.

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Strawberry Plants. Lowest prices. Catalog of 85 varieties including the Everbearers Free. L. G. TINGLE, Box 77, Pittsville, Md.

Strawberry Plants money making varieties at reasonable prices. Catalog free. BASIL PERRY, Georgetown, Del.

Mention Pennsylvania Farmer when writing to advertisers.

The Dairy

IN NEW YORK MILK FIELD

The Price Cut

The first of February has brought a price cut in milk of a half-cent a quart with the same reduction made to the consumers. The dealers have the same profit as before while the farmer gets it both ways, a reduction in price and increased cost of production from feed costs which are now higher. The price now in our vicinity is $3.23 a hundred for February milk testing 3 percent, with the customary four cents a point for additional fat. Dr. Jordan says that the price is the best that could be made with the conflicting interests that enter into the situation. I have no doubt but that he is about right. We are accustomed to censure the Commission for being a city commission, but if it were composed of mostly country people there would be a rebellion, possibly, in the city over the price as it is fixed. With the city so fully represented and so few of country sympathies in its membership, it is less likely that there will be an uprising among city folks. Farmers will stand more abuse than townsmen and the Food Administration knows it. There is a very discordent element in the towns which we of the farm do not see except now and then. I am not defending the Commission for handing us a lemon in the way of the milk price, but I can partly explain the situation. Explanation does not justify it, and I am on record as advising a protest against any unfairness. Here is a chance.

What shall we do under the conditions? That is a question that is bothering many. Shall we sell off the cows and go out of business? I believe not unless there is some other good reason for going out. Some will do so, but most, I think, will dispose of a few cows and keep the others. This is the sane method. We must not get rattled now. There is an element of patriotism if not of profit in staying by the situation, and in the long run I believe we will win out. We cannot expect large profits ever, but it seems to me that the farmer will be better off in the long run if he keeps on making pretty nearly his accustomed quantity of milk.

The League Indictments

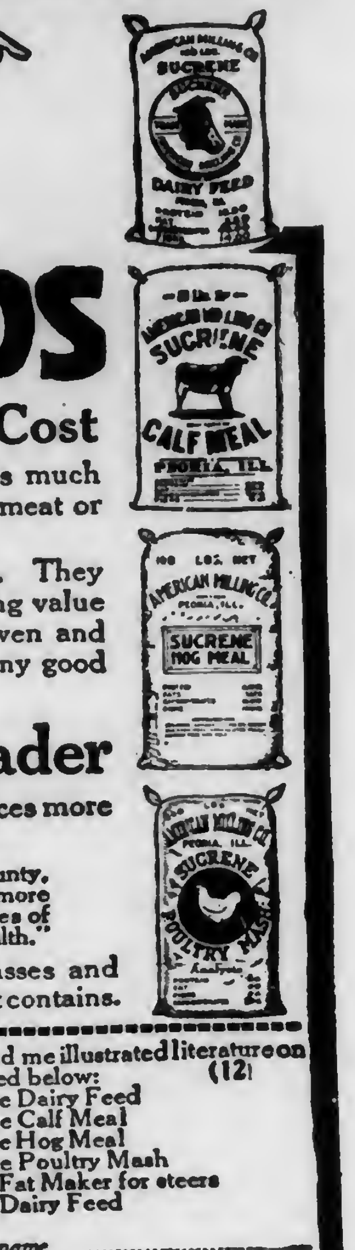
Just now the League indictments are keeping pace in farmers' discussions with the price for milk. The indictments are a fact, and if a trial is had in New York City there will be a conviction, in all probability. Should there be a conviction there might follow an appeal, but in New York City an appeal might as well be adjudged in advance. Conviction would almost certainly follow. It is not strange then that a change of venue is sought already, and if the trial can be brought into the country it may result in an acquittal. The technical law has probably been violated. The spirit of the law has not been violated—the real meaning and purpose, I mean. It is hardly right to convict on a mere technicality when the spirit of the law is upheld. The danger is so great that it is no wonder that some of the members of the legislature who desire to get in sympathy with the farmers' voting power have introduced bills to exempt the organizations like the League from the provisions of the law that has been violated according to the indictments. We are glad to get these evidences of fairness, whether they come from real friends of the farmers, or of the farmers' votes. However, there will follow the question of constitutionality of the proposed measure and considerable danger that the farmers' organizations will get the worst of it. It is worth a trial for all that.

Stable Work Made Easy By Electric Lights

The Future Trend

What of March and April prices now that we see the trend of price fixing? It is very likely that we will get further cuts in these months. We may as well look the situation in the face. The Commission does not care a fig for the farmer or for justice to him. We can not expect the city members to get sentimental in their regard for farmers, and they are certainly in control. All they care about is to get such a supply as will meet the needs of the city consumers. There is no other line of argument that will appeal to them. With March, and more truly in April, there will be more milk produced and the danger of a shortage will have passed for the present, and it will seem safe to cut further on the price. Costs of production will remain the same so far as feeds and other expenses are concerned, but

"All My Grain Goes to Market"



SUCRENE FEEDS
Bring Better Results at Less Cost

Help win the war! Your grain made into bread goes much farther to feed Uncle Sam's army than when made into meat or dairy products—and it brings you better profits.

Sucrene Feeds take the place of nearly all grain feeds. They are composed of materials known to possess high feeding value in protein, fat, carbohydrates, minerals, etc. Tested, proven and positively guaranteed in quality, and cost you less than any good ration you can mix yourself.

Sucrene Dairy Feed the Leader

Stop making milk at a loss. Sucrene Dairy Feed produces more milk at less cost than other feeds. *Here's the proof:*

Thos. Y. Hackett, one of the biggest dairymen in Salem County, N. J., writes: "I can honestly say that Sucrene has made me more money than any feed I ever bought. It produces larger quantities of milk at low cost, to say nothing of keeping the stock in best of health."

Cows enjoy Sucrene Dairy Feed because of the molasses and well-balanced variety of clean, wholesome grain products it contains.

Why use corn worth $50 per ton or more, when you can buy a standard, ready-mixed feed for less money and get better results because it is a scientifically balanced feed of guaranteed uniform quality?

Try Sucrene Dairy Feed. Order a ton from your dealer. If he does not handle it, write us his name and we will see that you are supplied.

Fill out and mail us the coupon today. Check the feeds in which you are interested.

American Milling Co.
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(16 Years America's Leading Mixed Feed Specialists)

Please send me illustrated literature on feeds checked below: (12)
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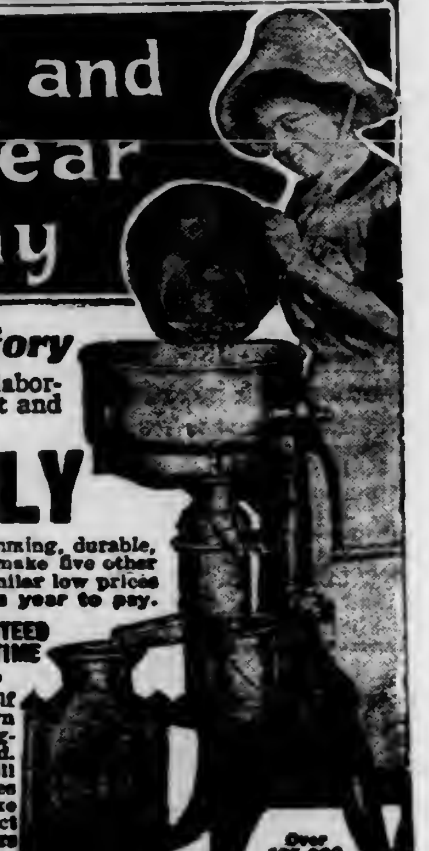
Only $2 DOWN and One Year To Pay



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You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

$29 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, close skimming, durable, fully guaranteed separator. Skims 95 quarts per hour. We also make five other sizes up to our big 800 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only $2 down and a year to pay.

Patented One-Piece Aluminum Skimming Device, Rust Proof and Easily Cleaned — Low Down Tank — Oil Bathed Ball Bearings — Easy Turning — Sanitary Frame — Open Milk and Cream Spouts.

30 DAYS' FREE TRIAL GUARANTEED A LIFETIME
Against defects in material and workmanship
You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your $2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

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Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only $17.95. Skims warm or cold *milk closely*. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—

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The STAR Curb Clamp has been an undying friend of every user of STAR Barn Equipment because it makes the installations of these stalls the work of minutes instead of hours.

Since it is patented, the Curb Clamp is found exclusively on STAR Steel Stalls. It does away with templets and anchor bolts and enables you to finish up your curb along with the rest of the concrete work.

To set a stall the STAR Way, just drop it in place—tighten up the Curb Clamp draw bolts and the job is done. And the stall is set in sixty seconds—taught, tight and permanent.

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STAR goods sold by best dealers everywhere

HUNT-HELM-FERRIS & CO., 15 Hunt St., Harvard, Ill.
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"Good to the Last Drop"

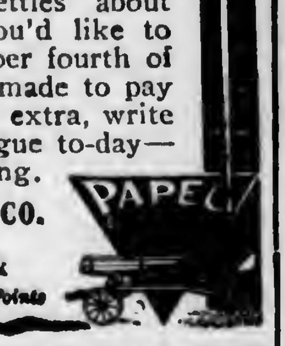
Raise Your Calves on
Blatchford's Calf Meal
and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Company, Dept. 98, Waukegan, Ill.



Ensilage to the Top

Was your Silo really full when you began winter feeding? The average Silo when filled in a hurried fashion settles about one-fourth. If you'd like to know how the upper fourth of *Your* Silo can be made to pay $75 to $100 yearly, extra, write for our 1918 catalogue to-day—it's free for the asking.

PAPEC MACHINE CO.
178 Main Street,
Shortsville, New York
25 Convenient Distributing Points

REGISTERED HOLSTEIN BULLS

Six to ten months old, nicely marked, some ready for light service. Write for particulars, stating just what you want.

ALLAMUCHY FARMS
Arthur Danks, Mgr. Allamuchy, N. J.

How Much Lime Does Your Soil Need?

Don't guess. Know exactly by testing your soil at home. Stop using lime where not needed. Use just enough where required. Save work. Save time. Save lime. Simplex Soil Tester automatically registers amount of lime and ground limestone soils contain and require. Sold under money-back guarantee. Costs 1-2 cent per field. Low in price. Write for literature. SIMPLEX MFG. CO., Dept. 255-B4, Baltimore, Md.

$2.00 puts This Separator in your dairy

Make your cows pay a profit. A good cream separator not only saves labor, but pays for itself quickly. That's why it is easy to buy the Maynard on these wonderful terms—$2.00 down and a year to pay.

Proves in 60 days or your money back

The longest wearing, closest skimming separator made. The equal of the $100 kind, but our price

Saves you $30 to $40

New aluminum skimmer gets every ounce of butter fat. Easiest to clean—only one instead of 30 or 40 pieces. One-piece supply tank. Open cream spout.

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Write for your copy today. Read every word before you buy any kind of separator. It will open your eyes.

The Charles William Stores
2203 Stores Bldg., New York

BETTER CROPS FROM THE ONE HORSE FARM

The small farm is just the place where compact and efficient work will be done by the

Cutaway CLARK One Horse Disk Harrows

Market gardeners, truckmen, florists and others will obtain greater yields and bigger profits from the use of these light draft 1-horse harrows.

In several styles and types; one at least, just what you need. Disks are forged sharp—dust-proof oil soaked hardwood bearings.

Send for book "The Soil and Its Tillage"—and our new catalogue; also names of nearest dealers.

The Cutaway Harrow Company
644 Main St., Higganum, Conn.
Makers of the original CLARK Disk Harrows and Plows

there will be milk regardless of fair price and the further cut will come. It is the old assertion of the corporations, "What will the public stand". Here it is "What will the dairymen stand in the way of price cuts?" They will be cut all they are thought to stand and not create too much of a shortage in the city.

Are we selling off cows too rapidly? That they are going somewhat is assured, I think. Many of them are going for milkers elsewhere, but that in many cases means that they will go to some locality near a big city, be milked thru one lactation period and then go to the block. Indirectly they are going for beef when they leave the up-state farm. Some of those cows are the best we have. If when they have been milked out in one lactation they could be brought back here it might result in saving some good cows and making a little profit to our dairymen. This may be worth thinking over by our farmers and possibly by our state department of animal industry. Such a department has been established recently in this state and it is anxious to make itself of some value to the state.—H. H. Lyon.

MILL FEED REGULATIONS

New Price Relations Between Commercial Mill Feeds and Wheat

By new regulations covering mill feeds, the U. S. Food Administration has established a relation between the price of mill feeds and the price of wheat. The plan guarantees to the farmer a direct relationship between the price he receives for his wheat and the price he pays for feed. The regulations apply to all mills engaged in the business of milling flour and feed from wheat and licensed by the U. S. Food Administration.

The price of bran, bulk, f.o.b. mill, in carload lots, for one ton (2,000 pounds) is in no case to exceed 38 percent of the average cost to such mill of one ton of wheat at the mill. The price at the mill is determined by the average cost to the mill of the wheat ground during the previous month, plus an administration fee of 1 percent paid by the mill on the wheat so purchased and ground. The regulations provide further that on all invoices the price shall be on the basis of cash or draft. This is the price, in bulk at the mill in carloads. All invoices, moreover, shall show the bulk price at the mill plus the price of sacks, items of freight and interest, if any, when goods are sold on extended terms or credits.

The plan adopted means that there is no advantage in mills shipping their product far away. This guarantees farmers' supplies from the nearest source of production. It also tends to keep his local mill in operation and give him the full benefit of its output.

Figures for a Specific Case

Take a specific case. Let us say that the price of wheat at Philadelphia is $2.27 per bushel. A ton of wheat would then cost $75.67. Taking 38 percent of this would give us a price of $28.76 per ton, which is the bulk price for car lots of bran at the mill in Philadelphia.

A mill located in Kansas City, for example, pays $2.13 for the wheat, which is $71 per ton. By taking 38 percent of this we have the figure $26.98, which is the maximum price that the mill at Kansas City may ask for a ton of bran bulk at the mill in carload lots. The freight between Kansas City and Philadelphia is $5.80 per ton, which gives a bulk price of $32.78 as against Philadelphia mill price of $28.76 bulk. The difference is $4.02. The Kansas City miller therefore in shipping his goods to Philadelphia and meeting the competition of the mill at Philadelphia grinding wheat at the basic price would have to reduce his bran value $4.02 to meet the competition. It is therefore a distinct advantage for the Kansas City miller to sell in his own market.

This illustrative case can be readily applied to any freight difference by using the following method of estimating the maximum price that the mill may ask for a ton of bran in carload lots bulk f.o.b. mill. First, ascertain the actual cost to the mill of the wheat ground. This cost is the price of wheat ground during the previous month. Let us say the average cost was $2.10 per bushel. Dividing this by 60, the number of pounds in a bushel, we get a price of 3½ cents per pound, or $70 per ton; 38 percent of this is $26.60, which is the maximum price per ton for bulk bran at the mill in carload lots.

Fixed Differentials for Other Mill Feeds

The other grades of mill feed are established on a fixed differential, taking bran as the basic price. For shorts or standard middlings, the maximum charge may be $2 per ton over the price of bran. Mixed feeds may be $4 per ton over the price of bran. Flour middlings may be $9 per ton, and Red Dog $15 per ton over the price of bran. In the case cited, the maximum price for these feeds per ton bulk, f.o.b. mills in carload lots, would consequently be as follows: Shorts and standard middlings, $28.60; mixed feeds, $30.60; flour middlings, $35.60; Red Dog, $41.60. Until further regulations are issued, a maximum of 50 cents per ton differential on feed sold and shipped in less than carload lots will be permitted.

The Food Administration recognizes the important position of mill feeds in plans for commercial feeding, and particularly in the dairy industry. Hence the desirability of exerting some stabilizing influence to reduce the price of these commodities. The aim was two-fold: (1) To secure lower feed prices thru which to effect a reduction in prices of dairy products and (2) to eliminate the disturbance in flour values caused by increased returns received by the miller for his feed.

MARYLAND STATE DAIRYMEN MEET

Baltimore Milk Discussed

Over 1,000 members of the Maryland State Dairymen's Association met at Baltimore, January 25th, to discuss the milk prices. Early in November the price of milk agreed upon for one month was 30 cents per gallon for 4 percent milk; the future price to be determined after the Federal investigation on the cost of producing milk. About this time the Council of Defense became alarmed at the number of dairy cows that were being slaughtered for beef. As a war measure to conserve the dairy cows, it ordered an investigation to be made on the Maryland farms as to the cost of producing a gallon of milk, in this way insuring the producer a price that would cover the cost of production.

Dr. A. F. Woods, President of the Maryland State College, was appointed chairman of this commission. Together with the Public Service Commission, he investigated the actual cost of producing milk on 100 Maryland farms for the week of November 28 to December 3. In selecting these farms, the county agents in ten different counties selected ten average herds and personally supervised the feeding and handling of these herds for one week. They weighed the feed and estimated the cost of feed and labor, making this one of the most thoro investigations ever made.

The result of this investigation showed an average cost of 41 cents per gallon. When this investigation was published the officers and directors of the Association called a meeting and invited the Baltimore Food Administrator to confer with them and try to agree on a fair price to be paid the producer. Mr. Batiger, the Food Administrator, flatly refused an increase at this time, stating that he was not prepared to accept Dr. Wood's report.

The directors then decided to call a meeting of all the producers, which was held January 25. After hearing from different parts of the state as to the actual sale of dairy cows, Mr. Batiger was asked to explain his position. In his address he called on the dairy farmers to be patriotic and stated that feed was going to be reduced, that Baltimore City would have to be educated to the advantage of milk as a food, and that an increase to the consumer at this time would mean a decreased consumption. He also stated that Dr. Wood's report covered too short a time to draw any conclusions. This information was not very well received by the hundreds of farmers present.

Dr. Wood then followed, explaining and defending his report. He stated that the report showed the conditions as they actually existed, and unless a price be paid the producer to cover the cost of production, there surely would be a serious shortage of milk in Baltimore City next fall. The President then appointed a committee to confer further with Mr. Batiger.

A committee was appointed to secure data on costs of the erection of a milk condensary to take care of surplus milk during summer months.—D. G. Harry, Harford Co., Md.

VEAL CALVES EXPENSIVE

Veal calves from dairy cows generally lose money for their owners, and when these calves are kept until a year old the loss is even greater, is the information brought by cost-account records of the Ohio Experiment Station for 26 herds. The milk used to grow these calves is often of more value as human food than the veal produced.

In the 26 dairy herds, 18 owners lost money on raising calves for veal. The average loss on 323 veals was about $1.95 a head. The average loss of raising 361 calves in 30 herds studied was $6.90 for the first year. Only five dairymen among the 30 raised calves at a profit.

When dairymen get a high price for milk, they would be ahead by selling calves rather than raising such animals for veal or beef. The milk would bring a higher price for human food than the veal produced from it. Purebred calves usually bring higher prices for breeding purposes, and in such cases it is profitable to raise them.

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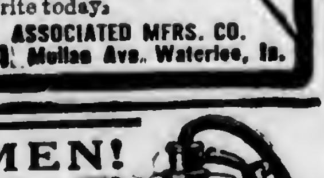

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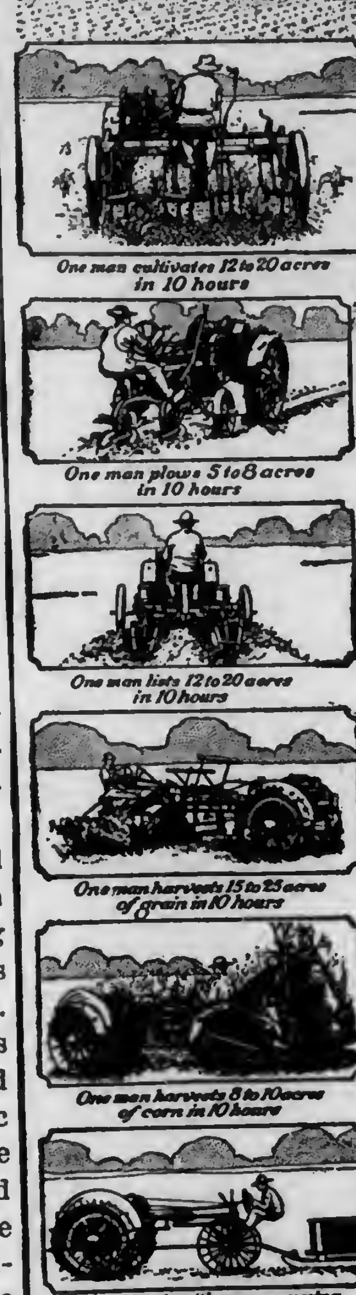

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"It Solves the Farm Help Problem"

More time is spent in cultivating than any other single operation. Sixty per cent of the crops grown on most farms are planted in rows which require cultivation.

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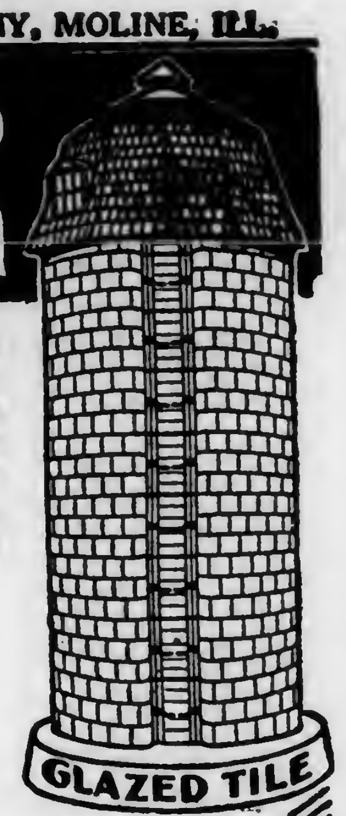

First Aid to Food Conservation

Even though tomorrow's sun should rise upon a world at peace it would still be your patriotic duty to conserve your grain crops because a war-weary and hungry world will look to America as a source of food supplies for many years to come. Foremost and essential aids to food conservation are the good, old reliable

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Kalamazoo Silos have grown steadily in favor for more than 27 years. As pioneers in the silo business we have seen many imitations spring up, and still the Kalamazoo is recognized as "The World's Standard" in quality, construction and valuable features.

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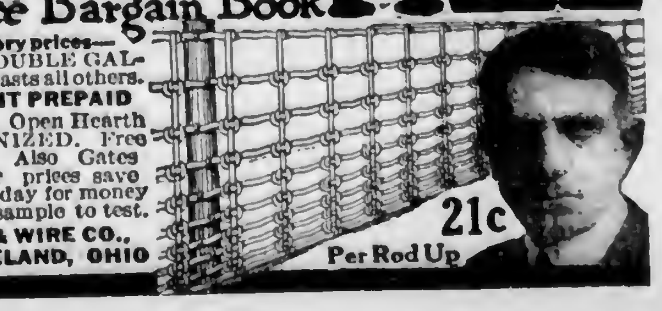

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You will like the look of the new Elcar models. The designs are original, different and strikingly graceful. The high-class paint work insures **lasting** beauty. Comfort and roominess are given special attention. Drive all day and you won't be cramped. Easy riding whether fully or partially loaded. Plenty of speed—abundant power for the hard pulls. The steering is the easiest—the control the simplest—the motor responsive and flexible.

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Don't think of choosing until you have seen the Elcar. Ask for nearest dealer's name, if you don't know him.

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Four-cylinder models, 37½ horsepower at 2,100 r. p. m. Six-cylinder models, 40 horsepower at 2,100 r. p. m. Two unit electrical system. Long wheel base, 116 inches; road clearance 10½ inches. Full floating rear axle with spiral bevel driving gears. Timken Roller Bearings front and rear. Double universal drive; tubular propeller shaft. A wonderfully easy riding semi-elliptic spring suspension. Roomy and comfortable bodies of beautiful design and durable finish; new "Cathedral Pipe" upholstering. Equipment complete, even to motometer.

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Because
The New Climax Grain and Clover Drill
sows more rows than drills with discs 7 or 8 in. apart

Thousands of farmers have increased their yields per acre with consequent bigger incomes from all fields sown with this drill. And you can do the same.

The New Climax Grain and Clover Drill sows more rows to the acre but fewer seeds to the row, resulting in stronger plants and a good seed saving on account of even distribution.

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Don't fail to get our prices and all the special details about this drill. It is equipped with complete outfit for all kinds of grains and grass seeds, with or without fertilizer attachment. Sows seeds and fertilizer in rows only 4 inches apart. For Wheat, Oats, Barley, Rye, Soy Beans, Alfalfa, Red Mammoth, or Japanese Clover, Timothy, Orchard Grass, Cow Peas, etc. Sows less seed to the furrow but drills more furrows. Only two horses required. **This drill will sow clover or any other small seed in the growing wheat without injury to the wheat.** And because of a strong lifting spring which aids the lever, even a boy can easily and quickly raise the discs out of the ground when required.

Costs no more to sow with this drill than with any other. It means bigger crops and, therefore, more money without any additional labor.

Don't fail to get full information about the New Climax Grain and Clover Drill before you start your spring work. Mail the coupon now for special information.

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What 15c Will Bring You from the Nation's Capital

Washington, the home of the Pathfinder, is the nerve-center of civilization; history is being made at this world capital. The Pathfinder's illustrated weekly review gives you a clear, impartial and correct diagnosis of public affairs during these strenuous, epoch-making days.

The little matter of **15c** in stamps or coin will bring you the Pathfinder **13** weeks on trial. The Pathfinder is an illustrated weekly, published at the Nation's center, for the Nation; a paper that prints all the news of the world and tells the truth and only the truth; now in its 25th year. This paper fills the bill without emptying the purse; it costs but $1 a year. If you want to keep posted on what is going on in the world, at the least expense of time or money, this is your means. If you want a paper in your home which is sincere, reliable, entertaining, wholesome, the Pathfinder is yours. If you would appreciate a paper which puts everything clearly, fairly, briefly—here it is. Send **15c** to show that you might like such a paper, and we will send the Pathfinder on probation 13 weeks. The 15c does not repay us; we are glad to invest in new friends. **THE PATHFINDER, Box 78 Washington, D. C.**

WHAT YOUR OLD BAGS WILL BRING YO

We pay for sound or mendable 100 lbs. Feed Bags, 10c each; 150 and 200 lbs. Bran, 15c each; Phosphate bags (not rotten), 8c each. We can use any size, any quantity. We pay freight and send returns promptly. Try us. Write to-day for tags and shipping instructions.

BUFFALO BURLAP CO., BUFFALO, N. Y.

Poultry

DOES POULTRY PAY NOW?

At the present time most all the farm journals and city publications are encouraging the farmer and poultryman to raise more chickens and produce more eggs. It seems to us that these advisors and writers have not given the subject thoro consideration because we find that just now and for the past three months our poultry has not paid for their feed, let alone the cost of labor. We feel that our poultry could not have better attention as our poultry manager is very persistent and spends his full time and energy in caring for the flock and has followed closely the teachings of such poultrymen as J. T. Campbell, who was present and directed the building of our first colony house.

Under the present feed conditions it is almost impossible to buy anything like a balanced ration for our fowls and we feel that we ought to be in as good circumstances to buy feed as any farmer as we are shareholders in one of the largest farmers' co-operative societies in the state, doing a business last year of over $200,000. Also, for the last 6 months it has been impossible for us to get corn in any form in quantities worth while. Ear corn has not been on the market at all until the last week and in small quantities at $2 per bushel. Cracked corn at $4.10 per 100 pounds; meat scrap, $5.50; wheat bran, $2.40; wheat, $4; scratch feed, composed of oats or speltz, wheat and buckwheat, at $4.

We raised 300 bushels buckwheat by weight and the best price we could obtain was $3.25 per 100 pounds and the local price is $3. Oats can be bought for $2.50 per 100 pounds. The government has fixed the price of wheat to the farmer at $2.20 per bushel or $3.66⅔ per 100 pounds. There has been a great many tons of this scratch feed sold in this section and there are times when it is almost impossible to get any other feed. The local dealers are taking the prices paid to the farmer for his grain and are making a profit of $1.16 per hundred, using 10 percent wheat and equal parts of oats and buckwheat and it seems to us that this profit would make the feed business a very profitable one.

According to the daily paper, eggs have been quoted in New York City at from 68 to 76 cents per dozen for the last two months. This, compared with former prices for the same period, looks very attractive to the uninitiated. The express company owes us for eggs, broken and not delivered, since April, 1917. But since January 1, they are not responsible for anything. The last case we shipped to New York was six days in transit and when received was in a damaged condition. We shipped a case to a lady in New Jersey and after ten days received a letter from her saying the eggs had not been received.

I feel that we have as fine a flock of White Leghorns as can be found any place. The eggs are carefully selected and will weigh from 24 to 26 ounces to the dozen. Eggs that will not weigh this, or are not chalk white in color, are saved and sold as seconds; are always packed in excelsior, the cases well-wired and destination marked on both ends of the case. The price that we have received after they have passed thru the hands of the commission men is 61½ cents per dozen. The actual cost of producing our eggs for the month of December was 81½ cents per dozen, and for January, 95 cents. The loss for these two months foots up to more than $100. We have not enough private customers to use all the eggs we produce.

I do not see anything encouraging to the producer when considering these conditions, and we would like to ask these people who are doing so much writing and talking along this particular line, what are we going to do with our eggs? Some of these people have gone so far as to call the farmer a slacker in this great world crisis. They say the trouble with the farmer is that he does not produce anything; that he does not keep enough stock, poultry, etc. We have upon our farm of about 200 acres, 41 head of horned cattle, 12 swine, 650 chickens, 5 horses and a tractor engine. Our family consists of eight people and there is the tenant house and a married man by the year. After March 22 this man leaves me and all the help that we will have upon the farm is our five children, the oldest one 12 years of age. Last year we raised all the roughage to winter our cattle. All the corn went into the silo with the exception of about 100 bushels, and there was about 600 bushels of grain. We had a very poor year owing to the cold, dry spring and wet, warm weather at harvest time. For the last eight years, up to this winter, I have spent from one to three months doing institute work for the Department of Agriculture, but right now we need more workers and fewer advisors and for this year, and as long as this war continues, I want to say to all who dub us slackers, at any time that they come to Troy, Pa., and drive four miles down Sugar Creek to Bono Farms, they will find us all in working attire, not only 6 days a week but seven; but still not forgetting our Creator and doing our bit to help win the war for Uncle Sam. — Leon O. VanNoy, Bradford Co., Pa.

THE INTERIOR OF THE POULTRY-HOUSE

The poultry-house ought not be used as a storage-room. The hens are entitled to every bit of the floor-space. The food-hoppers, drinking-vessels, etc., ought to be set on a low table or on a platform that extends from the wall. The advantage of this arrangement is that the hens not only have all the floor-space, but that the food and water will keep clean. Fountains and food-hoppers on the floor of the house soon become scratched full of litter and filth and the food and water they contain become a menace to the fowls.

Dropping-boards ought to be installed. The dropping-boards should be against the rear wall and should be eighteen inches or two feet above the floor. The boards should slope slightly toward the front in order to facilitate cleaning. Dropping boards should be cleaned at least three times a week. Daily cleaning would be better. An accumulation of manure beneath the hens, breeds disease germs and lice, and keeps the house damp. If one cannot clean the boards it would be better to dispense with them and permit the droppings to fall in the litter.

The nests ought to be arranged under the dropping boards or along the wall. If placed along the wall, each row of nests should be provided with a cover, hinged to the wall. The cover should slope so sharply that the hen can find no foothold. The cover should be raised in the morning but lowered toward evening. Nothing is more exasperating than making the rounds of the houses at night and removing hens from the nests to the perches.

A good arrangement for nests is to have them outside the building. A long, box-like affair, divided by partitions, should be attached to an outside wall of the house. Openings should be cut thru the wall of the house, leading into the box. The nests should be provided with hinged covers, covered with a good grade of roofing paper. The advantages of such nests are: They take up no room; they are dark, and for this reason discourage egg-eating; the eggs can be gathered without entering the house.—T. Z. Richey.

THE BROODER AS A CHICK RAISER

The brooder, like the incubator, is a simple machine. It is intended to raise the chicks that have been hatched either by an incubator or by hens. If the chicks have been hatched by hens great care must be taken to thoroly dust them with insect powder, so that they shall not carry into the brooder the lice which they have inherited from the hens. For they always get a few or many and lice multiply rapidly. If the chicks are hatched in an incubator they are free from lice when placed in the brooder; and that is nearly half the battle in raising chicks. Start with a clean sheet. In any case it is easier to drive lice out of a brooder or a brooder chick than it is from a hen, or a hen-raised chick, and economizing of labor counts in the "chicken business". The brooder can be fumigated; every vestige of life removed (move the chicks first of course), while it is next to impossible to get rid of every louse on a hen.

Therefore, use a brooder to brood your chicks.

There is nothing very wonderful about the fact that to raise chicks requires similar methods to those required to hatch them, namely the utilization of heat and ventilation; the only difference being in the quantity of each that is required to be applied. For that reason brooders are constructed simply, and are easy to operate.

When preparing to raise chicks in a brooder all you need to do is to "heat up" to the correct temperature, and when it is heated put in your chicks direct from the incubator. Of course, you will have spread chaff, or a substitute, over the floor of the brooder—and it is a good idea to add a little sand for the chicks to pick at.

Don't bother your head about furnishing food for the chicks for a couple of days after they are hatched. They need no food at that time and are better off without it.

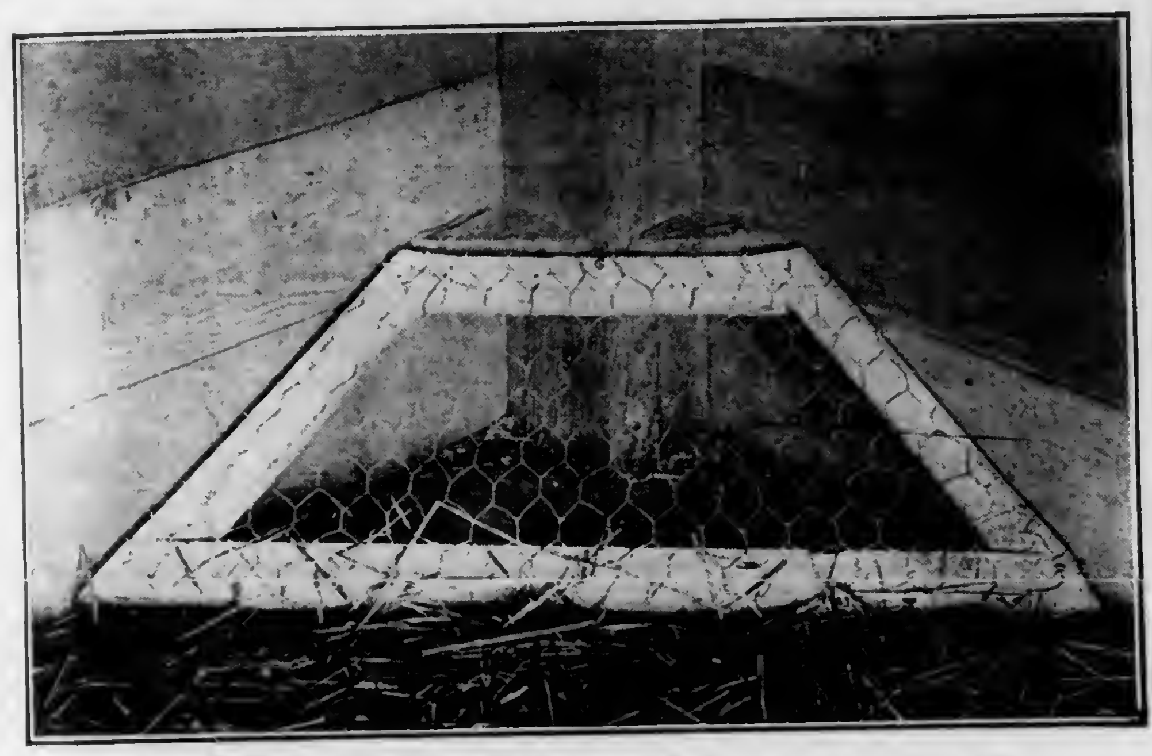
When the little wing feathers begin to appear, which will be within a week, drop the heat in the brooder to 85 degrees; and in a few more days to 80, and increase the ventilation.

Now all this appears very simple, and it is. The brooder will do its part if you do yours. And your part is to use your good judgment with the chicks in a brooder, as you would have to do if they were under a hen; only with the brooder you have less to do and less to worry about.

SIMPLE DEVICE TO PREVENT CHICKS CROWDING

Unless some means is used to prevent them from so doing, chicks will often crowd into the corner of the brooder house in such a way as to smother each other.

Some such simple device as that shown in the illustration will prevent chicks from huddling together in the corner. It consists merely of a frame constructed to fit the corner of the brooder house, to which is tacked chicken wire.



Corner of Brooder House Cut Off To Prevent Crowding

This device which is easily made and effective is used in the brooder houses of the Pennsylvania State College School of Agriculture.

DUSTING PROTECTS POULTRY

If the hens on some farms are examined after they have spent a month in winter quarters many of them will show lice altho none were present in the fall when they came from the range. Then look for the dust box and usually none will be present. The hen undoubtedly fights lice very successfully if she is given ideal conditions for dusting herself.

When we dust a hen with insect powder for lice we do it to fill up the breathing pores of the pest and thus destroy it. In the same manner the energetic hen in the dusting box enjoys her bath and kills pests at the same time. The farmer who makes a good dust bath for the hens when they go into winter quarters will find that the birds keep in better condition during the winter and there will be more profit for the work expended in their care. It also pays to keep a reserve supply of dry earth in some shed or colony house so that the supply of earth in the dust box can be replenished before spring.—R. G. K.

Better Apples— More Money

Worms and caterpillars — bad as they are — are not the cause of all poor fruit.

Apple scab, blotch, sooty fungus, bitter rot and cedar rust, attack the fruit and cause damage running into millions of dollars every year. You spray to kill the worms. *How about the diseases?*

You can protect fruit from worms and disease by spraying with Pyrox. One preparation does both.

It does more. Pyrox by invigorating the foliage, causes the fruit to hang on longer, so that it takes on size, finish and quality — what the market wants and will pay for. If you want the best price you must grow the kind of fruit the market demands.

Pyrox
REG. U. S. PAT. OFF. TRADE MARK REGISTERED

"Fills the Barrel with the Apples that Used to Go on Top"

"With 50 cents worth of Pyrox we got $22.50 worth of fruit where we grew only $2.90 worth before using it," writes a Pennsylvania grower. "From one orchard I used to sell about $1500 worth a year. The year I began to use Pyrox my sales went up to $5400. Can I afford NOT to use it?" said a fruit grower at a N. Y. State fruit growers' meeting.

Fifteen more Perfect Apples on the Tree will Pay for all the Pyrox Needed

Send for the new Pyrox Crop Book. You will be interested in the spraying methods used by practical growers in getting profitable crops. If apples are your specialty, you will want to read the experience of representative growers who use Pyrox and *make apples pay.* This book also contains spraying hints on many fruits and vegetables.

Bowker Insecticide Company
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Biggest Hatches Strongest Chicks
That's what you will get with my Hatching Outfit—and I can prove it.

The whole story is in my big catalog, "Hatching Facts", sent Free. It tells how money is made raising poultry. Get this Book and you'll want to start one of my Guaranteed Hatching Outfits making money for you. It's good patriotism and good business to raise poultry this year, and

$8.95 Buys 140-Egg Champion Belle City Incubator

Prize Winning Model—Double Fibre Board Case, Hot-Water, Copper Tank, Nursery, Self-Regulated Safety Lamp, Thermometer Holder, Egg Tester. With $5.25 Hot-Water, Double-Walled, 140-Chick Brooder, both only $12.95

Freight Prepaid
East of Rockies—allowed towards Express and to points beyond.—I ship quick from Buffalo, Minneapolis, Kansas City or Racine. Used by Uncle Sam and Agr'l Colleges. With this Guaranteed Hatching Outfit and my Guide Book for setting up and operating you can make a big income. And my

Over 650,000 Users

Special Offers Provide Ways for You to Make Extra Money

Save time—Order Now, or write today for my Free Catalog, "Hatching Facts"—It tells all. Jim Rohan, Pres.

Belle City Incubator Co., Box 68 Racine, Wis.

Make This Your Money Year

POULTRY and eggs are going to be the big money-makers this year. Hoover is beseeching little and big poultry raisers to double—triple—quadruple their products. We should raise twice as much poultry and eggs as we did last year. And prices will remain high—and go higher. The demand will take care of that. Why, New York City alone consumed annually One-Half Billion More Eggs than the greatest egg-producing state in America yielded last year! Get wise. Get hatches started quick! Plan for bigger hatches of better chicks. Get a hatch-increasing wonder—a

1918 X-Ray Incubator
Combines 20 Exclusive X-Ray Features. Completely hatches on only one filling oil during entire hatch. Duplex Central Heating Plant—directly underneath, gives natural, moist mother hen heat. X-Ray Automatic Trip regulates flame—no chilled eggs — no overheated sides. Read all about its 20 remarkable hatch-increasing, labor, time and money-saving features—and remember, it is shipped

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Write for 1918 Book FREE

CHICKS S. C. W. Leghorns from vigorous business bred hens that have lop combs, long bodies, deep egg baskets. The profitable kind. Get our prices.
GUY A. LEADER, Rt. 2 York, Pa.

O. I. C. Pigs
Three extra fine litters, brood sows to farrow in April and May. 2 boars ready for service. Overstocked, they must move quickly. *Write at once.*
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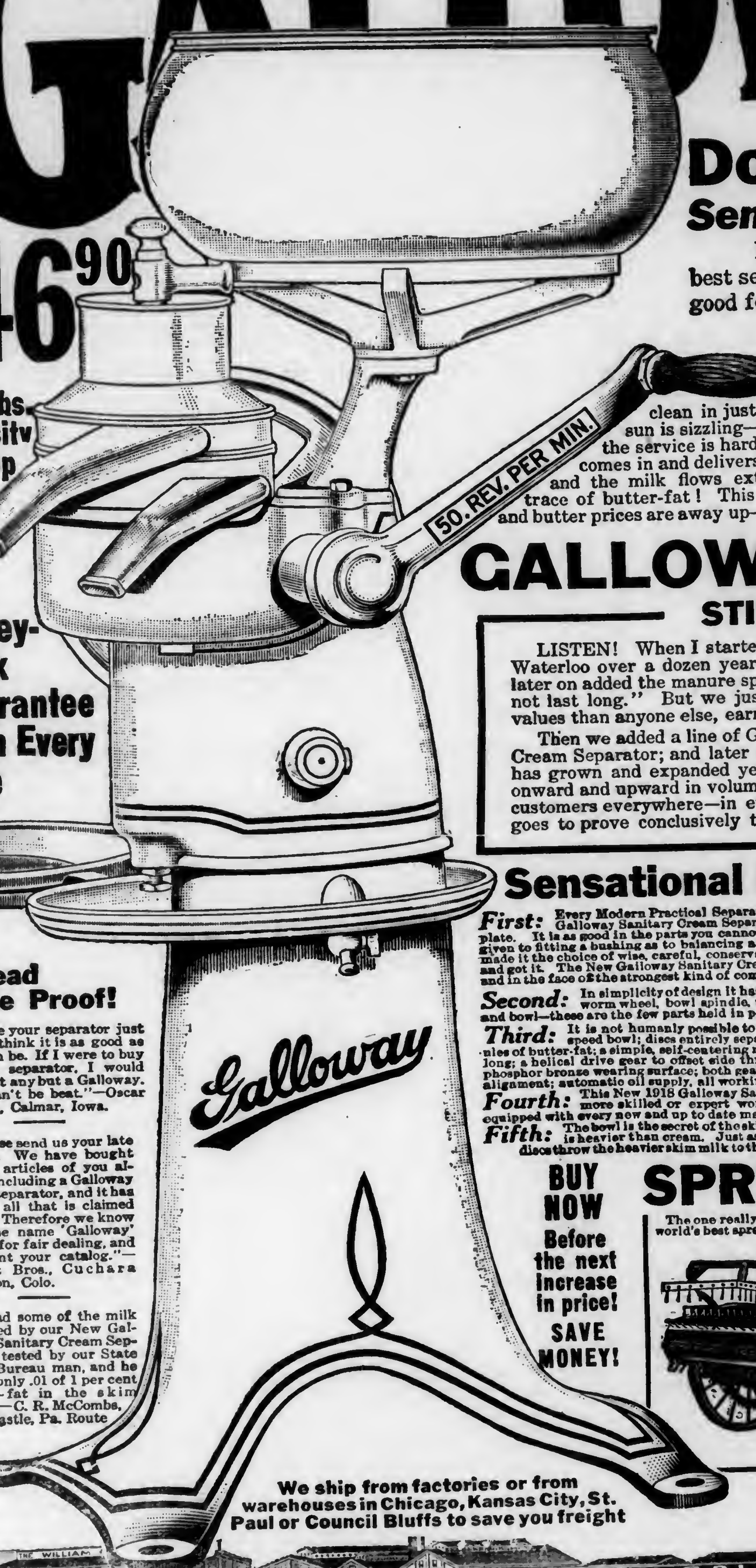
Hatching Eggs S. C. White and Buff Orpington and Black Minorcas. 15 for $1.50; 50 for $3.50. Postpaid. W. J. Widney, Doylesburg, Pa.

$600. IN 10 MONTHS
from $40 Invested in Hillpot Quality Chicks
is the record of one of our customers. Only one of many cases which prove that it pays to get our sturdy, strong, well hatched chicks from heaviest egg-laying strains.
Leghorns - Barred Rocks - R. I. Reds - Wyandottes
Prices right. Full count and safe arrival guaranteed.
Valuable book FREE
W. F. Hillpot, Box 28, Frenchtown, N.J.

GALLOWAY'S S ATIONAL S NITARY SEPARATOR



$46.90

375 lbs. Capacity and Up

Money-Back Guarantee With Every Sale

Send for My Book

Don't Buy a Separato til You Get Galloway's Proposition!

Send the Coupon Today for My Ne 8 Book About this New Sensational Sanitary Separator!

Here is my Masterpiece of separator manufacturing, the desig struction of which is the accomplishment of years of experience and the best separator designing brains that money would buy—a separator alone—a separator that invites comparison—that has built into it all the good features of other separators combined in this one perfect, mod separator that is so good mechanically that it is **positively sensational!**

It is sensational in its perfect construction—it is sensational in rown away. These are times when you must get the best clean skimming efficiency—it is sensational in its simplicity of oper made. This is no time to take chances in buying. If you tion—it is sensational in its easy cleaning features—it is sensatio g time, effort and cream by the old-fashioned gravity methods in its strong durability—and best of all, it is sensational in pri ing—or by using an out-of-date machine—**stop it**, and get a way Sanitary model. It will actually pay for itself the first

Remember, my New Sanitary model is not a machine that skin the extra amount of butter-fat it will save for you. If you clean in just certain seasons, but every day, winter or summer, below zero or when t an old-style separator that wastes cream, dispose of it, and sun is sizzling—it skims close, right down to the last drop. It shows its quality best wh Galloway Sanitary. It will stop the loss and save you money the service is hardest and the demands are greatest! That's where my New Sanitary mo For twice-a-day, every-day-in-the-year skimming, there is no comes in and delivers 100% skimming service. And in summer, when the cows are in the fie that can beat the New Galloway Sanitary model. Because of and the milk flows extra heavy, you can depend on this New Sanitary model to skim out eve lean skimming efficiency, it will make you money every day trace of butter-fat! This is the year that you must get every ounce of butter-fat in the milk! Cre se it, in both prosperous and economical times. and butter prices are away up—likely to go higher—the least butter-fat wasted means just that many go

Another thing: Conditions now on raw materials, deliveries, and prices were never so uncertain. If ever there was a time to plan ahead and get your orders in early, **this is the year!** In our manufacturing business we are now contracting for materials to be delivered next fall! We have to do it. We buy early to **protect ourselves**, and we advise you to **buy early and protect yourself.** A little careful, early planning has saved many a man real money, and this is the year when you will save more than ever before by buying early!

And don't forget that when you consider the present **high prices** of live stock, corn and other farm produce, compared to the present low price of my New Sanitary Model Separator, you are buying it at a figure that is **actually lower than ever!**

GALLOWAY IS STILL ON T JOB "DIVIDING THE MELON"!

STILL DOING BUSINESS AT THE OLD ST -STILL SAVING MONEY FOR MY FARMER FRIENDS!

LISTEN! When I started in the manufacturing business in a small way in Waterloo over a dozen years ago selling a small article—the harrow cart—and later on added the manure spreader, some of the wise ones said: "Galloway will not last long." But we just kept sawing wood, and giving the people bigger values than anyone else, earnestly trying to make our products better.

Then we added a line of Gasoline Engines; then came the Galloway Sanitary Cream Separator; and later on the Galloway Efficiency Tractor. Our business has grown and expanded year after year, and in spite of conditions has moved onward and upward in volume—winning us thousands upon thousands of satisfied customers everywhere—in every state in the Union and in Canada. This only goes to prove conclusively that our plan of manufacturing and selling **direct to the user** is absolute rrect.

And while it is t strenuous times on different occasions to fill orders promptly, with the tremendous demands made upon us, still we have been our organization two features that stand out stronger than ever t **shipments**, and our new **Service Department**, to take care of rep o that if you would wire us for something today it is on the way to day we get your wire. This has only been accomplished by tim rk. For example: Today we have in our warehouses, made up, rea the orders come in, over 5,000 cream separators. We couldn't do this rs we manufactured cream separators or other lines, but this is one d experience has accomplished. From present indications there is going to be the biggest demand in our history for Galloway goods this spring, and my personal advice to you is that if you are going to need anything in our line to write us early, because there are two big things to guard against—additional raise in price, and inability to deliver the goods promptly a little later on.

We have made special arrangements this year so that you can order now a Galloway Separator, Manure Spreader or engine, and **pay for it after next harvest.** Write today for our special proposition. If you have never bought from Galloway there never was a better time to get acquainted than right now. Come to Waterloo and see our factories as pictured in the lower left hand corner. You will be welcome. You will be taken care of. Your visit will be appreciated by our men and by me personally.

Wm. Galloway

Sensational Features of the New Galloway 1 nitary Separator,

First: Every Modern Practical Separator Improvement Known Embodied in This Machine. The New Galloway Sanitary Cream Separator is simpler than Simple Simon, and is as sanitary as a dinner plate. It is as good in the parts you cannot see as in the ones you can see. The same expert attention is given to fitting a bushing as to balancing a bowl. These and many other equally important features have made it the choice of wise, careful, conservative and discriminating separator buyers who wanted the best—and got it. The New Galloway Sanitary Cream Separator has won its place at the front by force of its merit, and in the face of the strongest kind of competition.

Second: In simplicity of design it has no equal. Only few working parts, a main drive gear and pinion, worm wheel, bowl spindle, upper and lower bowl-spindle bearings, handle and clutch case and bowl—these are the few parts held in perfect alignment by the gear case casting.

Third: It is not humanly possible to build a cream separator that is mechanically more perfect—low speed bowl; discs entirely separate from each other, no raw, sharp edges to break up the globules of butter-fat; a simple, self-centering neck bearing; crank shaft of high-carbon steel in bearings 2½ in. long; a helical drive gear to offset side thrust of the worm wheel, lessens friction; large worm wheel with phosphor bronze wearing surface; both gear shafts and bowl spindle bearings supported by one case, perfect alignment; automatic oil supply, all working parts in an oil spray.

Fourth: This New 1918 Galloway Sanitary Separator could not be built from better materials nor by more skilled or expert workmen, nor in a more modern chain of factories, thoroughly equipped with every new and up to date machine.

Fifth: The bowl is the secret of the skimming efficiency of the New Galloway Sanitary Model. Skim milk is heavier than cream. Just as soon as the milk enters the bottom of the bowl the skimming discs throw the heavier skim milk to the outside of the bowl and squeeze the butter-fat toward the center. The dividing disc which fits into l shell keeps the skim milk and the butter-fat apart. The skim milk is then passed up th wl and discharged. All the milk gets the full skimming force of the bowl and is perf that each disc gets its full share to skim. The top of the bowl never floods and there ar currents at the bottom. These are the secrets of its perfect skimming efficiency, winte er what the weather or feeding condition of your herd.

Sixth: The New Galloway is cause of the big, roomy, one-piece supply can without seams. The bowl is w er corner, making it positively impossible for separator refuse to collect. Every bi r in the milk is held, so that both cream and milk are cleaner than when they were put i sanitary. It touches the floor at the points necessary to give it a firm foundation, maki an or sweep under. The women folks like the New Galloway Model because of its features.

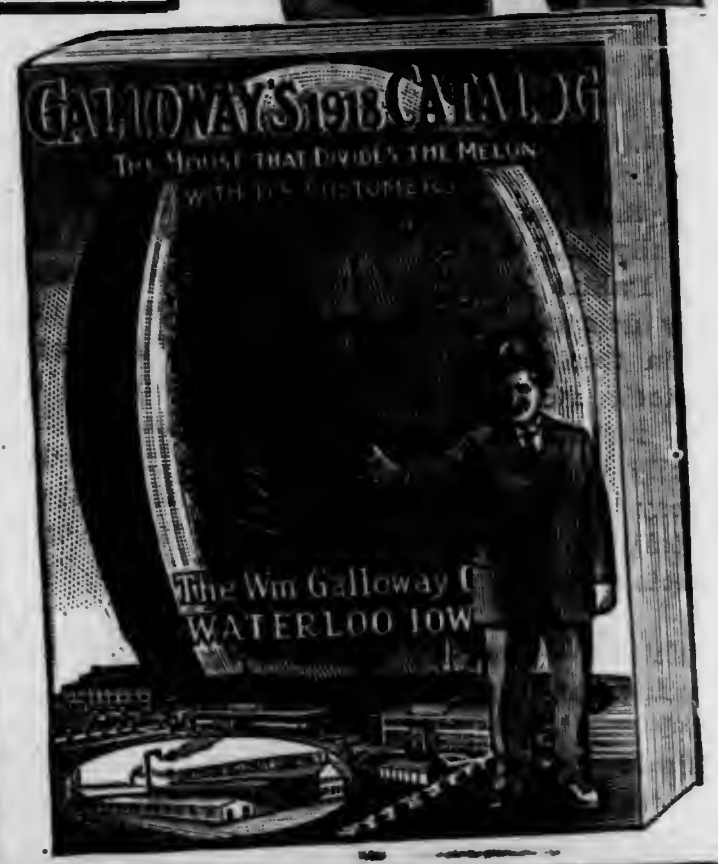
Seventh: The New Gallow r is very easy to operate because of a number of new and splendid me First of all, it is a low speed type, with only 50 revolutions per minute, which in turn re 0 times. The crank shaft is just high enough so that in turning you can use the weight t possible advantage with the least strain on your arms. The women on the farm li y because of its easy running. The cream pail shelf and drip pan are combined in one ged that they can be easily raised and lowered. This feature adds to the ease of operat ninety-day trial in your own dairy, or 180 milkings, and you will marvel at the ease Sanitary operates.

Eighth: Every size of this nteed to skim up to its rated capacity. We have not overrated any of r to make the price **seem lower.** If you buy a New Sanitary and it does not skim ap don't keep it. If we claim the New Sanitary will do anything that it will not do, you than the 90 days' trial on which we sell it.

BUY NOW!—Pay Next Fall After Harvest!

Get your separator now when you need it. Begin the big cream saving it will make at once! Don't delay getting the implements you need because of money matters, for I have arranged my easy buying plans on purpose to accommodate responsible farmers.

On my principal manufactured lines, Separators, Engines and Spreaders, I offer your choice of five easy buying plans and terms, one of which will surely suit you. You can buy for Cash, Bank Deposit, Part Cash and Part Note, All Note, and Installment without interest. So buy now and get your Galloway Separator, Engine or Spreader while you need it and pay for it later after you sell your crops or with the savings these implements earn for you. Some farmers may not be worth as much as others in dollars and cents, yet if they are responsible the amount of their wealth does not make much difference. It is integrity that counts. Good credit is capital. Ask about these buying plans now.



Read the Proof!

"I like your separator just fine. I think it is as good as they can be. If I were to buy another separator, I would not want any but a Galloway. They can't be beat."—Oscar A. Vick, Calmar, Iowa.

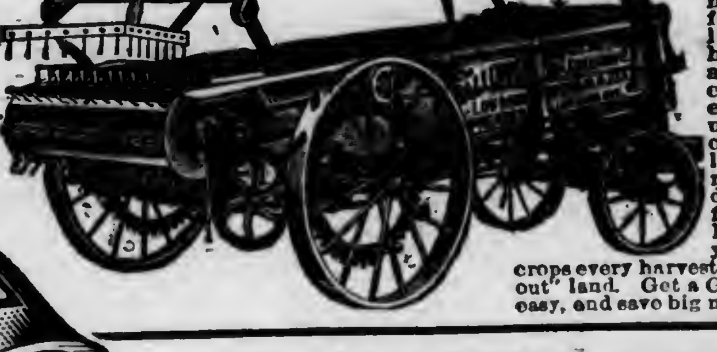
"Please send us your late catalog. We have bought several articles of you already, including a Galloway cream separator, and it has proven all that is claimed for it. Therefore we know that the name 'Galloway' stands for fair dealing, and we want your catalog."—DeWitt Bros., Cuchara Junction, Colo.

"I had some of the milk skimmed by our New Galloway Sanitary Cream Separator tested by our State Farm Bureau man, and he found only .01 of 1 per cent butter-fat in the skim milk."—C. R. McCombs, New Castle, Pa. Route No. 2.

BUY NOW Before the next increase in price! SAVE MONEY!

SPREADERS MY NEWEST LOW DOWN NO. 8 MODEL

The one really advanced spreader of the year. It has embodied all the prime features of the world's best spreaders. Every new and practical spreader improvement is now on the new Galloway No. 8 Model. It is low down. Easy to load. Front trucks cut under. You can hitch close to load. Its perfect construction makes it light draft. Two horses can handle it easily. V Rake and steel beater make for even spreading. The toughest lumps are broken up and uniformly spread. Clean out push board. Empties load thoroughly. Has automatic stop. Steel tongue, double chain drive; spreads from 4 to 24 loads per acre. Remember, spreading is your big hope for bumper crops every harvest. Spreading renews "worn out" land. Get a Galloway and make the job easy, and save big money besides.



ENG

STATIONARY OR PORTABLE 1¾—16 H. P.

When labor i riced, you should plan to meet these conditions with a mechanical pow Engine to do the work. It is economical, reliable, steady and costs nothi or room. There is a Ga built for your purpose alloway is standardized a Develops way above the Has big bore, long stro and saves fuel cost. Lar lanced fly wheels; Webste supplies blue-hot spark, ries. Make and break fire, easily start der and water p way engines are in Galloway facto rated. You get the when you invest make complete in three sizes, 6, 9 a plied with eithe rene engines. These saw rig ou ctical feature and are the best ever offered at the price. A

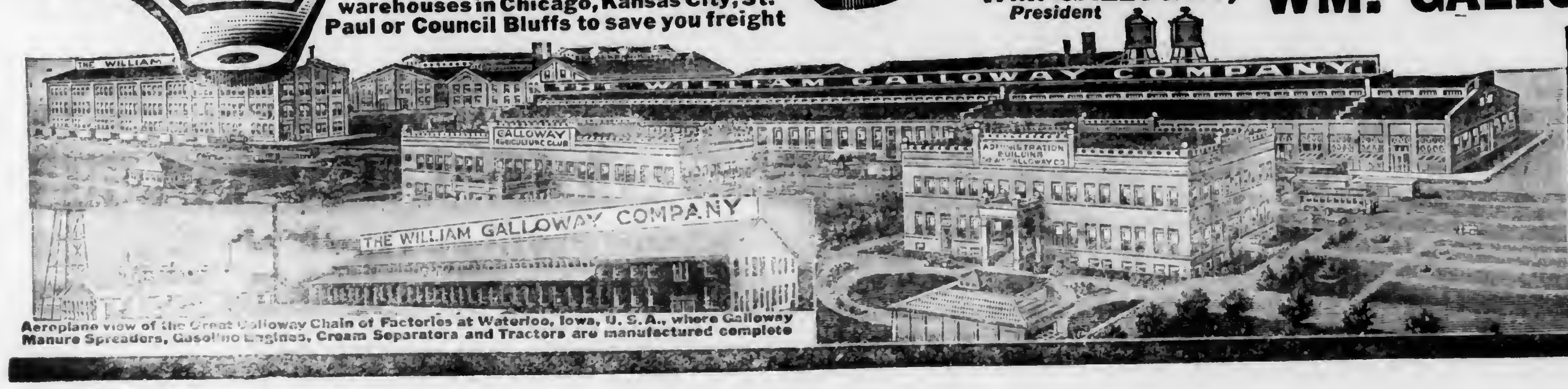
TRACTORS

GALLOWAY'S EFFICIENCY — 12-20 SIZE
BURNS EITHER KEROSENE OR GASOLINE

The great new Galloway Tractor is built like an automobile. It has anti-friction bearings. Twenty-one sets of Hyatt roller and ball-bearings save the engine's power for the draw-bar and the pulley where the power is needed. Dynamometer tests show Galloway Tractor to take only 13⅓% of the engine's power to pull the tractor without implement. This is about ⅓ to ½ the power required by other tractors. Has a four cylinder valve in the head, modern motor, water cooled. Exclusive patented transmission. Will pull three 14-inch bottoms 8 to 9 in. deep in clover or timothy sod. Will do any portable engine job—sawing, silo filling, corn shelling, shredding, handles a 28-in. grain separator, any kind of feed grinder, pumping or irrigation plant. Double chain drive. State whether kerosene or gasoline burner is desired.

We ship from factories or from warehouses in Chicago, Kansas City, St. Paul or Council Bluffs to save you freight

WM. GALLOWAY, *President* **WM. GALLOWAY PANY, 197 Galloway Station, WATERLOO, IOWA**
FARM IMPLEMENT MANUFACTURING SPECIALISTS!


THE WILLIAM GALLOWAY COMPANY
GALLOWAY AGRICULTURE CLUB
ADMINISTRATION BUILDING
THE WILLIAM GALLOWAY COMPANY

Aeroplane view of the Great Galloway Chain of Factories at Waterloo, Iowa, U. S. A., where Galloway Manure Spreaders, Gasoline Engines, Cream Separators and Tractors are manufactured complete

Win-t r Garden $1.00

Biggest and ver Made

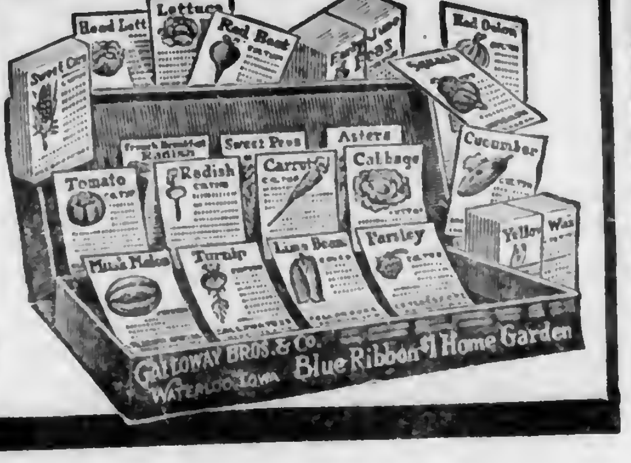
Food will win our own gr l help toward vic famous W r Garden is especi ave you h l Besides, this sup ortment w l make you an an alloway Br s. pure tested seed

Order Direct ertisement

Pin a dollar b we will se l you postpaid the ction pictur d here; a quantity ed, profital e seed for a garden ficient to su ply a family of tables during spring summer today. Get yours before the be ready the instant planting if not satisfied.

HERE ARE THE SEEDS
Included in This Great Dollar War Assortment

- One Box Sweet Corn (Golden Bantam)
- One Box Beans (Golden Wax)
- One Box Peas (Excelsior)
- One Pkt. Lettuce (Big Boston)
- One Pkt. Lettuce (Summer Favorite)
- One Pkt. Beets (Little Gem)
- One Pkt. Tomato (Ponderosa)
- One Pkt. Muskmelon (Rockyford)
- One Pkt. Radishes (Sparkler)
- One Pkt. Radishes (French Breakfast)
- One Pkt. Turnip (Snowball)
- One Pkt. Carrot (Danvers Half Long)
- One Pkt. Beans (Dreer's Bush Lima)
- One Pkt. Cabbage (Copenhagen Market)
- One Pkt. Parsley (Moss Curled)
- One Pkt. Cucumber (Improved Long Green)
- One Pkt. Onion (Red Globe)
- One Pkt. Squash (Warted Hubbard)
- One Pkt. Sweet Peas (Giant Flowers)
- One Pkt. Asters (Giant Victoria)


Galloway Bros. & Co. Waterloo Iowa
Blue Ribbon Home Garden

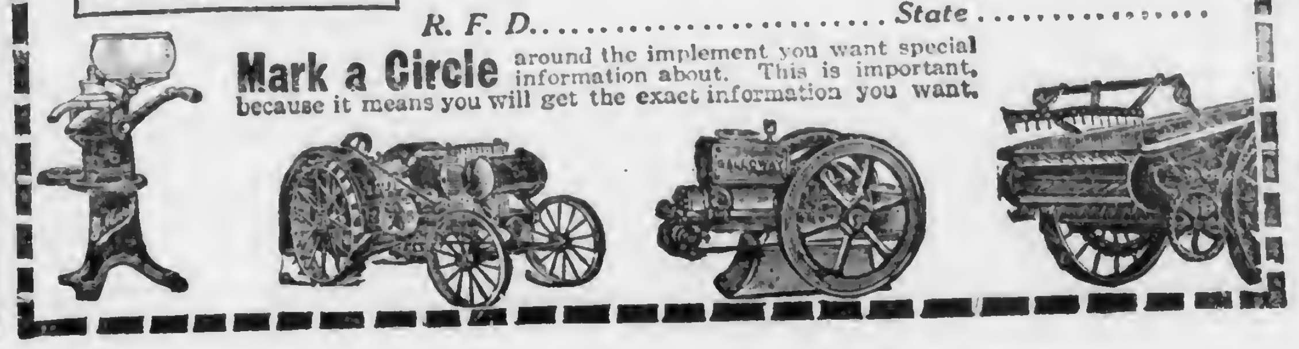
MAIL THIS COUPON TO-DAY!

WM. GALLOWAY, *President*
WM. GALLOWAY COMPANY, 197 **Galloway Station, Waterloo, Iowa**
Send me the Spring Edition of your 1918 Book.

If you want the 1918 Seed Book mark cross here. ☐

Name ....
P. O. ....
R. F. D. .... *State* ....

Mark a Circle around the implement you want special information about. This is important, because it means you will get the exact information you want.



Farm Products Prices and Prospects

NATION'S 1917 TOMATO PACK

Complete reports for 1917, secured by the U. S. Food Administration, give the total pack of canned tomatoes as 15,076,074 cases of two dozen cans each. This is the largest amount packed since 1914 and is equivalent to more than three cans of No. 3 size for every person in the United States.

Maryland, the principal tomato canning state, packed more than one-third of the entire amount; California ranks second and Delaware third.

The successful tomato crop is gratifying, since world conditions have reached the point where every kind of food is needed. The liberal use of fruits and vegetables, canned as well as fresh, will help conserve the staple foods such as wheat, meats, fats and sugar.

SOUTHERN TRUCK CROPS

The Assistant Truck Crop Specialist for the State of Florida reports as follows: The latter half of January was warmer than the first and crop conditions have improved. A frost on the morning of the 24th was general over the state. No extensive damage was reported. Cabbage is looking well. Early cabbage is moving while late cabbage is still being set out at a few points so that the season will extend thru April and possibly into May. Young and half-grown lettuce are in excellent condition. Of the more mature lettuce occasional frosted heads can be found, but the greater part of the crop now being moved shows no frost damage. Celery has been looking yellow, but during the past week has improved materially and is now in fine condition. Potato plantings have been greatly delayed. Some seed has arrived in frosted condition and when this stock was used fields have required replanting. Deliveries have generally been very late and while this may not affect the final acreage materially it will necessarily extend the periods of planting and harvesting.

Louisiana.—The leaf crops including lettuce and endive have not recovered from the freezes and it is now too late to plant again without interfering with the later crops of beans and corn. The generally moist and moderate weather has begun to show up in an improved appearance of the cabbage. Generally speaking, there is already a little improvement in this crop and with good weather now it should come on in fair shape.

Texas.—Dry weather is reported as retarding the planting of potatoes in the Eagle Lake-Wharton district, and unless rain is had soon the crop will be late. In the Lower Valley cold and cloudy weather following the freezes has been very unfavorable for all truck. Onions which were weakened by the freezes are being injured considerably by the thrips. Lettuce is growing slowly with small but firm heads. Potatoes are now being planted and the crop will be two or three weeks late. Some reporters say that young cabbage which was damaged very severely by the freezes is coming out better than expected, but others do not entirely agree on this point.

California.—The exceptionally dry winter in California has caused a number of unusually critical field conditions. At the season of the year when rainfall is most generally depended upon, it has failed to materialize in adequate quantity. The general results have been: Delays and difficulties in land preparation, very heavy use of irrigation water, weakened growth of dry land crops, extensive damage from aphis and cutworms, more trouble than usual from alkali on irrigated lands, a delayed start and retarded maturity of certain crops, and a reduction in the yield and quality of other crops.

BRITISH CONTROL OF FEED PRICES

The supposed maximum price for oil meal in Great Britain and Ireland is about $90 a ton. Nevertheless, an Irish farmer who wished to buy oil meal found that it was necessary to pay $125 a ton. Various authorities were complained to, but it seemed to be impossible to get any action on the matter. In the United States we now have a fixed price of $45 a ton for 36 percent cottonseed meal in the South, and are soon to have fixed prices for bran and shorts. Oil meal will doubtless be taken over as well. We wonder if the fixed prices will ultimately be anything more than paper prices, which will serve as a justification for the Food Administration lowering the prices of live stock products, notably dairy products. There is only so much bran, oil meal, cottonseed meal, etc., to go around. Dairymen and live stock feeders may be able to buy the various feeds at the fixed prices for a month or so, but we rather suspect that most of these feeders will very rapidly disappear from the market, and that the ultimate result will be that it will be impossible for the average man to buy these feeds at anywhere near the fixed prices.—Wallace's Farmer

BILLS TO INCREASE WHEAT PRICES

Reports from Washington to the effect that two bills have been prepared by Western Senators providing for an increase in the minimum price of wheat during the coming season to $2.50 to $2.75 attract considerable attention in the grain trade. It is to be expected that the question of fixing the price for next season will be shortly fought out in Congress and apparently the leading grain states are going to make an effort to have the price materially advanced over the past season's fixed level of $2.20.

FEED SUPPLY

A bulletin issued by the United States Food Administration says we have somewhere near the equivalent of 1,000,000,000 bushels feed more than last year, an increase of nearly 20 percent, for which we have no corresponding number of animals to feed. Our animals have not kept pace with the increase in concentrates, and we have much more feed than animals to eat it. The monetary interpretation of this situation must be that we will have a low range of prices for feedstuffs.

The foregoing very clearly substantiates the view we have entertained that prevailing high prices reflect an inequitable distribution rather than actual scarcity of grain, and now that the railroad situation promises to be at least partially adjusted we look for the market to seek a lower level.—Logan and Bryan in Price-Current.

VALUE OF FARM PRODUCTS

The value of farm products in the U. S. in 1917 reached the unprecedented total of $19,443,849,381 last year, an increase of more than $6,000,000,000 over 1916 and almost $9,000,000,000 more than 1915. The values reported by states by the Department of Agriculture, with the rank of the states, follow:

State	Value	Rank
Maine	$ 71,425,000	37
New Hampshire ..	25,748,000	46
Vermont	45,950,000	42
Massachusetts ...	69,106,000	38
Rhode Island	8,352,000	48
Connecticut	57,814,000	39
New York	417,798,000	12
New Jersey	103,895,000	34
Pennsylvania	412,394,000	13
Delaware	27,707,000	44
Maryland	123,879,000	31
Virginia	344,159,000	22
West Virginia ...	132,281,000	30
North Carolina ..	417,846,000	11
South Carolina ...	389,887,000	15
Georgia	542,733,000	6
Florida	104,771,000	33
Ohio	546,058,000	4
Indiana	503,154,000	8
Illinois	842,042,000	1
Michigan	356,265,000	21
Wisconsin	367,095,000	17
Minnesota	480,230,000	9
Iowa	783,488,000	3
Missouri	546,036,000	5
North Dakota	220,290,000	27
South Dakota	366,582,000	18
Nebraska	522,186,000	7
Kansas	399,844,000	14
Kentucky	375,710,000	16
Tennessee	290,819,000	26
Alabama	291,563,000	25
Mississippi	359,596,000	19
Teas	788,983,000	2
Oklahoma	329,579,000	23
Arkansas	359,538,000	20
Montana	103,845,000	35
Wyoming	52,829,000	40
Colorado	164,000,000	28
New Mexico	38,470,000	43
Arizona	27,068,000	45
Utah	49,627,000	41
Nevada	25,655,000	47
Idaho	94,890,000	36
Washington	144,422,000	29
Oregon	108,632,000	32
California	432,285,000	10
United States ..	$13,580,768,000	

HENS MUST LIVE TO LAY

As a part of the nation-wide drive to increase the supply of poultry and eggs this year, the U. S. Food Administration will endeavor to reduce the killing of hens and pullets and asks for the co-operation of the country toward this goal. Heavy market demands for poultry resulting from meat-saving efforts have occasioned attractive prices in practically, all markets. This, with the shortage of feed, has tempted flock owners in many localities practically to strip their farms of poultry, even with the heavy egg-laying season near at hand.

The practical certainty of continued demand for poultry products and the necessity of supplying it have led to a joint poultry campaign by the U. S. Department of Agriculture and the Food Administration. Stress will be placed on saving the hens that now remain on farms and encouraging a large increase in the number and size of flocks.

Poultry buyers under license by the Food Administration have been notified not to buy live or fresh killed hens or pullets until after April 30, 1918. The Food Administration is also requesting poultry eaters not to demand hens or pullets, except cold storage stock, but instead to demand roosters, cockerels and capons. It is pointed out that the average yield of spring eggs according to past experience will be about 80 percent of the meat value of the hens in the country. Furthermore, the cost of eggs produced in the next three months will be comparatively low on farms where poultry are permitted to forage freely.

Keep even the hen that hasn't "paid for her keep" during the winter months. Her carcass now will bring only a few cents more than it would last fall; under good management even old hens will produce some eggs and be useful for setting. Necessity for meat conservation has thrown an unusual responsibility on the poultry industry. Let the hens live and lay.

NEW ZEALAND'S WHEAT PRICE

New Zealand has decided to control the purchase and distribution of its new wheat crop. The maximum government price will be $1.41 per bushel. Latest estimates give the total amount of wheat land as 293,000 acres and the estimated yield, 30 bushels per acre. New Zealand has lately been importing wheat from Australia.

VEGETABLE SEEDS

The present supply of vegetable seed is seriously short and unless the planters send in their orders at once to their regular seed house for immediate shipment, they are not likely to get the seed they need. There may not be half enough seed to supply the demand for beans, cabbage, onions, peas, peppers, radishes, spinach, sweet corn, tomatoes and turnips. Besides the scarcity of seed, there is a shortage in fertilizers, manure, lime, packages, and spray materials. The needs of the commercial producers should have first consideration, because they will make the most efficient use of the facilities at their disposal. Do not order any more than you positively need. If you have any old seed on hand, it may be well to test its germination before buying more.

ECONOMICAL FARM POWER

HERE is the Farquhar Locomotive, a real general purpose portable Farm Engine. This outfit is universally known for its convenient handling qualities and durability. The Farquhar Cornish is an ideal Engine for sawmilling. It is an easy steamer, furnishing dependable power, using offal lumber and sawdust for fuel. In addition to the above we build a full line of Steam and Gas Tractors.

All Farquhar Boilers are now built in accordance with the A. S. M. E. Standard. Our Ajax Center-Crank Engine used on both Locomotive and Cornish Rigs, is of the self-contained plain slide valve type and produces maximum power with the least possible consumption of steam.

"Farquhar Engines and Boilers" is the title of a catalogue that has helped many to solve their power problems. This book sent free to prospective purchasers on request. Write now for your copy.

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We also manufacture Saw Mills, Threshers, Potato Diggers, Grain Drills, Cultivators, Hydraulic Cider Presses. Ask for literature.

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Send for this Book, quick!

It illustrates the different money-saving roofings we sell. Shows you how prepared roofings actually save money—how and why they *protect* your buildings. It tells how to measure for roofing and how its use makes your building *safer*. It also describes

WEBCO SUNSET ROOFING

which has been known in the East for nearly twenty years as an efficient, long-lived, strictly fine-quality roofing at a low price. We sell direct to the user and save money for you in many ways. Sample of SUNSET free on request. Send for it and examine carefully. Thousands of rolls of SUNSET sold every year. Perhaps your neighbor has it. A letter today brings immediate information.

Best 1-ply, $1.42—2-ply, $1.78—3-ply, $1.90

We sell the BUCKEYE Incubators and Brooders.

WEBBER LUMBER & SUPPLY COMPANY
51 THOMPSON ST., FITCHBURG, MASS.

8 HOURS WORK IN 4

In planting season when your time is worth money it is a big saving to be able to plow, disc, harrow and level your fields all at one time. This can be done with any plow you have, except walking, by attaching a

KRAMER ROTARY HARROW

and using the same power you had before. It makes a better seed bed also which means bigger crops. Write today for our new circular and prices. DEPT. 68

Kramer Rotary Harrow Co., MORTON, ILLINOIS

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MORE MONEY for tenant more money for owner, in our Active Fertilizers.
Just ask us for new booklet. Agents wanted.

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The Voice of the People

We propose to reserve this department for the use of our readers to discuss all problems and matters of general interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. It will be necessary to limit such articles to 200 or 300 words. Publication of an article in this department does not signify editorial endorsement.

TOO MUCH TALK

Serious Work to be Done

Mr. Hulsart, in your Feb. 2 issue, says that he is liable to fall on the safe side of the fence. Don't do it. Fall on the work side. I hope men "over there" won't see his statement. Eventually the law of supply and demand will save farmers. We are not the only ones hit by labor shortage. Railroads are paying good wages and are unable to get men in freight terminals or on track work. I know two divisions that generally have 300 men. Last season they only had about 30 men.

There will be profiteers and traitors, but we farmers are not in the grafters' class. Let us be men. Don't quit farming because you can not become a millionaire. We can protest. We must organize solidly and protest vigorously and get our rights. But we can not remedy the labor situation entirely. If nine-tenths of the population wish to make laws and munitions and live in cities, they are at the mercy of the other tenth. So raise the stuff. Make your own terms and enforce them.

We have a Federal Board of Farm Organizations, at Washington, doing good work so far. Help them. Do you know that the labor organization leaders at Washington during the recent wage conference were paid out of heavy assessments levied on the members of their organization? The Federal Board of Farm Organizations is not costing us much, but it is getting results.

Our friend from Schuylkill County, Pa., in Feb. 2 issue finds all kinds of fault with Mr. Houston but he missed the two good points: That of farm labor survey and the suggestion to put to work the men who never work and never will. Our opinions must be voiced in a crisis like this. The voice should not be raised in "captious criticism", but it is our duty to point out wrongs and demand their correction. No leader will ever be infallable. So stop indulging in generalities and turn your guns on non-essential business and demand that they be transferred to essential business and help win this war. Never mind the dollars.—A. R. S., Tompkins County, N. Y.

CHRONIC VISITITIS

We have heard for years of the loneliness and isolation of farm life. Possibly the undue agitation may be, in part at least, accountable for the incipient malady affecting many farm communities of late, which can not be better described than as Chronic Visititis. I am not a crank, a hermit, or confirmed stay-at-home; but the certain deterioration of either organization or individual, when once afflicted with this epdemic, is too obvious to escape the notice of even the most casual observer. Whatever the cause, the result is deplorable and, disagreeable as the situation may be, it should be faced squarely.

In all organizations it is equally detrimental, but in no other are the disastrous effects of such vital consequences as in the church. All other societies are dealing chiefly in temporal matters, while the chief commodity of the church must necessarily be souls—and a lost soul is of vastly greater import than a lost grange or a lost Holstein Breeders' Association. Not long since, at a regular devotional meeting of the local Epworth League, the first vice-president and her family alone, met a woman who practically never attends church and a non-Christian young man, recently drafted in whom the church has been especially interested for some years. A good League meeting conducted by live Epworthians might have saved two souls, but the whole chapter organization had gone to visit a neighboring League twenty miles away—and the two prospective converts have never been back since.

This is but one incident, but it serves to illustrate the loss that can, and does, often come from a general disposition to roam, especially on the part of an entire organization. In many country places no one stands by the church, the League, the prayer meeting, the grange, the W. C. T. U., or any local society, so long as anything else can be found to attend, from ten to fifty miles away. How often we hear the remark: "We never see the Blanks at anything around here since they got their new car. They can go farther away now." An elderly lady in an adjoining neighborhood told me last season that she never could get to church any more, and her home church very seldom had services anyway since all her neighbors had cars and every Sunday they went for a longer trip. A function of any sort near at hand is poorly attended because evidently the trip is too short to tempt the rank and file of motorists.

Is this attitude right? Are we not working in direct opposition to the community betterment idea? Should we not more loyally support the home activities, lest they die of starvation and we find ourselves without any? Let us all take thought upon this phase of the subject and rally to the standard of our own local organizations. Visiting delegations are well enough, but don't delegate the whole batallion; be sure that a strong home guard always holds the fort.—E. M. A., N. Y.

FRIEND PUBLIC

Friend Public suffers handicap
In being such a patient chap.
Beneath his heavy loads galore
He murmurs sweetly: "Pile on more!"
And schemers think 'twould be absurd
To fail to take him at his word.
Some busy groups their time devote
To plans to get Friend Public's goat;
Securing which, they clip its fleece—
With show of legal niceties—
And then proceed as fine as silk
To sell Friend Public back the milk.
Friend Public, pleased at the amount
Of fuss made all on his account,
Takes Wife to hear some solemn gent
Pour forth a lecture on content.

—Walter G. Doty.

Cheese is one of the best meat substitutes because it is an animal food and furnishes muscle-building substances. It retains many of the valuable elements of milk.

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Sizes	Price	Sizes	Price
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33x4	10.50	36x4½	13.00
34x4	10.50	37x4½	13.50

We will retread your old tires by our improved process and guarantee them at the following prices:

Sizes	Price	Sizes	Price
30x3	$5.50	36x4	$8.50
30x3½	6.00	34x4½	8.50
32x3½	7.00	35x4½	9.00
33x4	8.50	36x4½	9.00
34x4	8.50	37x4½	10.00

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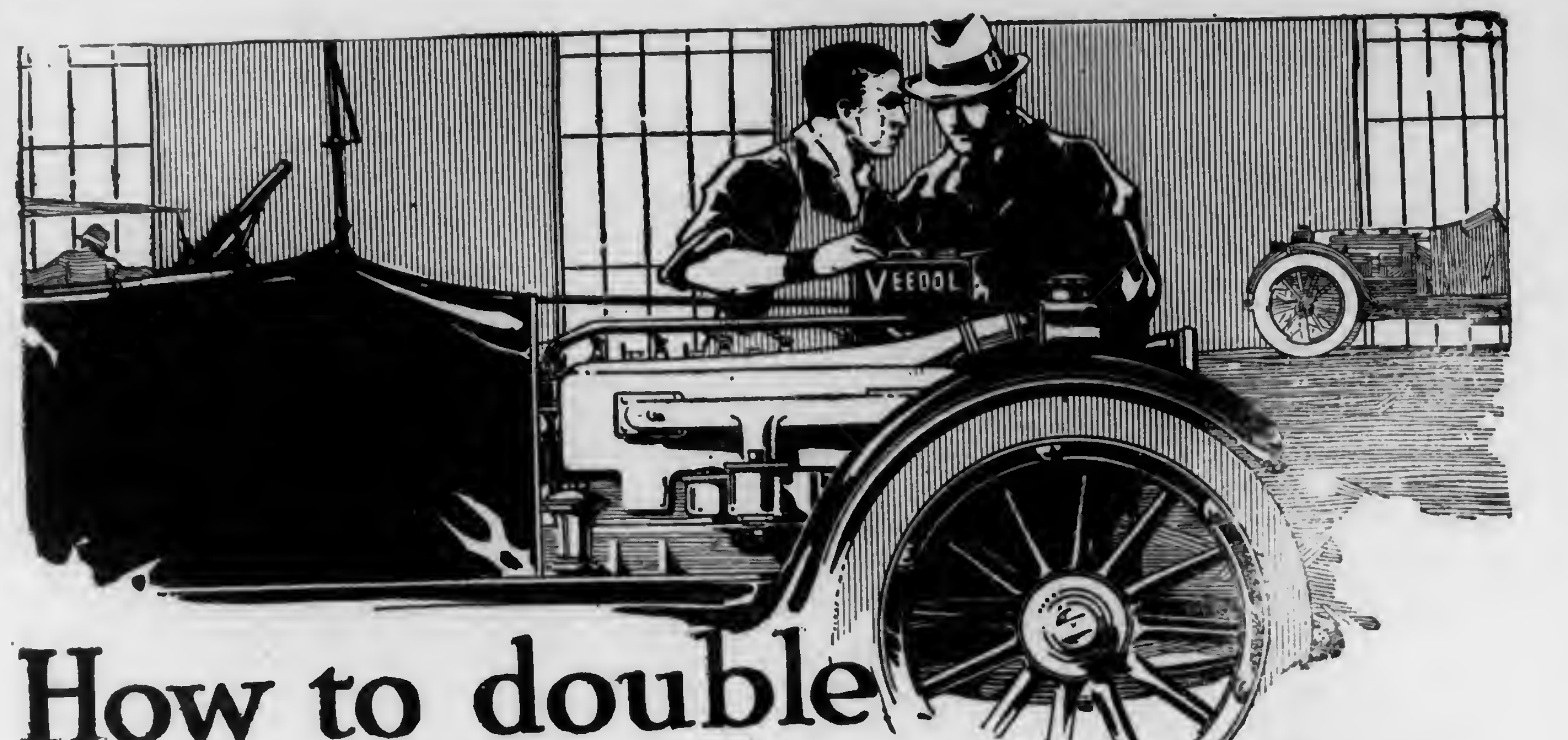

How to double the life of your engine

THE life of your engine—whether in motor car, truck or tractor—depends on the lubrication it receives.

Any well-built engine can run, after a fashion, for weeks, sometimes for months, on inferior oil—but with rapidly decreasing efficiency. And then come troubles, in endless succession; worn and broken parts, requiring costly replacements, and, finally, the scrap heap.

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Ordinary oil causes rapid wear because it breaks down under the terrific heat of the engine—200° to 1000°F.—forms large quantities of black sediment and evaporates rapidly through the oil filler pipe.

Sediment is the greatest cause of friction and consequent shortened life of automobile, tractor and stationary engines. It crowds out the good oil that should form a protecting film between moving metal surfaces. As sediment has no lubricating value, these metal parts grind together, producing friction and wear.

Ordinary oil after use Veedol after use

Note that the ordinary oil contains five times as much sediment as Veedol

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For years prominent engineers and chemists sought a new method of refining which would produce a lubricating oil that would not break down and form sediment under the heat of the engine, and that would give greater mileage due to minimum evaporation.

The result of their research was the discovery of the Faulkner Process. By this process—exclusively used by this company—was produced Veedol, the lubricant that resists heat.

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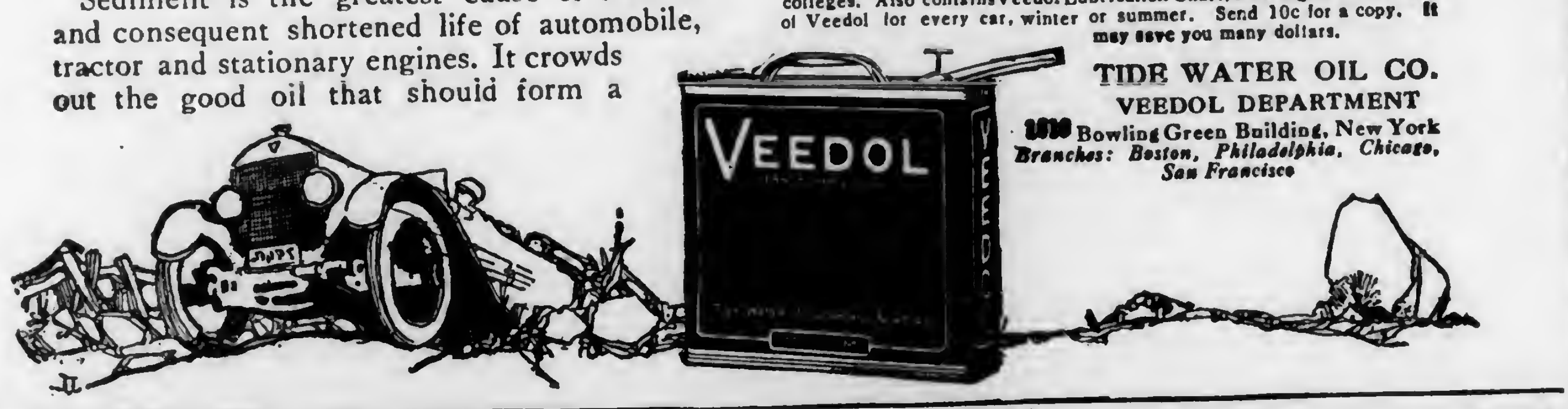

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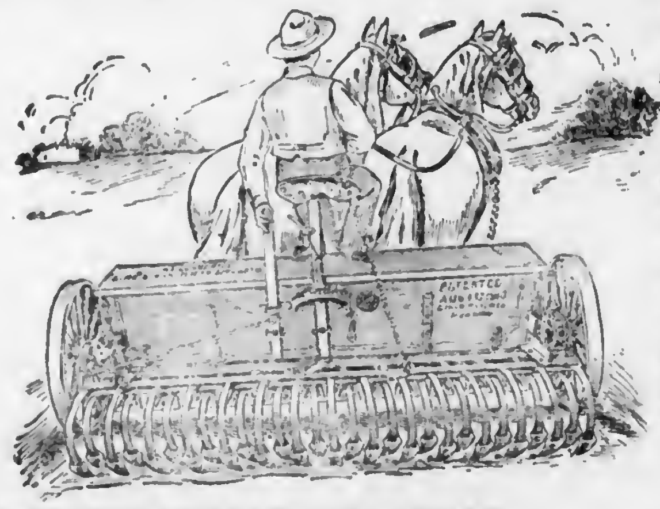

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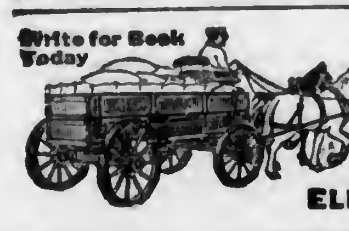

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Live Stock

HOG AND CORN FIGURING

Melvin Green, of the Meat Division, U. S. Food Administration, issues the following on the hog production outlook: The 13 to 1 ratio policy receives general approval. The minimum of $15.50 for the average of packers' droves in Chicago, which the Food Administration on November 3 promised to do its best to maintain until further notice, has not been generally so well understood as the 13 to 1 ratio policy. The 13 to 1 ratio price is to apply to pigs farrowed this spring. The $15.50 price does not pretend to be based on a 13 to 1 ratio. It was intended rather to let farmers know that prices would be kept stable and treacherous market breaks prevented.

The 13 to 1 Ratio Explained

Here is a mistake that many are making in their figuring on the hog and corn situation: A man will write, "I fed my hogs on corn that I could have sold for $1.50 a bushel and then sold the hogs for $14 a hundred. If I had sold my corn I would have got $19.50 because, according to the 13 to 1 ratio, there were 13 bushels of corn in each 100 pounds of hog and 13 times $1.50 equals $19.50. Therefore I am losing $5.50 on every hundred pounds of hogs I sell, and work and risk thrown in". Now this man is making not merely one mistake in his reckoning, but he is making a whole row of them.

In the first place, the finding of the committee of hog experts did not say and did not mean that it takes 13 bushels of corn to make 100 pounds of hog. The 13 to 1 ratio in reality offers a price which puts a substantial premium on hogs over the amount of corn necessary to grow them under average conditions. An average of six feeding trials at the Missouri, Nebraska, Iowa and Indiana Experiment Stations (reported in Purdue University Extension bulletin No. 39) gives the amount of corn required to make 100 pounds of pork as 586.2 pounds or slightly less than 10.5 bushels. This is for corn, fed alone, under dry lot conditions. Here is a premium of 2.5 bushels to pay for the feeding and the risks. Besides, fertility is maintained by feeding the corn on the farm.

A Premium on Wise Feeding

In addition to this, the farmer who lets his hogs follow cattle and turns into pork everything on his farm which would otherwise have gone to waste is getting part of his hogs' weight as a gift. He can produce another large percentage of each 100 pounds by various forage crops, many of which at the same time improve his soil. By the amount the farmer can manage to grow his hogs on other and cheaper things than corn, he can increase his profits over the normal corn fed premium. Thus instead of 13 bushels, it takes according to actual experiment less than 10½ bushels to make 100 pounds of pork, and by using skilful hog raising methods this amount may be cut down a great deal lower.

One-fifth Corn Crop Makes the Market

Here is another point which farmers are likely to overlook. It is only because 82 percent of the corn crop is fed on the farm and only 18 percent is put on sale that corn brings the price it does. Just stop and

think what would happen to the price of corn if most farmers tried to sell their corn as corn, instead of feeding it. Instead of 18 percent, or the fact that four-fifths of the crop going on to the market, we would have three or four times the amount that the trade normally takes flooding the market and corn would go to the prices that prevailed in the 90's. The price of corn depends on the fact that four-fifths of the crop is fed and never reaches the market to break it.

JUNE PIGS

There are many advantages in raising June pigs. The sow to farrow in June has the advantage of at least two months of warm weather, most of which time she can run on grass pastures, consequently getting the necessary exercise. Little, if any, care is required at farrowing time during the month of June. Two of the fatal pig troubles that every man has to fight where pigs are farrowed early, scours and thumps, are practically escaped by the June pig. There is always plenty of sunshine and the weather is warm, allowing the little fellows to get out and take plenty of exercise which almost entirely eliminates thumps. There is not the cold damp weather, with wet bedding and chilly winds, which very often brings on a case of scours with exceedingly bad results.

By the time the June pig begins to eat grain, he can have the benefit of new oats and barley, two mighty good pig feeds, thus getting away to a considerable extent at least from the high prices generally necessary to pay for either corn or any of the small grain feeds. With the benefit of these small grains and grass pastures, he can be carried along at a minimum expense until weaning time, when new corn can be had. This is especially true if the hog grower will plant a small acreage of ninety-day variety of corn. This generally gets ready for feed from the 20th of August on, and by sufficient planting, the hog grower can have good new corn until the main field crop is hard enough. Under present conditions, it certainly looks like good business for the hog grower to breed at least a few sows for June farrow.

GREEN FEEDS FOR SHEEP

Rape.—Dwarf Essex rape is one of the best green feeds for sheep. Of all the crops it is the most interesting one from the standpoint of protein. Altho it is a non-leguminous plant, belonging to the cabbage family, it contains greater quantities of edible protein in the dry matter than does alfalfa and clover. This explains in part why so many sheep feeders find it almost indispensable to profitable late summer and fall feeding. Rape yields a wonderful quantity of palatable and nutritious food for sheep and lambs. It is easy to sow, cheap to raise and its use tends to improve the soil, especially if the sheep and lambs that are grazed are fed rations of grain feed.

Pasturage.—Natural pasture grasses, rape and silage fed along with such farm feeds as alfalfa, clover, mixed hay, leguminous forage crops, rye pasturage, oats, barley and corn with just enough of the purchased concentrates to balance up the home supply of feeds will make up good rations for sheep and lambs of all ages.

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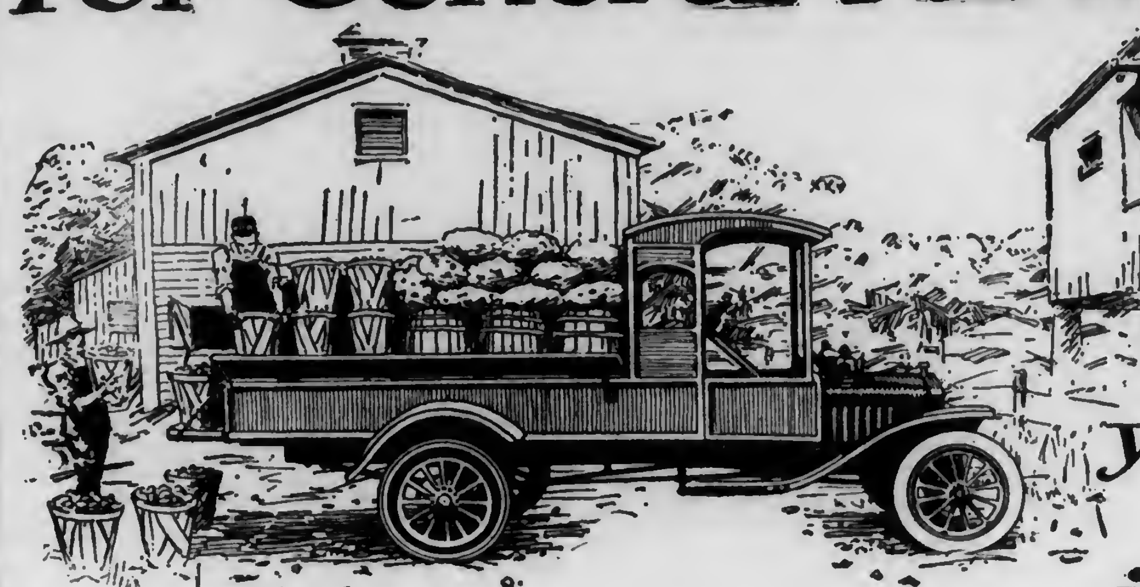

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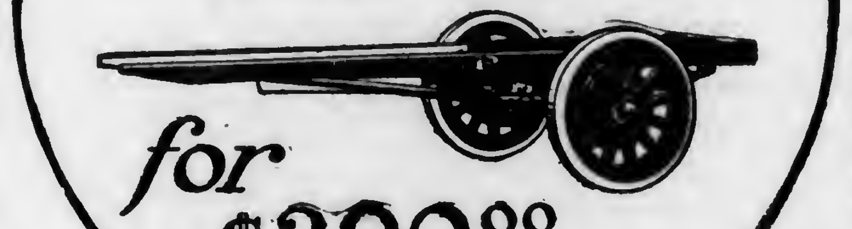

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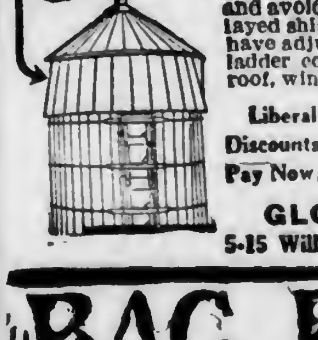

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A few of the dozens of ways of using maple at our house are as follows:

Maple Fudge

Break into small pieces enough maple sugar to make one cupful. Put it into a sauce pan with one cup sweet cream and one cup sugar. (If you have not the cream, milk and a little butter will do.) Heat slowly, stirring until sugar is dissolved. Boil until, when a little is tried in very cold water, it can be rolled into a soft ball between the fingers. Take from the fire and let it stand five minutes. Stir until it begins to thicken, then pour into a buttered tin, and mark in squares. One can add chopped nut meats, and can also use this for cake icing. If it hardens too quickly add just a little milk.

Maple Cookies

Use the above recipe for cake, adding two more tablespoons butter and a little more flour to make the batter stiff enough so you can drop the same as drop cookies.

Maple Parfait

Beat four eggs slightly; pour over them slowly, stirring constantly, one cup hot maple syrup; cook until mixture thickens, strain and cool. Add one pint thick cream, beaten stiff, and freeze. You can use part milk instead of all cream.

Shaved sugar or thick syrup served upon pancakes, apple bird's nest, strawberry short cake, baking-powder warm biscuit, or bread or breakfast cereals is delicious. Waxed upon snow or in a dish it is a rare treat. Soft tub sugar is used at our house to make sandwiches, or upon pancakes, or is eaten plain. We use the sugar thermometer to boil the syrup until it registers "tub sugar soft", then we remove it from fire. let stand until cool, then stir rapidly. This is as good as the cream inside of chocolate creams. Maple syrup makes a good sauce for ice cream; use with or without chopped nuts.

When bananas and grape fruit were brought into this country, a demand was created for them by inducing people to cultivate a taste for them. We do not need to resort to subtile means to create a taste for maple products, for in the majority of people, the taste already exists. But we as housewives do need to know the dozens of possibilities of just a small amount of maple, and to learn how to use it more in our cooking. We should learn how with a pint of syrup to make a candy that rivals in flavor a box of 80-cent chocolates at much less expense. Nothing can excel maple served in various ways as light refreshment for our guests. Let's buy syrup thermometers and learn to work with maple syrup. Then there will be many more women like a wise mother in Illinois who has long been our customer, ordering each year over 100 pounds of maple sugar for her yearly supply of candy for her family of growing boys and girls. She declares it is more wholesome for them and less expensive than other sugar candy.—Miss S. T., Broome Co., N. Y.

(This candy testimony reminds your editor of a 5-year-old youngster whose father had just come to our church as pastor shortly before "sugaring". We had them down to our farm for a "sugar-off" the first "run". The little fellow who had never eaten maple wax before, smacked his lips over his for a few minutes, then exclaimed excitedly, "Father! Father! This sugar's a good 'eal gooder'n any other sugar, isn't it?" This lad is now grown into the editor of a popular current events magazine.—The Editor.)

FINE HOME-MADE CORNMEAL

The administration's request that we observe one wheatless day a week has made an unprecedented demand for cornmeal, and not a few people are kicking on the quality of some cornmeal being put on the market. We now grind all the cornmeal we use ourselves, and it is much better than could formerly be purchased. It took some time to achieve the knack of making a quality of meal that was better than the ordinary kinds sold in the market.

Only the best corn in the cribs is selected — good-sized, well-developed ears with plump grains. Corn that is damp or the least bit molded will make a strong-flavored meal. Corn from a crib where dust stirred up by stock has settled on it, or where rats and mice have been running over it will make meal with objectionable odors that can not be eliminated.

Often when buying cornmeal people ask if it was made from white corn. They can easily be deceived by the color of the meal, for just as white a meal can be made from the yellow as the white corn by proper bolting. We make our meal from yellow corn, and bolt it so that it is nearly as white as wheat flour by a very simple contrivance connected with our feed grinder.

We have a feed grinder operated from a line shaft and run by a gasoline engine. At first the corn was ground twice to make it fine, for the first grinding made too coarse meal; this meal was yellow and contained some coarse hull which is hard to break up fine because it is so hard. However, it makes a good quality of meal, having a pronounced corn flavor. But later we learned how to make a much finer quality of meal, practically corn flour, by separating the hull and using the latter as feed for chickens.

A piece of ordinary galvanized window screen was used for separating. This is placed at an angle of about 65 degrees, so that when the ground corn comes from the spout of the grinder it slides down this screen. All the coarse stuff, including the hull of the grain, rolls down the screen. The finely ground part goes thru the screen and falls into a pan. The latter is the starchy part of the grain and is almost white, with a faint yellowish cast. It is very fine, and has a rather oily consistency as it contains most of the heart or germ of the corn, which is rich in protein. It makes an excellent quality of corn bread that bakes to a beautiful rich color with a mealy brown crust. It makes a light bread when baked either alone or mixed with wheat flour, and makes corn cakes that can not be excelled. The fineness of the meal can be gauged by changing the angle of the screen. If new corn is used, it should be artificially "kiln-dried" near a stove after shelling.—J. L. Justice, Ind.

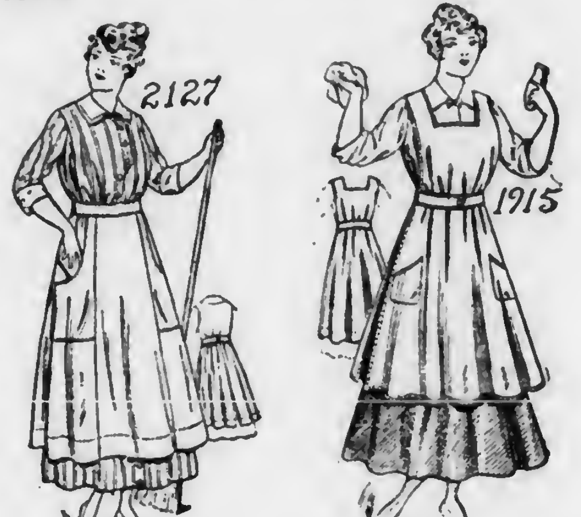
CATALOGUE NOTICE

Send 10 cents in silver or stamps for our Up-to-Date Spring and Summer, 1918 Catalogue, containing 550 designs of Ladies', Misses' and Children's patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches); all valuable hints to the home dressmaker.

PENNSYLVANIA FARMER PATTERNS

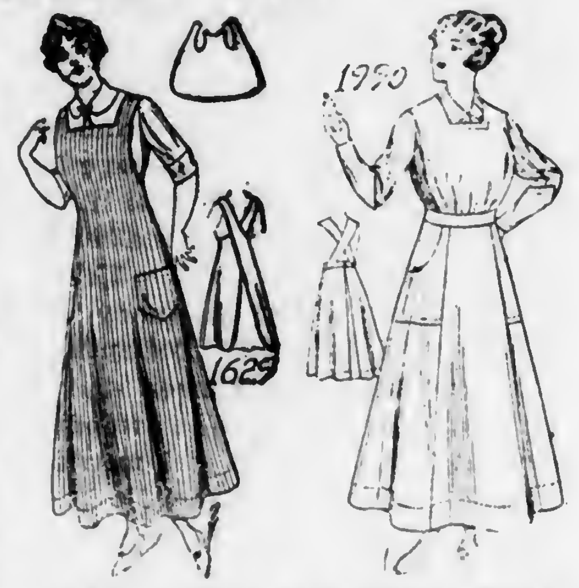
Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

2127.—A Simple Apron.—The big roomy pocket and the smooth fitting front gore will answer recent requests for such an apron. The pattern is cut in 4 sizes: Small, 20-22; medium, 24-26; large, 28-30 and extra large, 32-34 inches waist measure. Medium size will require 3½ yards of 36-inch material. Price, 10 cents.



1915.—Popular Apron. — Its fulness may be confined at the waistline, under the belt. The pattern is cut in 3 sizes: Small, medium and large. Medium size requires 4⅛ yards of 36-inch material. Price, 10 cents.

1629.—"Twenty-Minute" Apron.—You can make it in a hurry and find it quickly put on and comfortable ever after. In warm weather, this style will be much appreciated, for it does away with any superfluity of material, and at the same time secures ample protection for the dress beneath. Pattern is in 3 sizes: Small, medium and large. It require 5½ yards of 27-inch material for medium size. Price, 10 cents.



1990.—Apron and Sleeve Protector.—The bib is joined to strap portions, which are crossed over the back and fastened to the belt. Takes more moves to put on than 1629, still many women like this style. The apron has ample fulness in its skirt and is fitted with deep pockets. The sleeve protectors are very serviceable, and easy to make. Pattern is in 4 sizes: 34, 38, 42 and 46 inches bust measure. Size 38 requires 5 yards of 36-inch material for the apron, and ⅜ yard for the sleeve protector. Price, 10 cents.

Agricultural Policy Demanded

A Federal Farm Commission Recommended

Sixteen national farm organizations, and many smaller ones, united February 8 in a request to President Wilson for more definite measures in speeding up agricultural production. They urged a farm commission satisfactory to the large farm organizations, to be appointed by the President, to advise in important agricultural matters and to represent the viewpoint of the farming community. The text of the request follows:

The President:

Desiring earnestly to support and assist the government of the United States in winning the war, we, representatives of the Federal Board of Farm Organizations and other farmers' organizations, including in all more than three million organized farmers, have assembled in Washington to discuss ways and means for increasing the production of food at the coming harvest.

As set forth in the memorial of the Federal Board of Farm Organizations, submitted to you on January 22, 1918, a reduction in the amount of the coming crop is certain and unavoidable unless certain causes, all of them beyond the control of the farmers, are recognized and removed.

The chief obstacles which must be removed before the farmers of America can equal or surpass this year the crop of 1917 are: (1) Shortage of farm labor; (2) shortage of seed, feed, fertilizers, farm implements, and other agricultural supplies; (3) lack of reasonable credit; (4) prices often below the cost of production; (5) the justified belief of the farmer that he is not regarded as a partner in the great enterprise of winning the war. Farmers by themselves are powerless to remove these obstacles. Unless the Government grasps the vital seriousness of the situation and forthwith takes steps to help, a crop shortage is certain in spite of any and all things farmers can do to prevent it.

The Government, we understand, will spend some four billion dollars to assist commercial enterprises to produce munitions of war. We approve of this action, recognizing that it is necessary. Assistance for food production in this crisis does not involve any such vast expenditure. But without such assistance, vigorously and promptly given, it will remain impossible for farmers to grow the crops required. The Government should not hesitate to assist in the production of one sort of supplies essential to win the war when it has already spent vast sums to assist in the production of others. We deem it our duty to advise the nation of these facts, in order that the threatened danger may be minimized if not entirely prevented, and we respectively suggest the following remedies:

1. As to Labor.—The parole of trained farm workers back to the farm, to remain there so long as their services are considered by the Government to be more useful in productive agriculture than in the Army. The last classification of registrants under the present selective draft, we are informed, is not being uniformly enforced, and in particular we understand that skilled farm workers, farm foremen, and bona fide farmers are being placed in Class One. We ask for such an interpretation of the rule as will make such cases impossible. We welcome the assistance of all organizations that are helping to furnish labor in the production of food, and we believe that their services should be employed as fully as possible. We ask for such interpretation of the selective draft as will secure to the nation the services of all of its citizenship where those services are of most value to the nation, and for binding instructions to be issued to all boards to that effect. Especially do we ask that the definition of a skilled farm laborer be a man who is actually engaged in productive agriculture, and is supporting himself in it, without regard to college or university training.

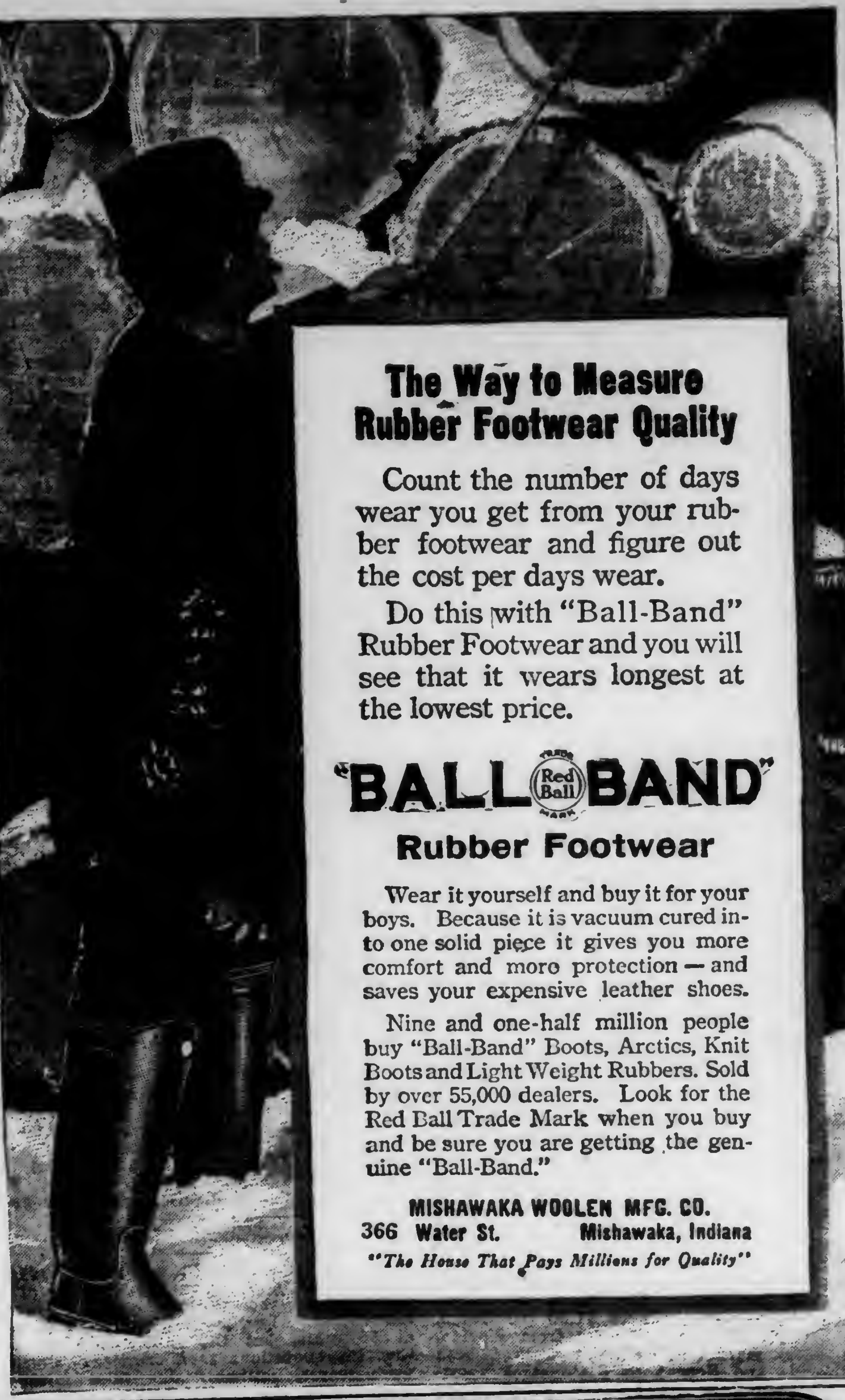
2. As to Farm Supplies.—Provision should be made for furnishing to producing farmers who need them such seeds, feeds, fertilizers, and farm machinery at cost as may be actually necessary to maintain their production or to increase it within practicable limits. We urge the transportation of farm products and supplies by the most economic routes and the prompt movement of perishable crops in their season. We urge that in carrying out the measures to win the war farmers' co-operative societies be given the same consideration that is given to other commercial organizations.

3. As to Credit.—Steps should be taken by the Government to promote aggressively and in all practicable ways short time loans to farmers for the purpose of financing the production of crops.

4. As to Prices.—Should the policy of price control prevail, then we ask that it shall be applied as much to what the farmer buys as to what he sells, to the end that consumer and producer be protected from exploitation.

5. As to Representation.—We recommend the immediate appointment of a farm commission, to consist preferably of nine farmers actually engaged in the business, to be selected by the President from men representative of and satisfactory to the great farm organizations of America, and to report directly to him on all questions that affect the increase of agricultural production and distribution. Such a commission should be authorized to secure information from all Government sources, and all departments of the Government should be instructed to co-operate with it. It should be in uninterrupted session at the City of Washington, and provision should be made for necessary quarters and expenses by Federal action. The Commission should be required, as its first task, to report at once upon all matters necessary in the immediate execution of recommendations numbers one to four above.

Such a commission is needed first of all to give to the farmers of America a sense of partnership in the conduct of the war, to which they have a right. The occasional consultation with farmers called to Washington or the occasional appointment of a farmer to a subordinate place does not amount to fitting participation in the conduct of the war on the part of one-third of the population of the United States, and all the more when that third produces the one form of supplies which is the most essential.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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 18, 1918.

Following the unsettled tone of the potato market, as reported in these columna last week, the market has become distinctly weaker, and the movement has been very slow and draggy at the lower prices. The receipts are fairly liberal, especially the nearby supplies which are being hauled in very freely. The bulk of the sales of Pennsylvania stock are now being made at $1.90 to $2.25 per cwt., with an occasional car of extra fancy bringing a little more. New York State stock is selling generally from $1.90 to $2.10 per cwt. These prices are from 30 to 35 cents a cwt. lower than the prices prevailing a week ago. The near-by Jersey stock also shows a big decline, and the same grades that were bringing from 80 to 90 cents per ⅝-bushel basket last week are now selling at 60 to 75 cents.

Sweet potatoes seem to be taking about the same course as the white potatoes. Supplies have been liberal and demand not so active, and as a result prices are much lower. Jersey sweets are selling from $1 to $1.30 per ⅝-bushel basket, and Southern sweets from $1 to $1.75 per bushel hamper, with No. 2's drawing from 75 cents to $1.

Vegetables

With the exception of red kidneys, dried beans are ruling practically unchanged from last week. Marrows are selling from $15.50 to $15.75; pea and medium, $13 to $13.50, and red kidneys, $13.50 to $14, with supplies running about equal to the demand. While green beans are still far from being plentiful, the receipts are gradually increasing and the tendency of the market is downward. While a few strictly fancy have sold up as high as $6.50 per hamper, the bulk of the sales on choice stock are made at $5 to $5.50, with poor at $3 to $4. Wax beans are bringing about the same prices as green. New beets are selling generally at $2 to $2.25 per crate. Old beets from Pennsylvania and New Jersey points continue in light supply and firm at $3 to $3.50 per barrel. Brussel sprouts are in light supply and prices have advanced, most sales averaging from 25 to 28 cents per quart. Old cabbage continues in very light supply and the prices are showing practically no change from last week. Fancy green Danish is selling from $65 to $70 per ton. New cabbage also continues in light supply and prices are a little higher than last week on fancy stock, which is selling up to $2.25 per hamper, and $3 to $3.25 per barrel crate. Some very poor and yellow stock, however, sold as low as $1.25 to $1.50 per hamper.

Carrots are much more plentiful and prices fully 50 cents a barrel lower than last week, most sales now being made at $2 to $2.50 per barrel, with some fancy at $2.75. Cauliflower is somewhat stronger, selling at $1.40 to $1.60 per crate. Hot house cucumbers are about steady at $1 to $1.50 per dozen. On account of heavy supplies from Florida, the celery market is decidedly weaker, both California and New York State stock showing a decline of 50 cents a crate, while Florida stock shows a decline of 50 to 75 cents a crate. The range on New York celery is from $1 to $3; California, $3 to $4 crate. Pennsylvania celery is also easier, selling generally from 10 to 12 cents a bunch, with some extra fancy up to 15 cents. Horse radish continues in light supply and the market rules firm and active at $7 to $8.50 per barrel. Lettuce, when showing good quality, is firm and higher, best stock now selling at $1.75 to $2 per hamper, while poor stock is dull and draggy and hard to move at any prices, some selling as low as 60 cents a hamper. While Pennsylvania hot house mushrooms are arriving more freely, the market is ruling about steady at 40 to 55 cents a pound.

Onions continue dull and draggy, with most sales being made at $1.50 to $1.85 per cwt., with only an occasional lot bringing up to $2 while poor are being sold at low at $1.25. A few No. 2's are being moved at 75 cents to $1 per cwt. White onions are selling slowly at $1.25 to $1.75 per crate. Parsnips are in freer supply and prices lower, ranging generally from $2.75 to $3.25 per barrel, with an occasional sale of strictly fancy a trifle higher. The few peas that are arriving are showing only ordinary quality, and while sales are made generally from $2.50 to $5 per hamper, strictly fancy would exceed these prices. Parsley is very scarce and selling high, some from New Orleans selling from $12 to $15 per barrel while California in large drums brought $18 to $20. Peppers are gradually increasing in supply and while still selling at $4 to $6 per crate, lower prices are expected. Hot house radishes are in light supply and firm at $4 to $6 per 100.

There has been no spinach on the market since our last report. Shallots are scarce and active at $5 to $6 per barrel. Very few rutabagas are arriving and the market firm and active at $2 to $2.50 per cwt., with small and medium sizes having the preference. Most of the tomatoes that are arriving are extremely poor, being spotted and green and these are hard to move at any price, some selling as low as 50 cents a crate. Strictly fancy are very scarce and when here sell promptly at $4 to $4.50 per crate. Hot house tomatoes are bringing extremely high prices, best selling at 40 cents a pound with No. 2's selling at 30 to 35 cents. Watercress is about steady at $1 to $2.50 per 100 bunches.

Fruits

While receipts and offerings of apples have been fairly liberal, the percentage of strictly fancy fruit is running very small and the market on such is ruling very firm, active and higher. Prices range about as follows: Baldwins, $4 to $6; Ben Davis, $3.50 to $4.75; Ganos, $3.50 to $4.75; Kings, $4 to $6.50; Hubbardstons, $3.50 to $5.50; Northern Spys, $3.50 to $5.50; Stayman Winesaps, $4 to $6.25; York Imperials, $3.50 to $5.75; Rome Beauty, $5 to $6; Winesaps, $4 to $6; Russett, $4 to $5.50; Pippins, $4 to $5.50. Box apples are also ruling very firm and active. Rome Beauties, Spitzenbergs, Stayman Winesaps, and Old Fashion Winesaps all sell generally at $2 to $2.50, with some Delicious selling at $2.50 to $3.25. The limited number of Keiffer pears that are now being offered are moving slowly at $2 to $2.25 per barrel. Strawberries continue in very light supply and sell generally at 40 to 50 cents per quart.

Poultry

Rule 14 of the Federal Food Administration, which was issued Saturday, February 9 has practically stopped all trade in fowls and pullets. This rule is as follows: "The licensee will not between February 11 and April 30, 1917, purchase, ship, sell, or negotiate the sale of any live or freshly killed hens or pullets, provided, however, that this shall not prevent the purchase, shipment or sale between February 11 and February 23, 1918, of hens or pullets which were either killed or shipped prior to February 11, 1918, to market for sale as food and provided that nothing in this rule shall prevent the purchase, shipment or sale of live hens or pullets for egg production purposes."

Quotations on other live fowls is as follows: Soft meated roosters, 28 to 32 cents; staggy young roosters, 27 to 28 cents; old roosters, 24 to 26 cents; ducks, 28 to 34 cents; geese, 28 to 32 cents; guineas, 75 cents to $1 per pair. Pigeons, 25 to 35 cents per pair.

Eggs

The supplies of strictly fresh eggs are far from being sufficient for the demands and the limited receipts are cleaning up promptly at 63 to 64 cents per dozen. Fancy selected, carefully packed fresh eggs are jobbing out at 70 to 72 cents a dozen.

NEW YORK PRODUCE

New York City, Feb. 18, 1918.

Butter rules generally steady and there is little change in the cheese market. Eggs are higher than a week ago but the market is nervous. Dressed poultry is firm and higher. Receipts of apples are heavy but are moving steadily. Potatoes and onions weak.

Butter.—Creamery, extras, (92 score), per pound, 52c; higher score, 52½@53c; thirds to firsts, 45@51c; state dairy, 44@47c; ladles, 36@39c.

Cheese.—Colored specials, 26¼@26½c. Daisies, 26¾c.

Eggs.—Fresh gathered extras, 62½@63c; extra firsts, 62c; nearby white, fine to fancy, 61@62c; ordinary to good, 62@63c; browns, 61@64c.

Vegetables and Greens. — Beets, per 100 bunches, $3@7. Onions, per 100-lb. bag, $1@2.50. Potatoes, Jersey, $2.12@2.33 per 100 lbs; state and western, $2@2.50 100 lbs. Carrots, $2.50@3.50 per barrel.

Apples.—McIntosh, $4@6.50; York Imperial, $3.75@5.50; Twenty Ounce, $4@5.25; King, $4@5.50; Baldwin, $3.50@5.25.

LANCASTER PRODUCE

Lancaster, Pa., Feb. 18, 1918.

Fifty-cent eggs were the feature of today's market, thus setting the lowest figure of the winter. The market opened with sales at 55 cents, but the supply was so large that the quotations soon dropped. Chickens were scarce, probably due to a misunderstanding on the part of the farmers of the ruling of the Food Administration. The few chickens which were offered were held at abnormal prices.

Butter and Eggs.—Creamery butter, 55@58c per lb; country butter, 55c lb; fresh eggs, 50c per dozen; storage eggs, 45c.

Poultry.—Dressed old chickens, $1.25@1.75; young dressed chickens, $1@1.25; live chickens, $1.75@2 per pair; old live chickens, 35c lb.

Vegetables and Fruits.—Tomatoes, 20c bx; lima beans, 18c pint; celery, 5@10c bunch; lettuce, 5@12c hd; dry onions, 10c bx; cabbage, 5@10c hd; sweet potatoes, 25c ½ pk; potatoes, $1.10@1.50 bu; do., 12@20c ½ pk; apples, 20@25c ½ pk.

Grain Market.—Milling wheat, $2 bu; damp wheat, $1.80; new ear corn, $1.65; rye, $1.65; oats, 65c; No. 1 timothy hay, $25 per ton; clover hay, $18; wheat straw, $12; oat straw, $10.

YORK PRODUCE MARKET

York, Pa., Feb. 18, 1918.

Market conditions have been without change the past week. Potatoes are moving slowly to the dealers at $1.25 per bushel, but there is little call for them by the consumers. Farmers were just congratulating themselves that they would not lose quite all the feed put into chickens this winter as the price had gone from 18 to 28 cents per pound, when here comes the order we have to feed the old hen whether it pays or not; just keep on shoveling $3.50 feed in and taking $2.50 worth of eggs out per year. Profits not hard to figure: On 100 hens for one year, minus $100. With as much patriotism as is shown by any class of men, we can not help but say that this course will never increase the food supply. If it does not pay to keep a hen at the price of her products, then good business sense tells us to put her away, or let the other fellow, if he thinks he must have this product, put up the price that will pay the man to keep hens and the goods will be coming in all right.

Eggs.—50@54c per dozen.

Butter.—Country, 48@50c lb; separator, 50@55c lb; milk, 10c quart.

Poultry.—Hens, 26@28c lb; not allowed to sell.

Vegetables.—Potatoes, 10@16c ½ pk; $1@1.25 per bu; lettuce, 5@15c hd; cabbage, 4@10c hd; beets, 5c bch; radishes, 6c bch; onions, 12@15c bx; 25c ½ pk; lima beans, 35@40c qt; soup beans, 15@18c pt; celery, 5@10c stalk; turnips, 20@25c ½ pk; corn meal, 10@12c qt.

Fruit.—Apples, 10@40c ½ pk; pears, 5@10c a bx.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c lb; back-bone, 28@30c lb; ribs, 30@32c; tenderloin, 45@48c; steak, 34@38c; pudding, 24c; lard, 32@35c; cured hams, 40@45c.

Retail Grain Market.—Wheat, $2.25; corn, $1.75; oats, 90c; rye, $1.75; bran, $2.40 cwt; middlings, $2.55.

Wholesale Grain Market.—Wheat, $2.08; corn, $1.60; oats, 72c; rye, $1.65; bran, $44@48 per ton; middlings, $50@55.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 18, 1918.

Beef Cattle.—Offerings of steers, bulls and cows were only moderate, but values ruled steady, with demand fair. Calves were again weaker, with trade slow.

Steers, good to choice, $12@13.35; common to fair, $10.50@12; bulls, $8@10; cows, fancy, fat, per lb., 10c; fair to good, per lb., 8½@9½c; medium, 7@8c; bologna cattle, 4@6c; calves, extra choice, $16.50@17; fair to good, $15@16; common, $13@14; Tennessee and southern, $8@15.

Sheep and Lambs.—Offerings of sheep were only moderate and the market ruled steady, with demand fairly active. Trade in lambs was slow and the market was again easier under fairly liberal offerings.

Sheep.—Wethers, extra, $13.50@14; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $12@13. Lambs—Choice, $17.75@18; do., medium, $16.50@17; inferior, $14.50@15.50.

Hogs.—Demand was fairly active and the market ruled steady under moderate offerings. There was some complaint of stock being delayed in transit. Quotations for best western, $18.50@19.

City Dressed Stock.—Cows, heifers and bulls were quiet and unchanged, with moderate but ample offerings. Lambs were in light request and weaker. Other descriptions were generally steady.

Steers, 16@21c; heifers, 15@19c; cows, 12@18c; calves, 24@25½c; southern and barnyards, 18@20c, country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 26@28c; extra, 30c; hogs, 25c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Feb. 18, 1918.

Baled Hay and Straw.—Receipts, 48 tons of hay and 2 cars of straw. The market for No. 1 hay was largely nominal, due to scarcity. The under grades were well cleaned up at inside prices. Straw ruled firm.

Timothy hay, according to location. No. 1 large bales, nominal, $31@32; No. 1 small bales, nominal, $31@32; No 2, $29@30; No. 3, $26@27; sample, $21@23; no grade, $17@19. Clover-mixed hay, light mixed, $29@30; No. 1 do., $27.50@28.50; No. 2 do., $24.50@25.50.

Straw.—No. 1 straight rye, $19@19.50; No. 2 do., $18@18.50, No 1 tangled rye, $16.50@17; No. 2 do., $15.50@16; No. 1 wheat straw, $15.50@16; No. 2 do., $14.50@15; No. 1 oat straw, $15.50@16; No. 2 do., $14.50@15.

Note.—A considerable proportion of the receipts of hay coming into this market is for export, and it is hard to determine with any degree of accuracy the total receipts for the local trade.

Bran.—Supplies were small and the market was nominal.

Wheat.—No. 2 red, $2.24.

Oats.—No. 2 white, $1@$1.01

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Feb. 18, 1918.

Butter.—The market maintained a firm tone, because of small supplies, but as usual on Saturday little interest was manifested in the wholesale market.

Western, fresh solid-packed creamery extra, 52c; higher-scoring goods, 53@54c; extra firsts, 50@51c; firsts, 48@49c; seconds, 47c; sweet creamery, extra, 53c; under grades, 50@52c; nearby prints, fancy, 56c; do., average extra, 53@55c; firsts, 48@50c; seconds, 45@47c; special brands jobbing at 57@59c.

Cheese.—The market ruled very firm, with a fair demand.

New York, full cream, fancy June, 26½@27c; specials higher; do., September made, 26c; do., fair to good, 23@25c.

NEW YORK HAY AND GRAIN

New York City, Feb. 18, 1918.

Feed.—There was no change in the general market situation. Northwest mills are out of the market so far as offering for new business and there are also no sellers of goods in transit. The trade continues to await the outcome of the new Government regulations whereby goods will be sold as near direct as possible from the producer to the consumer, this doing away with all sorts of handling and constantly advancing prices. Transportation is slowly improving. Better weather is helping materially. In the meanwhile there is a good demand in the spot market for both Western and city qualities, consumers seeking supplies as a result of the failure of goods to arrive on time. Orders for export account are also noted.

All spot prices have been withdrawn.

Hay and Straw.—The market is still very lightly supplied with hay and prices held very firm with outside track delivery points gradually moving up in value.

Hay.—No. 1 large or small bales, $37@39; No. 2, $36@40; light clover, mixed, $34@37. Rye straw, $21@22 per ton.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 18, 1918.

Cattle slow; supply, 95 cars. Prime at $12.50@13.

Sheep steady; supply, 10 double decks. Prime wethers at $13@14; cull and common at $6@8; lambs at $14@17.25.

Veal calves at $15.50@16.

Hogs active; receipts, 50 double decks. Prime heavies at $16.90@17; mediums at $17.30@17.40; heavy yorkers at $17.30@17.40; light yorkers at $16@16.75; pigs at $15@15.50; roughs at $15@15.50.

NEW YORK LIVE STOCK

New York City, Feb. 18, 1916.

Beeves.—Receipts, 2,880; steady. Steers at $9.65@13.15; bulls at $6.50@11; cows at $4.50@9.50.

Calves.—Receipts, 910; firm. Veals at $14@18; culls at $11@13.50; barnyard calves at $7.00@8.50; yearlings at $6.00; westerns at $8.75@9.87½.

Sheep and Lambs.—Receipts, 3,100; sheep nominal. Lambs steady at $17.25@18; culls at $12.

Hogs.—Receipts, 6,850; market higher at $17@17.35; roughs at $16; pigs at $16@16.50.

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 18, 1918.

Cattle.—Receipts, 2,300; heavy slow; others steady; prime steers, $13.25@13.65; shipping steers, $11.25@13.25; butchers, $10.50@12.50; yearlings, $11.50@13; heifers, $8@11.25; cows, $4.50@10.50; bulls, $6.50@11.50; stockers and feeders, $6.50@9.50; fresh cows and springers, $65@135.

Calves.—Receipts, 1,200; strong; $7@17.50.

Hogs.—Receipts, 10,200; strong; heavy, $17.25@17.40; mixed, $17.35@17.50; yorkers, $17.50; light yorkers, $16@16.50; pigs, $16; roughs, $15.50@15.75; stags, $13.50@14.50.

Sheep and Lambs. — Receipts, 9,000; steady; lambs, $14@17.75; others unchanged.

LANCASTER LIVE STOCK

Lancaster, Pa., Feb. 18, 1918.

Cattle.—Receipts, 1,022 head, against 1,850 head a week ago. Market slow; prices 10 to 15 cents off on best grades, 15 to 25 cents lower on poorer grades. Good to choice steers, $11.15@12.75; medium to good, $10.60@11.25; common to medium, $9.25@10.25; good to choice heifers, $10.15@11.60; medium to good, $9@9.50; common to medium, $8@8.75; good to choice cows, $8.60@9.40; medium to good, $7.60@8.40; common to medium, $6.50@7.25; bologna and fair flesh cows, $5.75@6.25; good to choice bulls, $10.75@11.75; medium to good, $9.90@10.40; common to medium, $8.75@9.25; bologna bulls, $8.25@8.90; good to choice stock bulls, $9.40@9.90; medium to good, $8.90@9.40; common to medium, $8.40@8.90.

Hogs.—Receipts, 403 head; market active; prices steady. Best grades, $17.50@18.25; roughs, $16@17.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., Feb. 18, 1918.

Hay.—All grades of timothy hay moving off at top prices. Receipts light, market advancing. Clover and clover mixed hay scarce. All embargoes lifted, absolutely no restrictions. In shipping, mark the same "Food for Animals" and shipments should come thru without delay.

No. 1 timothy, $31.50@32; No. 2 timothy, $29.50@30; No. 3 timothy, $26.50@27; No. 1 light mixed, $30@30.50; No. 1 clover mixed, $31@32; No. 2 clover mixed, $28@30; No. 1 clover, $31@32; No. 2 clover, $28@30.

Straw.—Absolutely no straw arriving, market completely bare of same.

No. 1 oat, $16.25@16.50; No. 2 oat, $16@16.25; No. 1 wheat, $16@16.50; No. 2 wheat, $15.50@16; No. 1 rye, $16.50@17; No. 2 rye, $16@16.50.

Ear Corn.—Ear corn very scarce; demand good; market in excellent shape. No quotations.

NEW YORK MILK MARKET

New York City, Feb. 18, 1918.

Demand was exceptionally good last week taking into consideration the season of the year. The business was equal to that of last fall. This was due to the comparatively warm weather. Owing to the lack of cars necessary for the preservation of milk because of the extreme cold weather, some producers and shippers were caught napping and had some sour milk on their hands. Whether this was an indication that unpasteurized milk was sent to market, or that pasteurization is not effective against souring, is a question which may be left open. Supply is not excessive and some of the milk trains are still off schedule.

The Federal Commission rate to the producer of Grade B in the first district is $3.34 a hundred for 3 percent milk; $3.58, or approximately 7.6 cents a quart, for 3.6 percent; and $3.74, for 4 percent. Receipts of milk and cream in 40-quart cans for the week ending February 16 were as follows:

Railroad	Milk	Cream
Erie	41,247	2,044
Susquehanna	6,807	29
West Shore	9,765	835
Lackawanna	58,395	915
N. Y. Central (long haul)	99,633	1,385
Ontario	36,312	1,615
Lehigh Valley	45,646	581
New Haven	6,520	
Pennsylvania	9,890	170
Other sources	5,825	152
Totals	320,040	7,726
Same week last year	337,970	9,522

TOBACCO MARKET

Packers are now paying high prices for the small residue of the 1917 product and they frankly acknowledge that they must have it. The situation is in sharp contrast with former years when those men could assume a position of independence as to when and what they did. While statistics show an average amount of tobacco in the country as a whole the consumptive demand has been such that factories have been wholly unable to maintain a large surplus stock as in former years. Sales were on a basis of former reports, all offerings of good to moderate quality being eagerly sought at around $30 per cwt. It is predicted that in a short time there will be less tobacco in the hands of growers than since tobacco growing was commenced. In former years, when prices were always more or less unsatisfactory, there were those who would hold over from one year to the next and even longer rather than sell at a sacrifice. Stripping was actively followed during the week, being made possible by the prevailing fair weather. Even yet there was complaint of sappy stems, having been frozen for months and thus free from evaporation and the attending benefits.

NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

CHAPTER XXXII

The Truth

With the desperation of a joy born of despair she laid her burning cheek hysterically against his cheek. She rained kisses on his ice-crusted brows and snow-beaten eyes. Her arms held him rigidly. He could not move nor speak until she would let him. Transformed, this mountain girl who gave herself so shyly, forgot everything. Her words crowded on his ears. She repeated his name in an ecstasy of welcome, drew down his lips, laughed, rejoiced, knew no shamefacedness and no restraint—she was one freed from the stroke of a descending knife. A moment before she had faced death alone; it was still death she faced—she realized this—but it was death, at least, together, and her joy and tears rose from her heart in one stream.

De Spain comforted her, quieted her, cut away one of the coats from his horse, slipped it over her shoulders, incased her in the heavy fur, and turned his eyes to Duke.

The old man's set, square face surrendered nothing of implacability to the dangers confronting him. De Spain looked for none of that. He had known the Morgan record too long, and faced the Morgan men too often, to fancy they would flinch at the drum-beat of death.

The two men, in the deadly, driving snow, eyed each other. Out of the old man's deep-set eyes burned the resistance of a hundred storms faced before. But he was caught now like a wolf in a trap, and he knew he had little to hope for, little to fear. As de Spain regarded him, something like pity may have mixed with his hatred. The old outlaw was thinly clad. His open throat was beaten with snow and, standing beside the wagon, he held the team reins in a bare hand. De Spain cut the other coat from his saddle and held it out. Duke pretended not to see and, when no longer equal to keeping up the pretense, shook his head.

"Take it," said de Spain curtly.

"No."

"Take it, I say. You and I will settle our affairs when we get Nan out of this," he insisted.

"De Spain!" Duke's voice, as was its wont, cracked like a pistol. "I can say all I've got to say to you right here."

"No."

"Yes," cried the old man.

"Listen, Henry," pleaded Nan, seeking shelter from the furious blast within his arm, "just for a moment, listen!"

"Not now, I tell you!" cried de Spain.

"He was coming, Henry, all the way—and he is sick—just to say it to you. Let him say it here, now."

"Go on!" cried de Spain roughly. "Say it."

"I'm not afraid of you, de Spain!" shouted the old man, his neck bared to the flying ice. "Don't think it! You're a better man than I am, better than I ever was—don't think I don't know that. But I'm not afraid of e'er a man I faced, de Spain; they'll tell you that when I'm dead. All the trouble that ever come 'tween you and me come by an accident—come before you was born, and come thru Dave Sassoon, and he's held it over me ever since you come up into this country. I was a young fellow. Sassoon worked for my father. The cattle and sheep war was on, north of Medicine Bend. The Peace River sheepmen raided our place—your father was with them. He never did us no harm, but my brother, Bay Morgan, was shot in that raid by a man named Jennings. My brother was fifteen years old, de Spain. I started out to get the man that shot him. Sassoon trailed him to the Bar M, the old de Spain ranch, working for your father."

The words fell fast and in a fury. They came as if they had been choked back until they strangled "Sassoon took me over there. Toward night we got in sight of the ranch-house. We saw a man down at the corral. 'That's Jennings,' Sassoon says. I never laid eyes on him before—I never laid eyes on your father before. Both of us fired. Next day we heard your father was killed, and Jennings had left the country. Sassoon or I, one of us, killed your father, de Spain. If it was I, I did it never knowing who he was, never meaning to touch him. I was after the man that killed my brother. Sassoon didn't care a darn which it was, never did, then or never. But he held it over me to make trouble sometime 'twixt you and me. I was a young fellow. I thought I was revenging my brother. And if your father was killed by a patched bullet, his blood is not on me, de Spain, and never was. Sassoon always shot a patched bullet. I never shot one in my life. And I'd never told you this of my own self. Nan said it was the whole truth from me to you, or her life. She's as much mine as she is yours. I nursed her. I took care of her when there weren't no other living soul to do it. She got me and herself out into this, this morning. I'd never have been caught like this if I'd had my way. I told her 'fore we'd been out an hour we'd never see the end of it. She said she'd rather die in it than you'd think she quit you. I told her I'd go with her and do as she said—that's why we're here, and that's the whole truth, so help me God!

"I ain't afraid of you, de Spain. I'll give you whatever you think's coming to you with a rifle or a gun any time, anywhere—you're a better man than I am or ever was. I know that—and that ought to satisfy you. Or, I'll stand my trial, if you say so, and tell the truth."

The ice-laden wind, as de Spain stood still, swept past the little group with a sinister roar, insensible alike to its emotions and its deadly peril. Within the shelter of his arm he felt the yielding form of the indomitable girl who, by the power of love, had wrung from the outlaw his reluctant story—the story of the murder that had stained with its red strands the relations of each of their lives to both the others. He felt against his heart the faint trembling of her frail body. So, when a boy, he had held in his hand a fluttering bird and felt the whirring beat of its frightened heart against his strong, cruel fingers.

A sudden aversion to more bloodshed, a sickening of vengeance, swept over him as her heart mutely beat for mercy against his heart. She had done more than any man could do. Now she waited on him. Both his arms wrapped round her. In the breathless embrace that drew her closer she read her answer from him. She looked up into his eyes and waited. "There's more than what's between you and me, Duke, facing us now," said de Spain sternly, when he turned. "We've got to get Nan out of this—even if we don't get out ourselves. Where do you figure we are?" he cried.

"I figure we're two miles north of the lava beds, de Spain," shouted Morgan.

De Spain shook his head in dissent. "Then where are we?" demanded the older man rudely.

"I ought not to say, against you. But if I've got to guess, I say two miles east. Either way, we must try for Sleepy Cat. Is your team all right?"

"Team is all right. We tore a wheel near off getting out of the lava The wagon's done for."

De Spain threw the fur coat at him. "Put it on," he said. "We'll look at the wheel."

They tried together to wrench it into shape, but worked without avail. In the end they lashed it, put Nan on the Lady, and walked behind while the team pushed into the pitiless wind. Morgan wanted to cut the wagon away and take to the horses, but de Spain said not until they found a trail or the stage road.

So much snow had fallen that in spite of the blizzard, driving with an unrelenting fury, the drifts were deepening, packing, and making all effort increasingly difficult. It was well-nigh impossible to head the horses into the storm, and de Spain looked with ever more anxious eyes at Nan. After half an hour's superhuman struggle to regain a trail that should restore their bearings, they halted, and de Spain, riding up to the wagon, spoke to Morgan, who was driving: "How long is this going to last?"

"All day and all night." Nan leaned closely over to hear the curt question and answer. Neither man spoke again for a moment.

"We'll have to have help," said de Spain after a pause.

"Help?" echoed Morgan scornfully. "Where's help coming from?"

De Spain's answer was not hurried. "One of us must go after it." Nan looked at him intently.

Duke set his hard jaw against the hurtling stream of ice that showered on the forlorn party. "I'll go for it," he snapped.

"No," returned de Spain. "Better for me to go."

"Go together," said Nan.

De Spain shook his head. Duke Morgan, too, said that only one should go; the other must stay. De Spain, while the storm rattled and shook at the two men, told why he should go himself. "I'm not claiming you are not entitled to say who should go, Duke," he said evenly. "Nor that our men, anywhere you reach, would not give you the same attention they would me. And it isn't saying that you're not the better man for the job—you've travelled the Sinks longer

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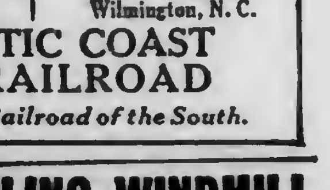

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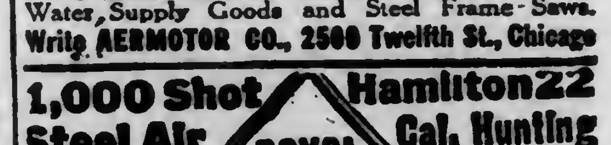

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than I have. But between you and me, Duke, its twenty-eight years against fifty. I ought to hold out a while the longer, that's all. Let's work farther to the east."

Quartering against the mad hurricane, they drove and rode on until the team could hardly be urged to further effort against the infuriated elements—de Spain riding at intervals as far to the right and the left as he dared in vain quest of a landmark. When he halted beside the wagon for the last time he was a mass of snow and ice; horse and rider were frozen to each other. He got down to the ground with a visible effort, and in the singing wind told Duke his plan and purpose.

He had chosen on the open desert a hollow falling somewhat abruptly from the north, and beneath its shoulder, while Morgan loosened the horses, he scooped and kicked away a mass of snow. The wagon had been drawn just above the point of refuge, and the two men, with the aid of the wind, dumped it over sidewise, making of the body a windbreak over the hollow, a sort of roof, around which the snow, driven by the gale, would heap itself in hard waves. Within this shelter the men stowed Nan. The horses were driven down behind it, and from one of them de Spain took the collar, the tugs, and the whiffletree. He stuck a hitching-strap in his pocket, and while Morgan steadied the Lady's head, de Spain buckled the collar on her, doubled the tugs around the whiffletree, and fastened the roll at her side in front of the saddle.

Nan came out and stood beside him as he worked. When he had finished she put her hand on his sleeve. He held her close, Duke listening, to tell her what he meant to try to do. Each knew it well might be the last moment together. "One thing and another have kept us from marriage vows, Nan," said de Spain, beckoning at length to Morgan to step closer that he might clearly hear. "Nothing must keep us longer. Will you marry me?"

She looked up into his eyes. "I've promised you I would. I will promise every time you ask me. I never could have but one answer to that, Henry—it must always be yes!"

"Then take me, Henry," he said slowly, "here and now for your wedded husband. Will you do this, Nan?"

Still looking into his eyes, she answered without surprise or fear: "Henry, I do take you."

"And I, Henry, take you, Nan, here and now for my wedded wife, for better for worse, for richer for poorer, from this day forward, until death us do part."

They sealed their pact with a silent embrace. De Spain turned to Duke. "You are the witness of this marriage, Duke. You will see, if an accident happens, that anything, everything I have—some personal property—my father's old ranch north of Medicine Bend—some little money in bank at Sleepy Cat—goes to my wife, Nan Morgan de Spain. Will you see to it?"

"I will. And if it comes to me—you, de Spain, will see to it that what stock I have in the Gap goes to my niece, Nan, your wife."

She looked from one to the other of the two men. "All that I have," she said in turn, "the lands in the Gap, everywhere around Music Mountain, go to you two equally together, or whichever survives. And if you both live, and I do not, remember my last message—bury the past in my grave."

Duke Morgan tested the cinches of the saddle on the Lady once more, unloosed the tugs once more from the horse's shoulder, examined each buckle of the collar and every inch of the two strips of leather, the reinforced fastenings on the whiffletree, rolled all up again, strapped it, and stood by the head until de Spain swung up into the saddle. He bent down once to whisper a last word of cheer to his wife, and without looking back, headed the Lady into the storm.

CHAPTER XXXIII

Gambling With Death

Beyond giving his horse a safe headway from the shelter, de Spain made little effort to guide her. He had chosen the Lady, not because she was fresher, for she was not, but because he believed she possessed of the three horses the clearest instinct to bring her thru the fight for the lives that were at stake. He did not deceive himself with the idea he could do anything to help the beast find a way to succor; that instinct rested wholly in the Lady's head, not in his. He only knew that if she could not get back to help, he could not. His own part in the effort was quite outside any aid to the Lady—it was no more than to reach alive whatever aid she could find, that he might direct it to where Nan and her companion would endure a few hours longer the fury of the storm.

His own struggle for life, he realized, was with the wind — the roaring wind that hurled its broadsides of frozen snow in monstrous waves across the maddened sky, challenging every living thing. It drove icy knives into his face and ears, paralyzed in its swift grasp his muscles and sinews, fought the stout flow of blood thru his veins, and searched his very heart to still it.

Encouraging the Lady with kind words, and caressing her in her groping efforts as she turned head and tail from the blinding sheets of snow and ice, de Spain let her drift, hoping she might bring them thru, what he confessed in his heart to be, the narrowest of chances.

He bent low in his saddle under the unending blasts. He buffeted his legs and with a hand on the pommel tramped beside the horse to revive his failing circulation; there would come a time, he realized, when he could no longer climb up again, but he staved that issue off to the last possible moment of endurance, because the Lady made better time when he was on her back. When the struggle to remount had been repeated until nature could no longer by any staggering effort be made to respond to his will, until his legs were no longer a part of his benumbed being—until below his hips he had no body answerable to his commands, but only two insensible masses of lead that anchored him to the ground—he still forced the frozen feet to carry him, in a feeble, monstrous gait beside the Lady, while he dragged with his hands on the saddle for her patient aid.

One by one every thought, as if congealed in their brain cells, deserted his mind—save the thought that he must not freeze to death. More than once he had hoped the insensate fury of the blizzard might abate. The Lady had long since ceased to try to face it—like a stripped vessel before a hurricane, she was drifting under it. De Spain realized that his helpless legs would not carry him farther. His hands, freezing to the pommel, no longer supported him. They finally slipped from it and he fell prostrate in the snow beside his horse. When he would cry out to her his frozen lips could mumble no words. It was the fight no longer of a man against nature, but only of an indomitable soul against a cruel, hateful death. He struggled to his feet only to fall again more heavily. He pulled himself up this time by the stirrup-strap, got his hands and arms up to the pommel, and clung to it for a few paces more. But he fell at last, and could no longer rise from the ground. The storm swept unceasingly on.

The Lady, checked by the lines wrapped on his arm, stopped. De Spain lay a moment, then backed her up a step, pulled her head down by the bridle, clasped his wooden arms around her neck, spoke to her and, lifting her head, the mare dragged him to his feet. Clumsily and helplessly he loosened the tugs and the whiffletree, beat his hands together with idiotic effort, hooked the middle point of the whiffletree into the elbow of his left arm, brought the forearm and upper arm tightly together around the whiffletree.

He drew the tugs stiffly over the Lady's back, unloosed the cinches of the saddle, pushed it off the horse and, sinking into the snow behind her, struck with his free arm at her feet. Relieved of the saddle, the Lady once more started, dragging slowly behind her thru the snow a still breathing human being. Less than an hour before it had been a man. It was hardly more now, as the Lady plodded on, than an insensate log. But not even death could part it again from the horse to which de Spain, alive, had fastened it.

The fearful pain from the tortured arm, torn at times almost from its socket, the gradual snapping of straining ligaments, the constant rupture of capillaries and veins sustained his consciousness for a while. Then the torturing pain abated, the rough dragging shattered the bruised body less. It was as if the Lady and the storm together were making easier for the slowly dying man his last trail across the desert. He still struggled to keep alive, by sheer willpower, flickering sparks of consciousness, and to do so concentrated every thought on Nan. It was a poignant happiness to summon her picture to his fainting senses; he knew he should hold life as long as he could think of her. Love, stronger than death, welled in his heart. The bitter cold and the merciless wind were kinder as he called her image from out of the storm. She seemed to speak—to lift him in her arms. Ahead, distant mountains rose, white-peaked. The sun shone. He rode with her thru green fields, and a great peace rested on his weary senses.

Lady Jane, pushing on and on, enlightened by that instinct before which the reason of man is weak and pitiful, seeing, as it were, thru the impenetrable curtain of the storm where refuge lay, herself a slow-moving crust of frozen snow, dragged to her journey's end—to the tight-shut doors of the Calabasas barn—her unconscious burden, and stood before them patiently waiting until some one should open for her. It was one of the heartbreaks of a tragic day that no one ever knew just when the Lady reached the door or how long she and her unconscious master waited in the storm for admission. A startled exclamation from John Lefever, who had periodically and anxiously left the red-hot stove in the office to walk moodily to the window, brought the men tumbling over one another as he ran from his companions to throw open the outer door and pull the drooping horse into the barn.

It was the Indian, Scott, who, reading first of all the men everything in the dread story, sprang forward with a stifled exclamation, as the horse dragged in the snow-covered log, whipped a knife from his pocket, cut the incumbered arm and white hand free from the whiffletree and, carrying the stiffened body into the office, began with insane haste to cut away the clothing.

Lefever, perceiving it was de Spain thus drawn to their feet, shouted, while he tore from the blade of Scott's knife the frozen garments, the orders for the snow, the heated water, the warm blankets, the alcohol and brandy, and, stripped to his waist, chafed the marble feet. The Indian, better than a staff of doctors, used the cunning of a sorcerer to revive the spark of inanimate life not yet extinguished by the storm. A fearful interval of suspense followed the silence into which the work settled, a silence broken only by the footsteps of men running to and from the couch over which Scott, Lefever, and McAlpin, half-naked, worked in mad concert.

De Spain opened his eyes to wander from one to the other of the faces. He half rose up, struggling in a frenzy with the hands that restrained him. While his companions pleaded to quiet him, he fought them until, restored to its seat of reason, his mind reasserted itself and, lying exhausted, he told them in his exquisite torture of whom he had left, and what must be done to find and bring them in.

While the relief wagons, equipped with straining teams and flanked by veteran horsemen, were dashing out of the barn, he lapsed into unconsciousness. But he had been able to hold Scott's hand long enough to tell him he must find Nan and bring her in, or never come back.

It was Scott who found her. In their gropings thru the blizzard the three had wandered nearer Calabasas than any one of them dreamed. And on the open desert, far south and east of the upper lava beds, it was Scott's horse that put a foot thru the bottom of the overturned wagon box. The suspected mound of snow, with the buried horses scrambling to their feet, rose upright at the crash. Duke crouched, half-conscious, under the rude shelter. Lying where he had placed her, snugly between the horses, Scott found Nan. He spoke to her when she opened her staring eyes, picked her up in his arms, called to his companions for the covered wagon, and began to restore her, without a moment of delay, to life. He even promised if she would drink the hateful draft he put to her lips and let him cut away her shoes and leggings and the big coat frozen on her, that in less than an hour she should see Henry de Spain alive and well.

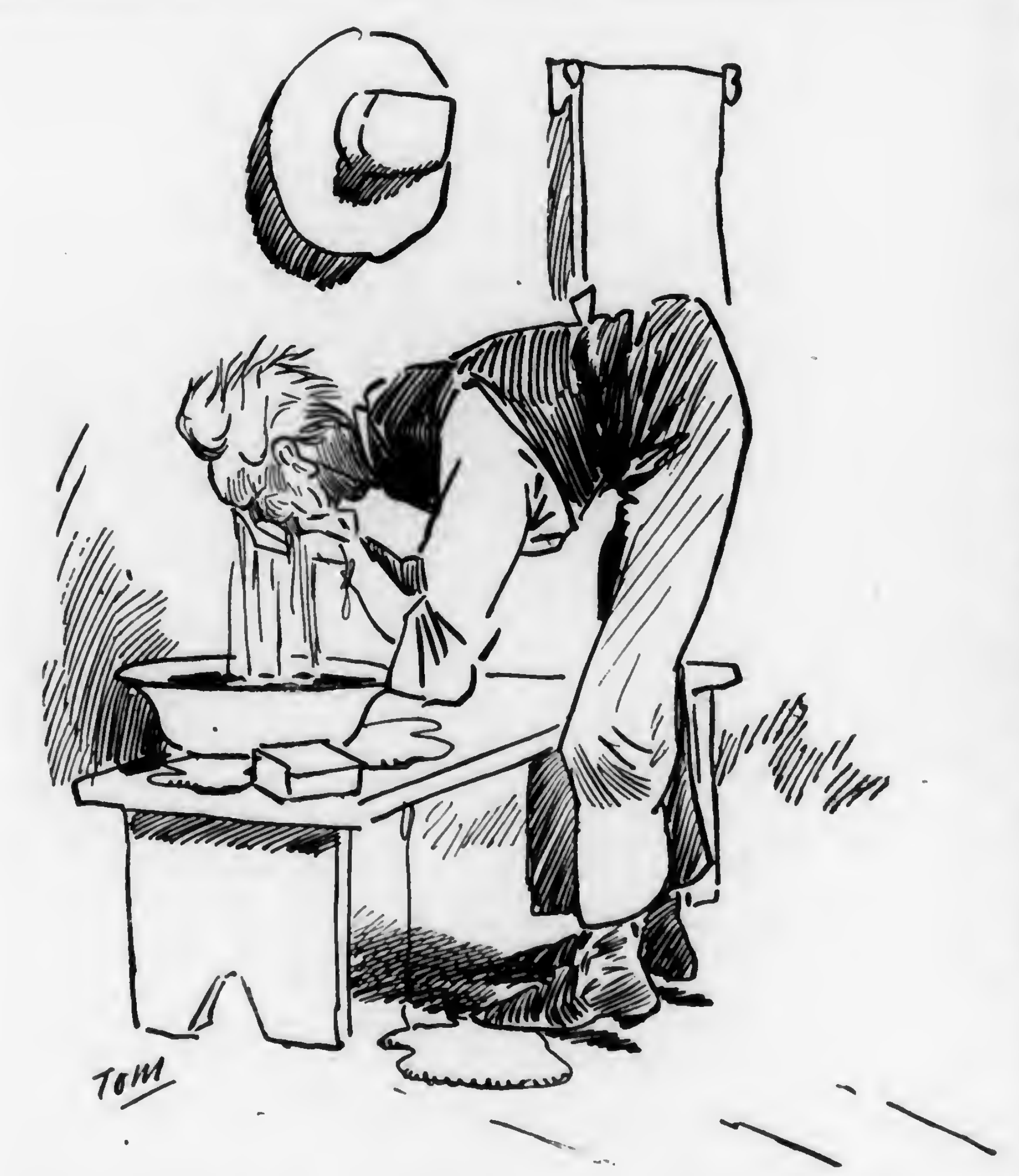
(To be concluded.)

REMINDERS

Now is a good time to plan for bees and to make arrangements to have colonies ready for work next summer.

Health is a national asset. Guard it as a patriotic duty because more is expected of each person in war times. The best ways to good health are plain nourishing food and plenty of fresh air.

A good windbreak of evergreen trees on the side of the barn toward the prevailing cold winter winds helps to save the feed bill. The stock will not need so much heat-producing feeds to keep them warm.



Uncle Amos Says: "We've got a bath room all rigged up fine, an' it often comes in mighty handy, but for real enjoyment, an for gettin' the sleep out o' yer eyes quick, I like a tin basin filled with fresh, cold water on the back porch. The feller who souses his face that way every mornin' is able to think pretty straight the rest of the day.

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Engineers, farmers, mechanics—men who do world's work of every sort every day—wear loose-cut, roomy guaranteed Blue Buckle OverAlls for work *comfort* and work *economy* because they are scientifically "oversize" where strain, twist or pull hits hardest!

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Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service, Dept. of Labor

Easy to figure the Profits
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160 ACRE FARMS IN WESTERN CANADA FREE

Where in **Western Canada** you can buy at from **$15. to $30. per acre good farm land** that will raise **20 to 45 bushels to the acre of $2. wheat**—it's easy to figure the profits. Many Western Canadian farmers (scores of them from the U. S.) have paid for their land from a single crop. Such an opportunity for **100% profit** on labor and investment is worth investigation. Canada extends to you a hearty invitation to settle on her

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Udder Trouble. — Several of my cows have imperfect udders. In either one or more quarters there is a hard meaty sort of bunch and from this quarter only about one-half as much milk comes as should be milked. In two of my cows there appears to be a hard bunch at lower part of quarter and upper part of teat which is movable. It seems to block the milk channel, making milking a little more difficult. Then I have another cow that has very small teats. She occasionally gives bloody milk. I wish you would in a general way give me a few helpful hints as I am an inexperienced dairyman. I have been helped by reading your veterinary column. M K G., Espyville, Pa.—In the treatment of chronic udder ailments such as you have in your dairy, you had better apply one part iodine and fourteen parts fresh lard or lanolin Whoever makes the application should rub a small quantity of the ointment well in directly over bunch, three times a week. This same application will have a good effect in reducing the obstruction in upper part of teat. The small teated cow that occasionally passes some bloody milk is perhaps roughly milked. One cows very often hooks and injures the udder of another cow; besides, colts should not be allowed to run with cows as they frequently kick and injure cows' bags. It is also important to have an even stall floor well supplied with bedding. This is a protection to the udder.

Pin Worms.—I have two horses, 6 and 7 years old, that are troubled with pin worms. These horses are not worked hard, are well fed, but refuse to lay on flesh. C. S., DuBoistown, Pa.—Flush out rectum with 1 part coal-tar disinfectant and 49 parts clean tepid water, twice a week for three weeks. Give each horse one teaspoonful powdered sulphate iron and a tablespoonful ground gentian at a dose in each feed for not less than three weeks and your horses will be pretty much free of all kinds of worms

Stricture of Trachea—Followed by Death.—A few weeks ago we had a yearling hog nearly fat enough to butcher. He suddenly refused to eat. He seemed to suffer considerable at first, then became more or less insensible to pain or his surroundings. When driven around his pen he walked well, but his throat was swollen, his breathing gradually became more difficult until he finally choked and died. Upon examination of the windpipe I found it hardened and closed. This week a neighbor, a half mile away, lost a half-grown sow from same ailment. Can this disease be either prevented or cured? A. J. P., Spring Creek, Pa.—Doubtless your hog injured his windpipe by perhaps rushing against some hard substance, which resulted in closing of windpipe and death. Some such cases can be relieved by surgical assistance; however, it is generally good practice to order the pig slaughtered while the carcass is good for food.

Pig Chokes.—I have a pig which is 4 months old. He occasionally has a peculiar spell of choking, as it were, after he has been eating for two or three minutes. He suddenly stops eating, throws up head, moves in a circle, acts as if going mad, but in a minute or two goes back to trough and commences eating as if nothing had happened. These hogs are in the pink of condition and have been treated for worms. W. C. C., Great Bend, Pa.—The writer believes that your pigs are healthy, but you doubtless know that growing pigs have a great appetite, very likely to eat too fast and fill their mouths too full of food. If their feed is warmed, made more sloppy and spread out thin, they will not be so likely to choke.

Bone Spavin.—I am anxious to know what will cure bone spavin and not leave a scar. I see so many horses that have been treated for spavin lameness, most of them have bald patch on hock where no hair grows. This always seems to attract attention. M. S., Middletown, Pa.—First of all, let me say that one of the reasons why so many spavined horses do not recover from their lameness is because they are exercised or worked while the treatment is going on. If fast driving or heavy pulling caused the spavin, is it not rational to remove this exciting cause and give him rest? There are many commercial spavin remedies on the market. Most of them possess more or less merit, but they are not always properly applied. Too much medicine is often put on. When you apply a severe blister, see that the horse does not bite the blistered parts and make a permanent scar and bald patch. Apply one part red iodide mercury and four parts lard every two weeks, or you can safely apply any one of the commercial remedies regularly advertised in this paper.

Barren Cow.—I have good cow that fails to breed. I have applied the soda treatment a few hours before service without results. We have no good syringe for applying treatment of this kind. F. S. L., Girdletree, Md. —If you will dissolve two ounces boric acid in one gallon clean water, which has previously been boiled, then use fountain syringe, or ½-inch rubber tube with tin funnel, you will perhaps succeed in getting her with calf. She should be treated 3 or 4 hours before service. It might be well to change bulls.

Partial Loss of Power.—I bought a pair of pigs which were farrowed in September. They were weaned at 5 weeks. Both did fine until severe cold weather set in. Since then they commenced choking and coughing and showed signs of not doing well. One of them died. The other coughs and wheezes, has poor use of hind legs, and is not doing well. He switches tail and acts as if he might be wormy. He will weigh about 75 pounds, is fed bran and shorts. His bowels are costive and he has rather poor control of his hind quarters. J. S. F., Williamsport, Pa.—Feed him oats, oil meal, tankage and skim milk. Hand rub back and hind quarters. Give him five drops fluid extract nux vomica and ten grains acetate of potash at dose in feed or swill, two or three times a day. Keep him dry and warm.

Rheumatism.—Please tell me what to do for a pig that is perhaps troubled with rheumatism. One of his hind legs and one fore leg are affected. The muscles seem to have contracted. J. A. C., Belleville, Pa.—First of all you should keep the pig in a warm, dry place. His bowels should be kept open and his feed should be changed. Give him five grains sodium salicylate at dose, three times daily. Apply equal parts turpentine, aqua ammonia and raw linseed oil to lame quarters every day or two.

COUNTY NOTES

Broome Co., N. Y., (S.E.) Feb. 1.—Weather continues at zero and below. Heavy snow has blocked roads and railroads. Coal is very scarce. Wood in 12- to 14-inch lengths brings $3.50 to $4 per cord. Wells are going dry. Many are having trouble with frozen water pipes as the frost has gone to unusual depth. Many potatoes have been frozen in cellars. Farmers are running oil stoves or wood stoves in cellars to prevent vegetables from freezing. Potatoes, $1.50 bu; butter, 52@58c; eggs, 62@65c; apples, $1 to $1.50 bu; cabbage, 2@3c [illegible]; flour, $10.70 to $11.60 bbl. Report says that the highway department is expected to keep highways open for autos all winter. This will be fine as they have not been able to keep them open for sleighs so far.—C. H.

Cumberland Co., N. J., (S.) Feb. 4. —Continued clear and cold. We have had the coldest winter in the memory of our oldest people. Twenty-seven inches of snow in January. Have had good sleighing for a month which is very unusual in this section. Many potatoes are frozen in cellars. Buyers are now offering $1 per bushel for potatoes. Corn, $1.65; wheat, $2.20; oats, 90c; milk 7½c per quart at the barn. Not much work being done on the farms. Several carloads of stable manure are standing on the sidings. Farmers can not haul it on account of the deep snow. —E. H. Sheppard.

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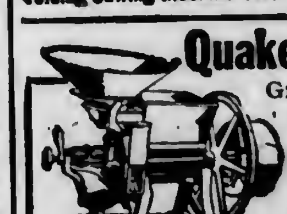
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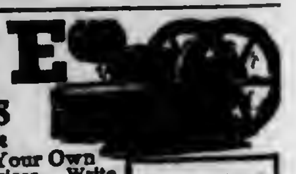
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Wanted at Once first class herdsman for pure bred Jersey herd. Also dairyman to assist in milking and do milk house work. Married or single, exempt from draft. Must have good references. W. H. HAINES, Mgr. Dover, N. J.

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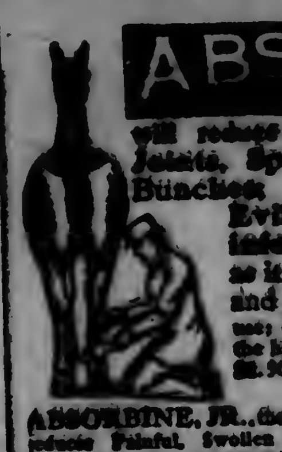
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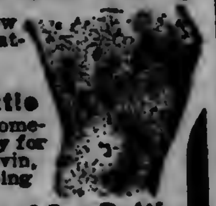
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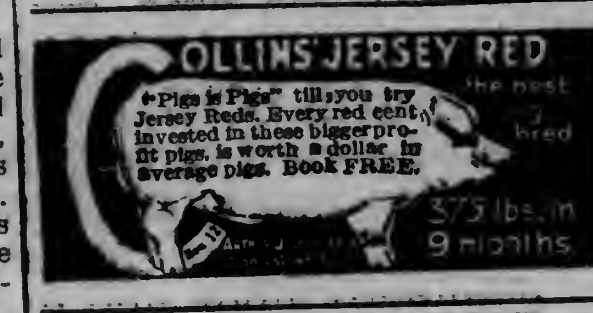

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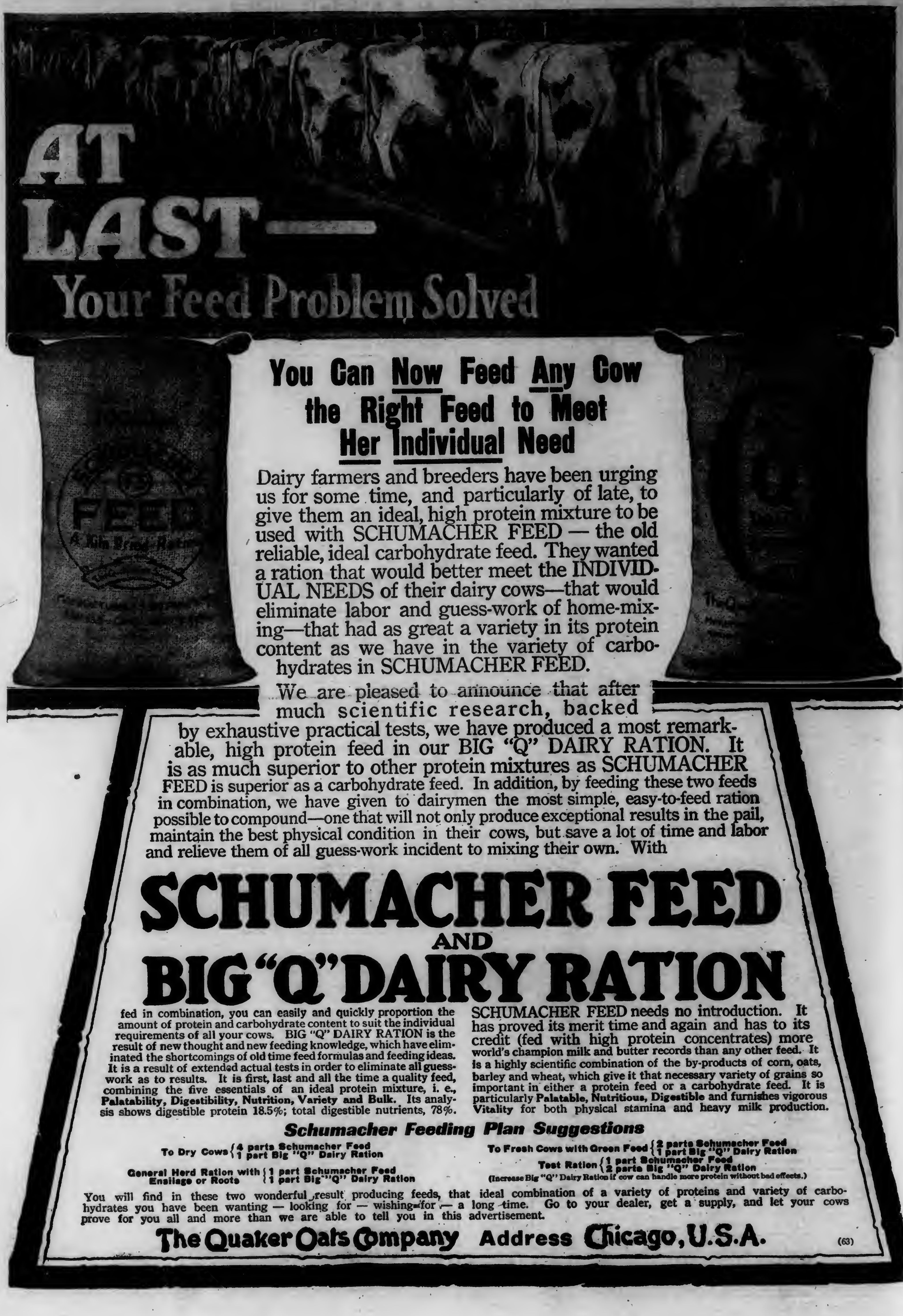

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BIG "Q" DAIRY RATION

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What To Do With The Old Orchard

Securing Fruit For The War-Time Ration

By J. P. STEWART
PENNSYLVANIA

The question, what should be done with the old orchard, might be answered by some people at once by saying, "Let it alone; fruit is of no consequence in the present crisis; forget the orchard, and put all your strength into growing wheat."

But how many of these people are aware of the fact that the old orchard, or any other orchard in bearing, may be an important and highly efficient means of producing food? How many realize that the food or energy of six bushels of apples is actually greater than that of one bushel of wheat, and hence that a 300-bushel crop of apples, which is only a reasonable yield for an acre, contains more than double the actual food furnished by a 25-bushel crop of wheat? How many of them also know that the other values of fruit in the diet—as an appetizer, as a diluent of the heavier and more concentrated foods, as a carrier of the new-fangled vitamines, and as an aid to digestion generally—are always much more important than its actual food value. How many know the relative purchasing power of the two crops? How many realize the number of years that it takes to produce an orchard and how quickly it can be ruined thru neglect?

Some of these facts it seems were also overlooked by our allies, in the early stages of the war, with some very unfortunate effects on the health of their soldiers. Is this policy to be repeated in our own country, or will it be realized in time that not all of the present duty and opportunity is to be found in increased production of the cereals? This does not mean that any less attention should be given the cereals, but it does mean most emphatically that the increased attention to the cereals should not be secured at the expense of the fruit.

Assuming then that the orchard is not to be wholly neglected, but on the other hand is to receive some special attention this season, we return to the original question of what should be done with it. The answer naturally depends on the character of the orchard. If the trees are still sound, of good varieties, and not too woefully tall, they can usually be made useful and profitable within a short time, by three operations; viz., proper spraying, pruning and fertilizing. If the trees are not good enough to justify these measures, it will undoubtedly be best to dig or blow them out, use the wood for fire or for saw-handles or similar purposes, and develop a new orchard in its place, tiding over the early years by means of a suitable system of annual intercrops, such as potatoes, beans, tomatoes or buckwheat. The essential features of the three important operations are as follows.

Pruning

Where the trees are worth caring for, the first step is to get them properly pruned. This is not a serious matter if a few general facts are kept in mind. The work can be done any time during the year, but the dormant season is generally preferable because one can see what he is doing better when the leaves are off.

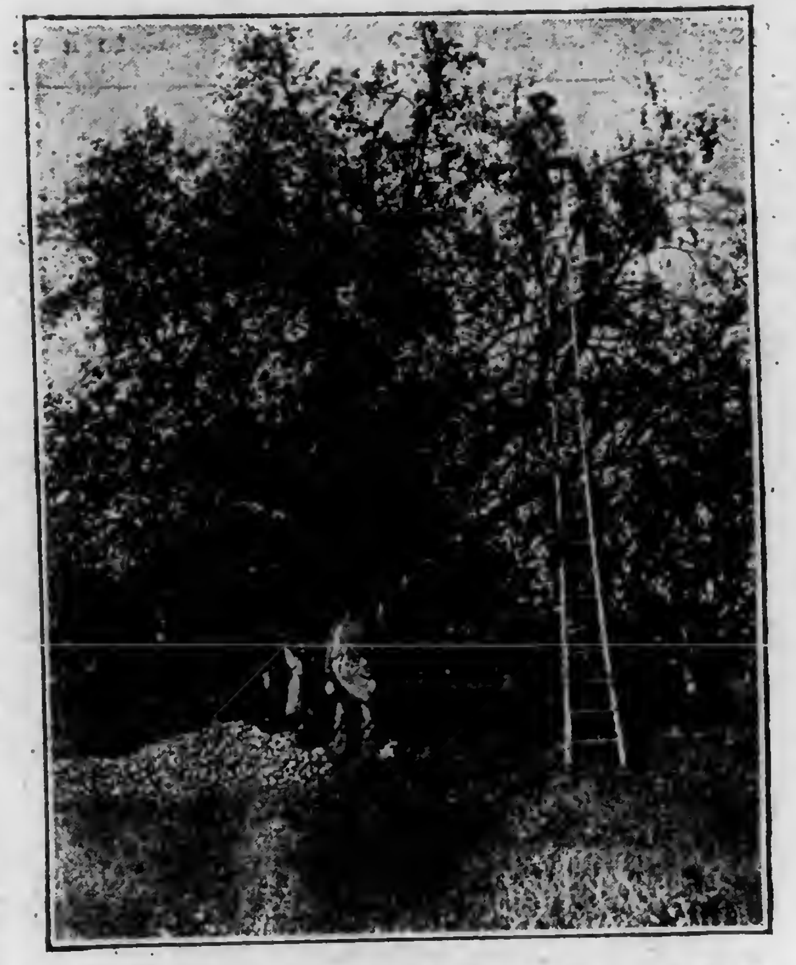


Fig. 1.—At Least Half of Top Should Come Off

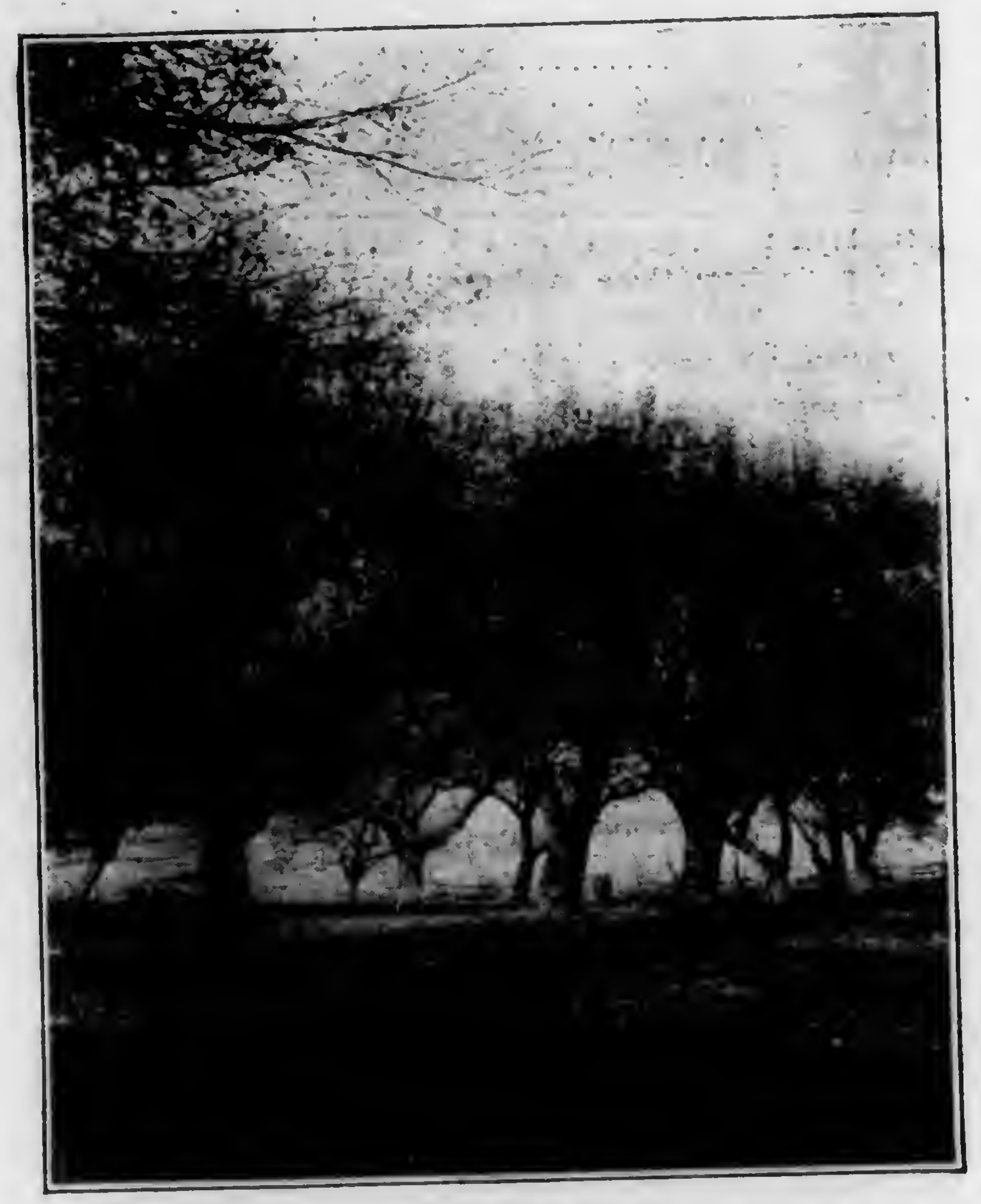


Fig. 2.—First Summer After Heavy Renewal Pruning

Not all pruning is beneficial, however. On the contrary, much of it is quite the opposite. This is largely because the average operator has no conception of what constitutes a well-pruned tree. He therefore simply cuts and saws away at the limbs and spurs within most convenient reach. It is always easy to cut off the fruit spurs, and they make the limbs look so woolly. He keeps this up until he has developed a series of bare limbs with tufts of branches at their tips, which are usually well out of reach of everything except the birds and insects, and the limbs themselves are seriously exposed to sun-scald and resulting infection.

In the hope of reducing the prevalence of this style of work, we may suggest that a tree is well pruned when the bearing wood is kept low and well distributed thruout the top, when the top is open enough to permit some light to reach practically all the fruit but without endangering the trunk or the main limbs to sun-scald, and when there are no stubs, weak forks nor long, bare "cow-tail" branches in sight.

The amount of wood to be taken out of a tree naturally depends on its general condition. In general we prefer to do the least amount of cutting possible and still secure the desired effect. Such a tree as that shown in Fig. 1, however, could readily part with at least half of its top, and this reduction would really be necessary for any satisfactory renewal. The effects of such a pruning are shown about six months later, in Fig. 2.

In the later handling of such trees, considerable care is required to avoid either too dense or too sparse a growth. It is probably best in such cases to thin out the sprouts to a distance of about a foot apart the first spring after the heavy pruning, and then head back and treat the sprouts retained much as if they were young trees. These sprouts should then be thinned further as crowding develops, so that they will ultimately stand approximately eight feet apart, at which time the top should be practically renewed, if proper attention has been paid to cutting out the old wood.

Scars of considerable size will naturally be developed in pruning of this sort, but careful experiments indicate that they will heal quickest when the cuts are simply made smooth and close to the parent branch, and the scars are left untreated. If some treatment is desired on the larger wounds, however, melted grafting wax applied with a brush is probably the best and safest. In cutting off the large limbs also, it is always important to cut upward from the lower side for at least one-third of the total thickness, so as to avoid serious splitting and peeling of the bark and wood. Proper pruning also materially

(Continued on page 8.)

Our Farm Manure Losses

Potash Production Growing, But Far Below The Waste in Farm Manures.

By BAIRD HALBERSTADT

SCHUYLKILL COUNTY, PA.

Never in history has the American farmer occupied the peculiarly responsible position that he does today. His products must feed our Army and Navy at home and abroad, our own people, and to a large extent, the Armies and Navies of our Allies, as well as millions of the inhabitants of the Allied nations. It is a tremendous task but the American farmer has never failed to "make good", nor will he, in this case, unless hampered by lack of labor and conditions over which he has no control.

For many years, Germany enjoyed a monopoly in the production of potash and potash salts. It practically furnished the world with these products. Perhaps Germany believed that she could starve her opponents into subjection by placing an embargo on this product. The United States was the largest foreign consumer of these products. Our dependence upon Germany for potash was appreciated a few years ago by the heads of some of the officials at Washington. The Department of Agriculture and the U. S. Geological Survey caused searches to be made for deposits of potash in the United States and its possessions, and also to investigate sources of supply and methods by the use of which potash could be recovered.

This was originally begun because of the exaction of the German Potash Syndicate. The rich deposits of potash at Stassfurt cover a wide area, and are of great thickness. They are readily and cheaply mined, and their products were placed on the markets of the world at a figure which defied competition. Hence little or no effort was made to produce potash in the United States.

Research work has been successful in a measure, but the production up to the present time indicates that but 10 percent of the annual normal importations, prior to the war, have been attained. Thru the courtesy of the U. S. Geological Survey, I am able to present some facts and statistics of much interest.

Potash Production

"More potash has been produced during the first six months of 1917 than was made during the entire year 1916. The reports received have been reduced to terms of the commercial unit commonly used to measure the available or water-soluble potash (K2 O) in the product, and only material actually sold by the producer during this period is included. The weight of the materials handled was therefore much greater than represented by these figures. A summary of the production of potash in the United States for January to June (inclusive), 1917, is given in Table 1.

"This table includes practically all potash produced. The Nebraska alkali lakes still lead, having yielded about one-third the entire production. There are now at least four important operators in this field. The production from Searles Lake, Cal., would undoubtedly be materially assisted by passage of the legislation now before the House of Representatives dealing with the leasing of potash-bearing lands. Continued uncertainty as to the status of titles to this property has hampered development of this important deposit.

"No production is reported from feldspar or other silicate rocks, but considerable quantities of potash salts and potash-bearing fertilizers were obtained from the dusts in cement mills and blast furnaces. The production from kelp was about 15 percent of the total. as it was in 1916. Potash from distillery slop and other organic sources made 15 percent or more of the total. The production of potash from wood ashes, including 'first sorts', 'pearlash', and other grades, is supposed to have been much greater than it was in 1916, but reports from these producers have been much delayed and the figures obtained thus far are probably not representative. The potash made from wood ashes thus far reported amounted to 222 tons, which is assumed to average at least 50 percent potash.

"The prices quoted range from $3.50 to $6 a unit, a unit meaning 1 percent of potash in a ton of the material as marketed; that is, a product carrying 25 percent potash may be sold at $4 a unit, which would be $100 a ton for the material marketed. The figures given seem to indicate that the production for 1917 will exceed 25,000 tons of potash or two and one-half times that made in 1916. This is about 10 percent of the average normal yearly consumption of the country before the war, showing the need of further stimulating domestic production of potash."

Table 1

Source	Available potash Short tons	Value at point of shipment
Natural salts or brines	7,749	$2,808,240
Alunite and dust from cement mills and blast furnaces	1,867	746,576
Kelp	2,143	1,348,095
Distillery slop, wool washings, and miscellaneous industrial wastes	2,153	876,714
Wood ashes	111*	84,414
	14,023	$5,864,039

* Only 25 reports of production from wood ashes have come in, some of the larger producers not having made returns.

Table 2

	April 25th, Pounds	Sept. 25th. Pounds	Los Per cen
Gross weight	4,000	1,730	57
Nitrogen	19.60	7.79	60
Phosphoric acid	14.80	7.79	47
Potash	36.00	8.65	76
Value per ton	$2.80	$1.06	62

Table 3

	April 25th, Pounds.	Sept. 25th Pound.	Loss Per cent
Gross weight	10,000	5,125	49
Nitrogen	47	28	41
Phosphoric acid	32	26	19
Potash	48	44	8
Value per ton	$2.29	$1.60	30

A Billion-Dollar Waste

Ten years ago I was made an official of the Pennsylvania State Board of Agriculture. At the very outset I was impressed with the lack of care in handling farm manure. I have been calling the attention of the farmers to this subject ever since. If the subject was important a few years ago, it is vastly more important at the present time. In a recent issue of a prominent farm paper there appears a well prepared article on this subject. Following is a quotation:

"An enormous amount of plant food is being wasted annually by improper handling of farm manure. Secretary Vrooman recently declared that, 'Our billion-dollar manure waste is the world's greatest economic leak.' High prices of farm products have made it especially profitable to keep the land in a fertile state. If this is not attained with farm manure it will mean the use of high priced commercial fertilizers.

"The New York State agricultural society has called upon farmers to help save the Empire State's share of this enormous loss, which the society estimated at $28,750,000. This means a loss of about $130 yearly to the average New York farm, the greater part of which could be saved. These figures are not mere wild guesses but conservative estimates. 'Recent investigations,' states Mr. Vrooman, 'indicate that at least one-half of this great wealth of fertilizing material is lost.' Here, then, is a big problem in war thrift for every farmer. Some of this loss is unavoidable, but the greater part of this wasted fertilizer can be saved."

There are approximately six million farms in the United States. This being so, it means that if this loss be distributed among them, the average would amount to $166 to each farm annually. As the greater part of the waste is avoidable, the situation is appalling. This waste must cease or famine will sooner or later stalk thruout our land.

The United States, up to the present time. is producing but 10 percent of her potash requirements. The accustomed sources of our supply are cut off, yet in spite of this we are wasting millions of pounds of potash by permitting our barnyard manure, so rich in potash, nitrogen and phosphorus, to give up the greater part of its most valuable plant food elements to the air, the streams, and to places where it is of no benefit.

The accompanying tables deserve most serious attention and study. It does not seem businesslike to permit the plant food made on our farms to waste when it can be saved, and later go into the market and buy commercial fertilizers to replace what we practically threw away. That is exactly what some farmers are doing. The outlay required to prevent this waste is not great and it would be the best and safest investment you can make.

In the Trenches. Preparing to Defeat the Enemy—Water

Saving Manure

Stable floors should be water tight and concrete gutters in the rear of stalls should slope sufficiently to permit the liquids to flow toward a cistern, tank or other receptacle, where it can be collected. The liquid manure contains the plant food in the more readily available form and is the more valuable.

There is some difference of opinion among farmers as to best time of spreading. Some prefer to haul it, weather conditions permitting, to the field daily or several times each week, dependent upon the quantity. Others prefer to store it in pits or sheds and haul the entire amount at once. Labor is saved by depositing the manure directly onto a wagon or spreader instead of dumping it into a pile, as it need be handled but once. Before hauling to the field the manure should be sprinkled with the liquid from the tank and immediately hauled out for spreading. A spreader is preferable as a more even distribution can be made. If the manure is not to be hauled out frequently, it should be stored under cover, where neither rain nor the direct sunlight can reach it for, in this case, both are destroying elements.

One of the best farm investments one can make is the construction of a shed with a good roof and a concrete floor sloping from all corners to the center. A concrete curbing, sufficiently high, should surround three of the four sides to prevent escape of the liquid matter. The pile should be compact, and if the manure is held for any considerable time, it should not be permitted to dry out. Absorbents, such as phosphate, raw or acid, should be used, and the pile kept moist to prevent losses.

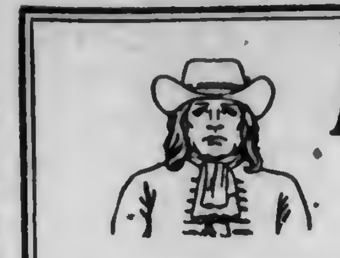
Losses are due to leaching, evaporation, fermentation and the washing away from the pile. Experience shows that better results are obtained by hauling the manure to the fields as it is made, rather than by waiting until a large quantity collects. The losses due to exposure in the barnyard are greater than those in the field, even if the fields on hillsides be covered with snow, for the plant food leached out or washed away will be partly saved at least, which is not true when it is left exposed in the yard.

The U. S. Department of Agriculture has estimated the annual value of manure of live stock, if preserved, per animal, as follows: Horse manure, $27; cattle manure, $19; hog manure, $12; sheep manure, $2.

Table No. 2, on preceding page, gives the losses in horse manure placed in a pile and No. 3 gives similar figures on cow manure.

Are we so rich that we can afford to throw away or, thru avoidable causes, lose annually over $100 from each of our farms? You farmers work too hard for your money. Stop this avoidable waste. **Remember that the former source of our potash is closed against us. We can not, for some years, at least, expect, even with war prices and their uncertainty prevailing, to produce enough to supply our own requirements. Upon the American farmer rests the destiny of this and other nations. If thru any cause you fail, we may expect to see the passing away of democracy and American institutions. Let us realize fully the terrible crisis we are facing today, and let every patriot "do his bit". If we do, in the end we will win and those who have given their life's blood to make this the greatest, the best and noblest nation upon Earth shall not have died in vain.—(Read before Pennsylvania State Board of Agriculture.)**

Manure is wasted by seepage of liquid manure in stables, by leaching in the open yard and by heating or firing in loosely formed piles about the barnyard and in the field. Authorities estimate that the anual loss of manure by careless management is $708,446,000.



By the Way

By

Father Penn

Under the stress and excitement of an emergency people often do very foolish things. For instance, we have heard of people taking time to dress to the last detail when the house was on fire; of others throwing the mirrors out of the second story window and carrying pillows carefully down the stairs. Innumerable instances could be cited to show how inconsistent men may act under strenuous circumstances. These are strenuous times and it is not hard to discover many acts of inconsistency in line with the examples given above. They may be found among the rulings to conserve food, the regulation of prices, the employment of labor, the production of necessities; in all these lines we find examples of saving at the spiggot and wasting at the bung; or, in other words, conserving one thing at the expense of something of greater importance.

Such an example, it seems to me, is the order of the Food Administration prohibiting the sale of pullets and old hens from now until the last of April. Ostensibly, this was for the purpose of keeping the greatest possible number of hens laying during that period when many eggs are being used for hatching, the primary object being production and conservation of the greatest possible amount of food. Let us examine the question carefully and see whether the ruling is consistent with the purpose.

For years the best poultry raisers have been practicing and preaching the elimination of the poor layers and otherwise undesirable stock. As I write, a bulletin letter comes to hand from the Kansas Agricultural College and contains the following:

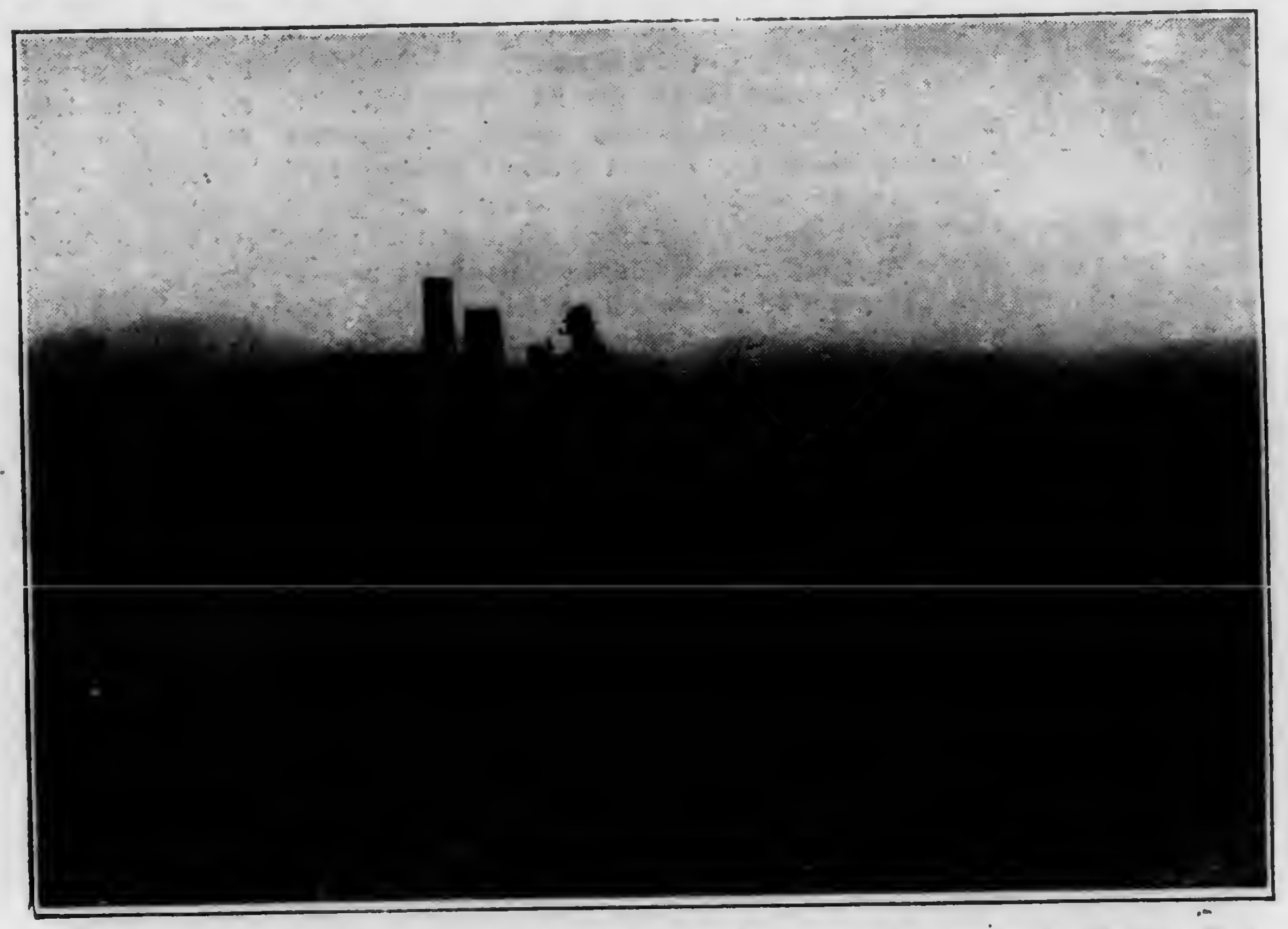
> "All hens lay fairly well in March, April and May. The poor layers seldom if ever lay in the months when prices are the highest. They are not commercial producers and should not be kept as breeding stock. All poor layers, undeveloped pullets, and otherwise imperfect birds shold be discarded prior to the breeding season."

For these reasons this class of birds should be sold off before the hatching season so that their kind will not be perpetuated and reduce the egg yield of future flocks. It might safely be taken for granted that farmers or poultrymen would not sell good-laying, profitable stock at this time of year, and since it was good business to sell off the other kind in normal times, it would be business now for the same reasons.

Another phase of the question, one equally important from the standpoint of economy, is the quantity of valuable feed required to get a few eggs from this class of poultry. We are told that the shortage of the small grains is the most serious factor in the whole food problem. Hens require about the same care and almost as much feed during the months affected by the prohibitory ruling as in winter. Even in normal times and with grain at normal prices, the total food value of eggs is not as great as the food value of the grain eaten by the hens laying them. The approximate efficiency of different animals as producers of human food varies with the kind of animal. The percentage of food in the material eaten by animals and returned in products as human food is: Dairy cows, 33.8 percent; hogs, 29.9 percent; steers, 14.8 percent; poultry, 12.6 percent. These figures are from "Dairy Farming", by Eckles and Warren. From them it appears that, of the animals named, poultry is the most uneconomical producer of food. For this reason it is difficult to make poultry pay even under normal conditions unless the flock can gather the greater part of its own living on free range. Where, then, is the economy in enforcing the consumption of precious grain to get in return a product of less food value than the grain consumed?

The enforced keeping of the class of poultry affected is an economic injustice to all concerned: To the public at large because the country's small grain store will be reduced by the amount required to feed them without a compensating gain in food; to the keeper of poultry because he will be required to feed expensive grain at a loss.

It is not merely the personal inconvenience, or the loss to the individual, which is the greatest resulting wrong done when fool laws are passed or when short-sighted officials pronounce unwise regulations. Production and the different lines of commerce are so inter-related that it is like pouring sand into the gears to drastically interfere with one branch unless the regulation shall be of such general character as to bear correspondingly upon all. So far, it is doubtful whether anything that has been done with a view to increasing the food has been effective, especially the laws and regulation which fix flat prices at the farm, or which interfere with the ordinary movement of farm products.



An 8-16 Tractor on Three-Bottom Plow in Alfalfa Sod on Walker-Gordon Farms, N. J.

How They Found Farm Labor

Following are reports of how several farm sections found farm labor to help handle crops last year. They furnish suggestions for other sections that may have to resort to similar methods the coming season:

A boy's camp was conducted near Phoenixville, Pa., where a two-week's training course was planned. According to reports these boys went at their work so earnestly and were so anxious to give satisfaction that it became difficult to keep them at the camp for the full period [illegible]ning—farmers [illegible]nted them before they had completed the prescribed course.

In Adams County, Pa., the apple crop needed pickers, and no labor was available. From two of the manual training high schools of Philadelphia forty-eight boys went to this section and worked in the orchards, living in camps which were in charge of supervisors from the school or Y. M. C. A., moving from orchard to orchard as they were needed.

Three boys' training camps were established in Suffolk County, New York, from 30 to 50 boys in each camp being available as farm help for the farmers in that community. Also the camps formed a "flying squadron", of eight or ten boys. equipped with an automobile and tents. The "flying squadron" went all over the county to farms

(Continued on page 27.)

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PHILADELPHIA, PA., MARCH 2, 1918.

Farmer Representation

Two practical farmers have recently been added to the Committee of Public Safety of Pennsylvania. Chester A. Tyson, of Adams County, and Morris Phillips, of Chester County, have been made members of the Committee staff. Both of these farmers will be in close touch with the general work of the Committee and will represent the farmers on all matters relating to state agriculture. Professor Rasmussen, of the Pennsylvania College of Agriculture, has also been taken on to handle matters relating to the dairy industry of the state. Any communications or appeals from farmers to the committee will receive sympathetic attention from these new members. This tardy recognition of farming in the state war councils will be greatly appreciated, even tho the action was so long delayed. It is to the credit of the chief officials of the Committee that they brought in the farmer representation that should have been taken care of by the Governor when the state body was first created.

* * *

Cheap Hides and Dear Shoes

Every one who has bought shoes during the past few years has wondered and fretted at the constantly increasing prices. Dealers would tell us that the decrease in the supply of hides and the increase in the foreign demand was the cause and that it was simply an example of the working of the law of supply and demand; so, we paid our money, took the shoes and went away sadder and—wiser?

However, there were suspicious persons; those who had a hunch that the law of supply and demand was not functioning properly, and the Federal Trade Commission was called upon to look into the matter. The Commission wanted to know why hide agents were offering lower prices on the plea that the market was overstocked, while shoe men were boosting prices because there was difficulty in getting leather. The Commission found that the slaughter of cattle and calves had increased 30 percent during the past five years. This confirms the statement of the International Institute of Agriculture that there had been no visible shortage of cattle up to 1916. The Commission reports that the quantity of hides stored by the "big five" Chicago packers increased 45 percent during 1916 and the first half of 1917. Stocks held by smaller packers showed a still greater increase. Imports of hides showed an increase of 70 percent in 1917 over 1912. A striking feature of the findings was that while Swift's paid 17 percent more to the farmer for his cattle in 1916-17 the price which Swift and Company put on their hides increased 35 percent. The Commission also found the stock of hides to be unusually large, while many tanning companies were running far below capacity, and that the price of hides is so high that they are not buying, hoping the price will fall.

As the export of shoes has fallen from 13,000,000 pairs in 1916 to 6,000,000 pairs in 1917, it is estimated that this offsets the demands made by the army.

Could not the Department of Agriculture give us some interesting information on this subject?

* * *

Will the Farmer Feed Them All?

A very popular song, one that is sung at almost every farmers' gathering is, "The Farmer Feeds Us All." We have seen many a farmer straighten up a little and throw out his chest while this song was being sung and join in the singing with gusto as if in acknowledgement of the tribute and in realization of his importance. And now comes the crucial test. Will he—can he—continue to feed them all? Will he make the utmost endeavor to put bread into all the reaching, empty hands, or will some of them receive a stone? We believe that he will meet the emergency. To believe otherwise would be to doubt the integrity of the American farmer. It would be to question his spirit of duty and patriotism. Because farmers resent unfairness, condemn injustice and indignantly reject much of the fool advice is no sign he will purposely fall down in the performance of his duty. The amount of farm products produced the coming year will be limited only by factors beyond the control of the farmer.

If in normal times, as has been said, the world is only twelve months distant from starvation, an inventory of the world's present food supply reveals the fact that we are just now much nearer than that. And if food is the pivotal point in the war and success depends upon its possession, the question becomes doubly important. Reports show that the supply on hands is far below normal altho the needs are greater than ever before and the demands will continue to increase. The amount of food in storage is from 5 to 83 percent less than at this time last year. We have reached the bottom of the granary and the prospects for next harvest's wheat crop are the most unfavorable in years, while the acreage is little more than that of 1914. We may as well realize fully the sore straights in which we find ourselves, and should heed the advice which the profane parrot gave to the preacher on the boat which had sprung a leak.

* * *

Uneasy Politicians

Apparently the politicians in wet states are kept awake at night scheming ways by which they may sidestep on the question of ratifying the prohibitory amendment. As we prophesied three weeks ago, the legislature of New Jersey postponed indefinitely any action on the amendment after it had passed a local option law. Facing complete rout, the liquor people are glad to accept local option as the lesser of two evils. The Maryland senate tabled the amendment after the house had voted favorably.

The question of ratification promises to be the dominant issue this year in the election in Pennsylvania. The state is being thoroly organized for the purpose of getting out the voters on primary election day so as to nominate men for the legislature pledged in favor of the amendment. The different temperance forces of the state are uniting as never before on this issue; even the Prohibition party will support other candidates for the legislature who are right on this question. Governor Brumbaugh is said to be considering the advisability of calling an extra session of the legislature, partly for the purpose of voting on the amendment. His opponents feel that it is more expressly for the political purpose of forcing a vote on the amendment and thus placing them on record. There is no need of incurring the expense for this purpose. The present legislature is already upon record as being opposed to restrictive temperance legislation, and Senator Penrose has consistently led the opposition.

There are reasons why an adverse vote by the proposed special session would be prejudicial to the movement, and a negative vote would be almost certain since only 72 voted for the local option bill last winter while 104 were required. An adverse vote would be bad from a psychological point of view since it would be discouraging at home, and would set a precedent for other states.

* * *

Eat More Milk

This is the slogan of an extensive advertising campaign being started in Philadelphia and proposed to extend over the state. Milk has never been fully appreciated as an article of food. Most people regard it merely as a beverage. In these days when we are called upon to give greater consideration to the food value of the articles selected to make up our diet, milk, in common with other foods, is being subjected to more careful study. Dieticians find that it is one of our most valuable foods. They find that it is one of our cheapest foods even at what seem to be high prices. They further find that milk carries considerable quantities of the elements that we are asked to save on—fats, sugars and proteids. This study has impressed the food experts and those charged with the conservation campaigns with the fact that we can save most economically by using milk more freely in the diet. Accordingly they are conducting a campaign of education to teach "conservation by substitution" of this wholesome food.

* * *

The Agricultural Program

Food is admittedly one of the most vital needs in our war program. The work in preparation of our army has been subjected to congressional investigation, and has been stamped as generally satisfactory. Work in the development and maintenance of our navy has been investigated and passed. The production of munitions has been approved. The shipbuilding program has been prodded and improved by frequent official inquiry. The agricultural program alone has been left to shape itself under the unrestricted, academic guidance of Secretary Houston.

Progress in army and navy preparation may be traced and checked from month to month. The production of ships and munitions is constructive business that can be measured by the numbers and quantity of the finished product. Progress in food production is a matter of seasons. The success or failure of a definite plan, and the disaster of the lack of any plan, is demonstrated only by the annual harvests. People in all classes are anxiously asking what the harvest will be for 1918. Farmers and public officials in close touch with farm affairs are plainly worried. If Secretary Houston shares in this concern he has not indicated it in his public utterances or in his efforts to clear the way to better conditions. His public statements, instead, indicate that he has a sublime faith in the farmers to maintain the maximum production in spite of all handicaps.

It is most complimentary to the farmers as a class and as individuals to expect them to overcome all difficulties in doing their full part in helping win the war. We believe absolutely that the farmers will do all they can, but the desired results would be more certain if some of the most urgent needs of the farmers had been heeded in time to bave been of help this year. Farmers can not forget that the first draft, without protest from the Secretary of Agriculture, took thousands of the best farm help that will be most sorely needed this year. They can not forget that the "deferred classification of skilled farm labor" in the second draft came largely as a result of an appeal from farmer representation without the slightest assistance or encouragement from the Secretary. They will not forget that the promise of help from furloughed soldiers, which is after all an uncertain promise, came thru the efforts of the Secretary of War rather than the Secretary of Agriculture who should have been alive to the urgent needs. They will not forget that such direct appeals as have been made to impress the Administration with the seriousness of the agricultural situation have been made in spite of, rather than with the assistance of, the Secretary.

There is every reason to expect that the year 1918 will provide a serious test of our war program. The heads of the various departments must expect to stand or fall on the success or failure of the branch of war industry under their supervision It is now evident that only a most favorable growing season can give us maximum crops this year. The crop of 1918, except as affected by weather conditions, will be the crucial test of Secretary Houston's administration.

HARRISBURG NOTES

Winter Breaking.—Reports coming to the State Department of Agriculture indicate that thanks to the snows, the winter crops have not been much harmed, altho it is feared that fruit trees, berry bushes, hedges, bees and chickens have suffered most. Inquiries made at the Capitol indicate that Pennsylvania farmers are preparing to do their utmost in food production this year in spite of misgivings as to where the labor is going to come from. The state authorities have been doing considerable work in providing seed corn and obtaining priority orders for machinery, fertilizers and other supplies, but their influence in regard to getting men on farms is more or less problematical. Live stock is generally reported as having weathered well.

Guard the Stock.—Steps to guard all live stock from diseases this spring are being taken by state and national veterinary officials. Efforts will be made to exercise a strict supervision over all stock sales. An outbreak of any stock disease under present conditions would be little short of a calamity. Dr. C. J. Marshall, our state veterinarian, has been made the ranking officer of the veterinary medical corps of the army.

Seed Testing Day. — The superintendent of one of the southern tier county schools proposes to set aside March 15 as seed testing day for corn. He urges that parents and teachers give their attention to these tests and that efforts be bent to get the youngsters interested. The sate's bureau of markets has bought and distributed thousands of bushels of corn at cost.

Sell Wheat and Potatoes.—Calls have been made by both national and state food officers for the wheat and potatoes now held in the barns to be placed upon the market. State officials say that they have reports indicating that many thousands of bushels have been held back and in view of the food crisis they are calling for offers.

Alliance Plans Questions.—It is going to be a strenuous year for candidates. The great mass of citizens is going to insist on knowing how every man stands on the dry amendment, and the women folks want to know how the woman suffrage amendment is regarded; the military training folks are about to interrogate and there will be a series of questions from high brows. The alliance recently formed between the governing spirits of the State Federation of Labor and the State Grange, many of them men who have been thru the legislative mill, is preparing a series of questions which will probably embody everything, prohibitory, equal taxation, highways, labor supply, regulation of utilities and other propositions. For the first time the urban and rural people are together in regard to asking of questions. The alliance is also perfecting the plan whereby the direct buying and selling system may be launched. The general scheme is to buy in carload lots direct from farmers and for farmers to get such things as they need in bulk.

Must Load Cans.—The Public Service Commission has flattened out railroads which have been insisting upon milk shippers being forced to load cans at milk stations by ordering that the railroad do that work themselves as is required in interstate traffic and in the regulations of Ohio and some other states. The railroads, says the opinion in the case, contended that it delayed trains to have their men do the loading, but the blunt statement is made that trains are generally late and it is unfair to require farmers and shippers to hang around stations waiting for a train which is not on good terms with its schedule.

Laws to Stand.—From all accounts there is not going to be much to the proposition that game and fish laws should be set aside for the period of the war on the specious plea that it would make food more plentiful. Advocates of conservation appear to have ended the plan. At this juncture there is too much being asked in the name of war.

Tractors About Ready.—The tractors ordered by the State Department of Agriculture to rent to farmers are said to be almost ready to ship and that they will be ready in a month. Just how the plan is going to work is interesting to many people. There will be forty tractors bought by the state and 100,000 farmers are short of hands. At the Capitol, it is said, the plan is to make a start and demonstrate the value of the tractor. After the tractors start and repairs are needed from bumping over stones and tearing up roots is where the rub will come in.

Curb Markets.—Efforts to boom the curb market are being made by committees in various parts of the state and the plan will be given a test in twenty or more counties. Last year the encouragement given to farmers and truck gardeners, heretofore dependent upon city growers and commission men, led to establishment of some very successful markets.

High Fire Loss. — According to data gathered at the Capitol the fire loss in Pennsylvania last year was higher than ever known and every effort is to be bent by half a dozen departments of the state government to check the damage. A general appeal for a spring clean-up that will include town as well as country and efforts to reduce fire hazards will be issued, supported by some facts and figures.

NEW YORK LETTER

California Eggs at Aution in New York.—The first auction sale of California eggs in New York City lasted two minutes, and the gross sales amounted to $10,942.35. The 15,000 dozen netted the producers after deducting $1,100 expressage on the car, and $55.95 war tax, $9,445, the producers getting their money the next day. The eggs brought 71½ cents a dozen for No. 1's; and 68½ cents for pullet eggs. This is an improvement on the old dealer method. California eggs in carload lots well-packed in straw and shipped by freight have sold in New York for a better price than state eggs because of better grading and better quality due to best shipping conditions.

Cannery Notes.—The canneries of Central and Western New York have been notified by the food administration not to contract for tomatoes at $20 a ton, a price unofficially agreed upon with growers. Whether the Food Administration expects to fix a higher or a lower price is not known. The government has requested 30 to 40 percent of the new pack, and many interrogations at Washington as to price remain unanswered. Before this $15 a ton, or $3 more than last year was offered for tomatoes in some sections. The Sodus Canning Co. has just closed, finishing on apples, while the Sodus Packing Co. is still operating, an unusually long season. The government announces that sufficient tin plate will be released so that canning companies may put up an additional 25 percent pack of dry and lima beans. The western part of the state had many wet or immature soft beans, which would spoil with warm weather. Canning will save much of this. Canners using dried fruits are finding state prices prohibitive, the kilns putting out only a 15 percent pack.

Produce Notes.—The potato situation is the farmer's present thorn in the flesh. Prices are on the decline, $1 per bushel at cars for graded potatoes, and those buyers who have not yet received their grading machines are paying 90 cents, as the tubers run. Government orders fix the minimum size at 1⅞ inches, while it takes 40 minutes at the very best and up to an hour or more per load to grade at the cars, with overheated horses obliged to stand in cold winds. If a potato passes thru the grader lengthwise, much larger potatoes than 1⅞ inches pass thru and are discarded, a big waste to the producer, tho perfectly good food. Farmers everywhere object to this short notice and high handed methods in grading, especially since the price only about half covers the cost of growing them. A crop far under normal will be planted next spring, it is agreed by farmers and agricultural leaders all over the state. Cabbage has brought $50 a ton the past week, but has dropped to $45. Much of the stock has been frozen. Eggs are dropping daily, groceries now paying 45 cents.

New Draft Ruling. — Since state grange, Farmers' Week and other rural organizations have called the attention of the government to the disastrous effect the draft was having on food production, the military officials have awakened to the fact that prompt action is necessary. The district board at Syracuse has received orders to place all men engaged in farm work previous to May 18, 1917, in Class 3, as skilled farm labor. The board had already passed on 2,300 claims under the new draft. The Governor at about the same time wired the various draft boards his alarm at the placing of farm labor in Class 1. It is hoped that the new federation of agriculture will not let farmers' interests go at loose ends in the future as has the draft question. If farmers had protested as vigorously six months ago as they do now the state would be about 12,000 farm hands to the good, and the war would have had double the support from these men on the farm it gets in the army. It was made very plain at Farmers' Week that man power and munitions are now far more easily obtainable for the carrying on of the war than is food with a shortage such as has never been known in food stuffs all over the world looming ahead.

State Census a Valuable War Aid. —The recent state census is not completely tabulated as yet. But its value to the war demands is becoming better known every day. Last year this state took its second annual census by school teachers and pupils, all volunteer work, aided by the state college in compiling the data. England was the first to benefit, asking for lists of her subjects here. At once 6,500 names were given her for looking up her subjects for military duty. That country says such a census at the beginning of the war would have saved thousands of her boys, by placing them where their abilities counted most. The state has been able to furnish lists of 100,000 enemy aliens to home officials; 1,800 cooks for the navy; 1,500 firemen and mechanics; 1,150 machinists; 68,397 men for shipbuilding; 2,400 butchers, bakers and cooks; 5,750 farmers and farm foremen for the Patriotic Food Commission; 153,000 men who wished to enlist in the army or guard, etc., thruout all the trades and mercantile industries. Besides this, most valuable data as to various crops, animals, fertilizers, feeds, seeds and sundry farm statistics were secured. Thirty-one states are taking a similar census this year. The new figures are awaited with much interest.

Dairymen Ask Change of Venue.—The officers of the Dairymen's League who were indicted on the charge of conspiracy to control prices fear prejudice in that city and have asked the Supreme Court for a change of venue.

Hay Breaks Record.—Hay hit the high mark of $32 a ton on the North Side Market, Syracuse, last week, because of the condition of the roads. No hens were sold, but live roosters brought 26 to 28 cents, eggs scarce at 75 cents.—F.

NEW YORK FARMERS' ORGANIZATIONS

A preliminary meeting of leading men in all the rural organizations of the state was recently held to draw up a constitution and elect temporary officers for a State Federation of Agriculture. On Wednesday of this week over 2,500 farmers, members of the Dairymen's League, Farm Bureau Societies, Granges, Horticultural and Vegetable Societies, Breeders' Associations and other rural organizations representing a membership of over 250,000 met to complete the organization and take action on public policies now threatening agriculture. This will be a permanent organization to protect the farmers' interests. The officers are S. L. Strivings, chaplain of state grange, president; Samuel Fraser, official of the Western New York Horticultural Association, vice-president; Seth Bush, Secretary, well known as president of the New York State Horticultural Society. The latter is author of the "Bush Resolutions", which have stirred the Senate by their criticism of the Governor's policy in appointing politicians for the new state Council of Farms and Markets. These resolutions have been adopted by the leading farm organizations of the state. They also demand the resignation of Charles H. Betts, secretary of the Council. It is thought that these vigorous measures are soon to receive the attention they demand, as office holders are alarmed over the stand taken by the farmers, and are showing conciliatory attitudes in many smaller items. Nothing is to be done at Albany in the way of farm legislation until after the farmers' new federated association reports, and probably not until after a conference by the members of the Council of Farms and Markets.

The second organization is also a federation of 15 rural organizations under the name of the Farmers' General Sales and Supply Company. It is for the purpose of concentrating the business of the farmers, buying and selling in carload lots, and distributing and receiving thru local organizations of a similar nature. The work has already begun and several carloads of supplies have been distributed at considerable saving to members. During the next six months it is expected a large volume of business will be done. By thus co-operating, better transportation consideration is expected from railroad managements. The president of the new sales federation is Edwin T. Cassler, Merrifield; secretary, C. E. Embree, Utica; manager and treasurer, Frank Dorn, Boonville.

PRICE CORRECTION

The swine advertisement in recent issues over the name of C. H. Carter, Whitguern Farm, West Chester, Pa., should have read $100 each for bred sows and gilts, instead of $1.00 as it appeared.

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Poultry

TURKEY RAISING

For several reasons the number of turkeys in the United States is decreasing. According to the census of 1900 there were in the United States at that time 6,594,695 turkeys, while by 1910 the number had decreased to 3,688,708. Poultry dealers thruout the country state that the decrease has continued ever since the last census. The principal cause of the decrease is that as the population of the country increases farming becomes more intensive, and every year the area of range suitable for turkey raising is reduced. Many turkey raisers have given up the business principally because their turkeys range thru the grain fields of adjacent farms and thus cause the ill will of the owners thereof. Furthermore, the high mortality among young poults as ordinarily cared for on the farm, the outbreaks of disease, particularly of blackhead, among the turkeys in certain sections of the country, together with serious losses resulting from the presence of predatory animals in other sections, have tended greatly to discourage the turkey industry.

For those who are favorably situated for raising turkeys a more profitable side line can hardly be found. Given plenty of range, turkeys will readily find grasshoppers and other insects, green vegetation, the seeds of weeds and grasses, waste grain, and acorns and nuts of various kinds. In this way the cost of raising them is very small and the profits large. Grain and stock farms are particularly well adapted for turkey raising, and it is on such places that most of the turkeys are found. Plenty of range is essential to success in turkey raising. Little has ever been done in the way of raising turkeys in confinement, and when it has been tried the results have been discouraging.

The marketing season for turkeys is very short, running from the middle of November to the latter part of December. Most turkey raisers sell their birds alive to poultry dealers, who either dress them or ship them alive to city dealers. Farmers near the city markets, and particularly those in the Middle Atlantic and New England States, often dress the turkeys and either sell them direct to the consumer or to city dealers. In some sections shortly before Thanksgiving there is held what is known as turkey day. On the day before this event every turkey grower in the neighborhood kills and dresses his turkeys and the following morning brings them into town, where they are bid on and purchased by whatever buyers choose to be there, the birds going to the highest bidder.

In sections in which turkeys are grown in large numbers, as in Texas, dressing plants have been built by poultry dealers, who buy the birds alive and dress them for the city markets. In such cases practically all the turkey raisers sell to these dealers, who often send buyers out into the country to gather up a drove of several hundred birds by stopping at each farm as they pass, weighing whatever turkeys the farmer may have to sell, and adding them to those already collected. Six or eight men can drive a flock of 1,000 turkeys 10 to 12 miles a day. Then as soon as possible after the turkeys are received at the dressing plant they are killed, dry-picked, cooled, and packed in barrels or boxes for shipment.

Of the infectious diseases of turkeys, according to Andrew S. Weiant of the Bureau of Animal Industry, Department of Agriculture, blackhead is the most destructive. It is notable that whenever the climate and range conditions are such as to permit of the turkeys foraging for most of their feed from the time they are hatched until they are marketed, cases of blackhead are infrequent. Blackhead occasionally affects grown turkeys, but it mostly occurs among young turkeys between the ages of 6 weeks and 4 months. No positive cure for blackhead has been found. As in the case of all other infectious diseases, the sick bird should immediately be removed from the flock to prevent a further spread of the disease, and if very sick, it is best to kill it and burn the body. If turkeys are being fed heavily, their ration should be reduced, as overfeeding predisposes to the disease. The feeding of sour milk has been found of advantage in keeping turkeys in good health and in reducing the activities of the organism causing blackhead. Free range and care not to overfeed are most important.—Bird.

QUARTERS FOR THE EARLY CHICKS

When early chicks are to be hatched one of the first things to do is to arrange for warm and comfortable quarters. As a rule, unless this can be done it will not pay to hatch out any chicks very early in the season. It is generally the case that there is much rough weather all thru March and the first half of April when little chicks will not thrive as they should unless they are given good protection from the weather. And if they are not started off right they never will do much good. Indeed, chicks hatched out much later in the season, when weather conditions are more favorable, will most likely out-distance in growth the early hatched chicks, if it has not been possible to give the latter proper care.

But if arrangements can be made to keep the early chicks comfortable, not matter what the weather conditions, the chicks can be raised quite profitably. If in considerable numbers, they must be hatched in incubators, and consequently brooders must be used. Some may think that outdoor brooders solve the problem completely, but this is a mistake. Something more is needed in cold weather. The brooders can not be operated satisfactorily in all kinds of weather, and besides the chicks can not be confined in a small brooder exclusively for several weeks. So a building or room of some sort in which to install the brooder is indispensable. Large poultry plants have special buildings in which to rear early chicks. The average farmer has no such buildings, consequently other arrangements must be made. There may be some building on the premises, such as a summer kitchen or a wood shed, where a brooder can be located, and many who wish to raise a number of early chicks do utilize such buildings. Where no outside building is available a room in a dwelling house can sometimes be converted to the use of the chicks for a time, or until warmer weather makes an appearance. Wherever there is a will, there is a way.—Wm. F. Purdue, Ind.

WAR-TIME RATIONS FOR CHICKS

At a meeting held recently, by representatives from Connecticut, Massachusetts, New Jersey, and New York (Cornell) the following standard war chick ration was adopted as conforming to recent government regulations. The authorities recommend its use during the coming season.

Mash.—300 pounds wheat bran; 100 pounds wheat middlings; 100 pounds corn meal, corn feed meal, or hominy; 100 pounds gluten feed; 100 pounds ground oats; 100 pounds meat scrap.

Grain.—70 pounds cracked corn; 20 pounds steel cut oats; 10 pounds cracked wheat. If steel cut oats are not available, increase the corn. When chicks are about 6 weeks old, substitute coarse cracked corn for fine cracked corn and whole wheat for cracked wheat.

The department considers that skimmed milk is indispensable for the chicks during the first week. In order to insure that all chicks become familiar with the milk and secure a sufficient amount, it is recommended that no water be given the first week. After the first week, if milk is available, continue its use; also provide fresh water regularly.

Method of Feeding

It is stated that the method of feeding is of equal or more importance than the ration and the following directions are given:

First Week.—Feed grain sparingly from 4 to 5 times a day, giving what the chicks will eat up clean and still be hungry for the next meal. Beginning the third day, keep wheat bran before them all the time.

Second to Fourth Weeks.—Feed grain sparingly from 4 to 5 times a day. Substitute the chick mash for the wheat bran.

Five Weeks and After. — Feed grain from 2 to 3 times a day. Gradually substitute the standard war laying mash for the chick mash.

War Laying Mash

The standard war laying mash is made up of the following: 100 pounds wheat bran; 100 pounds wheat middlings; 100 pounds corn meal, corn feed meal or hominy; 100 pounds gluten feed; 100 pounds ground oats; 100 pounds meat scrap.

After 10 weeks of age gradually substitute the standard war laying scratch feed as follows: 500 pounds cracked corn; 200 pounds heavy oats; 200 pounds barley; 100 pounds feed wheat.

Black Dorking Cockerel

Green Food. — After first week, feed green food whenever the chicks do not have access to grass range.

MORE EGGS?—HARDLY

I believe in this section the people, as a rule, are as patriotic as any class of people in the country, but we cannot but wonder just how much the nation really expects us to contribute toward the support of the war. Last fall I knew I couldn't possibly feed a large flock of hens all winter so I culled mine to 25 of the very best young hens and pullets, saving only the most choice specimens, feeding well and in every way giving them the best of care. They have laid some—about like the neighboring flocks, many of which are owned by big producers—but they and the larger bunch I had before culling in the fall have run a feed bill of nearly $60. I figured earlier in the winter that probably I could sell these if it were absolutely necessary this spring and apply the proceeds on the feed bill so that I would really be out of pocket only my winter's work and the balance of the bill, and possibly raise enough chickens to finish paying for the feed next fall. However, since the new regulation came into effect I can not sell a hen, even if I were allowed to do so because no one would buy and my eggs won't be a "drop in the bucket" when applied on the daily feed bill, to say nothing about paying off any deficiencies. I have talked with the big henmen around me and they are desperate themselves. I am a widow with a little daughter and no means of support aside from the income from five acres of land devoted to fruit, vegetables, and poultry; but my neighbors are worse off than I, in that most of them have more hens.

Last fall I asked our local dealer's opinion and he said he didn't see how eggs could drop because they were already the cheapest food on the market; but we see many things of late that we never expected to. He, himself, was a heavy producer but he will produce no more. These things may sound unpatriotic but I believe it is more unpatriotic to hesitate to call attention to such a rank injustice which cannot be otherwise than detrimental to the last degree so far as the best interests of the country at large are concerned.—E. M. Anderson, Chautauqua Co., N. Y.

GRIT

Hens have no teeth and must depend on grit—sharp pebbles, coal cinders, small pieces of dishes or crockery-ware, or anything having sharp edges and sufficiently hard—to grind their food. The grinding is done in the gizzard. The gizzard receives both the grain and grit. The organ contracts and expands, thus bringing the grit and grain together, gradually reducing the latter until it can be assimilated. The gizzard is a powerful muscular organ. It is capable in itself of grinding the hardest grains, but this task, thrown on the organ, weakens the hen's system. Besides, the food is never thoroly digested and some of it passes thru the hen and is wasted.

The grit supplied should be hard and have sharp edges. Smooth, round pebbles are worthless as grit. They will not assist the gizzard because they have no cutting edges. There is no danger of the gizzard being injured by sharp substances. Experimenters have introduced needles, pins, nails and glass into the gizzard of hens. After forty-eight hours the hens were killed and the contents of the gizzard noted. It was found that the needles, nails and pins were badly bent and twisted, indicating that such sharp articles are unable to injure this wonderful organ. (However, pins and needles sometimes penetrate the gizzard. —Editors.)

Grit ought to be kept before the hens all the time, so they can help themselves at will. A piece of grit is retained in the gizzard as long as it keeps a cutting edge. When it becomes rounded it is passed thru the alimentary canal and voided. Feeding grit in the mash mixture is a serious mistake, as the hen will likely get more of the grit than the gizzard requires, and some of it will be passed out of the gizzard, the sharp edges injuring the delicate membrane of the alimentary tract.

Prize-Winning Missouri W. P. Rock

Oyster shell is not a grit. It is entirely too soft. The object in feeding oyster-shell is to supply the lime needed for the formation of bone and egg shell.—T. Z. Richey, Ind.

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A positive tonic and conditioner for poultry of all kinds and ages. *A health-builder and health-preserver.* Not a food.

What does it contain?
Roots, herbs, spices, mineral substances, etc. Each ingredient performs a certain duty. The combination spells "health insurance."

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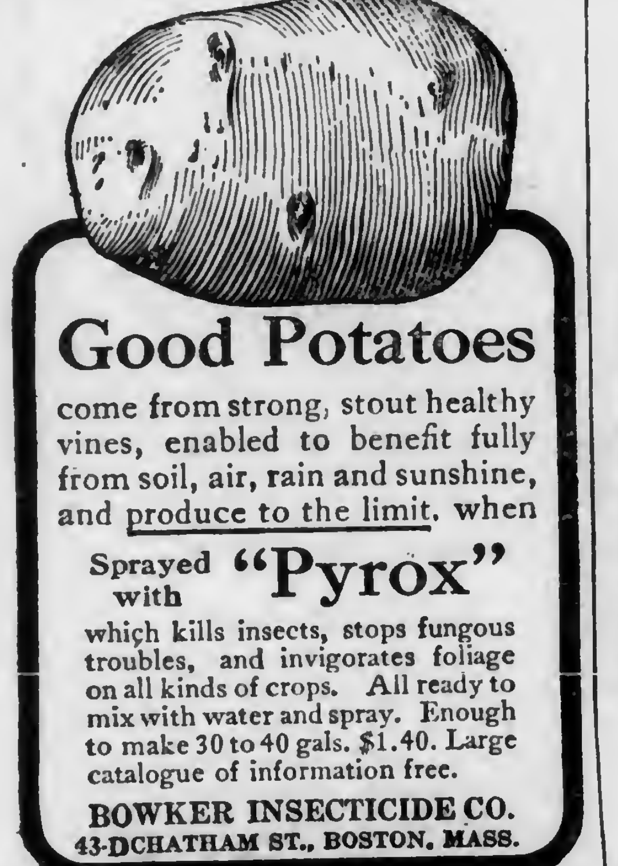

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Horticulture

WHAT TO DO WITH THE OLD ORCHARD

(Concluded from page 1.)

reduces the labor of spraying.

Spraying

Probably the most important single action that can be taken to improve the fruit crop of any section is to get the fruit properly sprayed. In spite of this fact, there is a most deplorable lack of spraying, both in quantity and quality, over most of Pennsylvania and adjacent states—especially in the home orchards. For anything like efficient protection, all apple orchards should receive at least three thoro applications annually.

In this abbreviated schedule, the first application should be made primarily to catch the aphids, scale, and scab. It should therefore be made about 10 to 14 days after the buds first show green tips, unless the season advances with exceptional rapidity. In any event, this application should go on somewhat before any pink appears in the blossoms, and it is timed primarily to catch the rosy and green aphids at their most vulnerable stage, as they are the chief offenders. If both scale insects and aphids are present, lime-sulphur at winter-strength should be used, regardless of the slight burning of leaf tips which may follow, and to it should be added a tobacco extract preferably in the form of nicotine sulphate containing 40 percent of nicotine. The latter should be used at the rate of one-half pint to 50 gallons of spray, and the "winter-strength" lime-sulphur is secured by using about 5.3 gallons of the average commercial concentrate, which tests about 32 degrees Baume, in 50 gallons of spray.

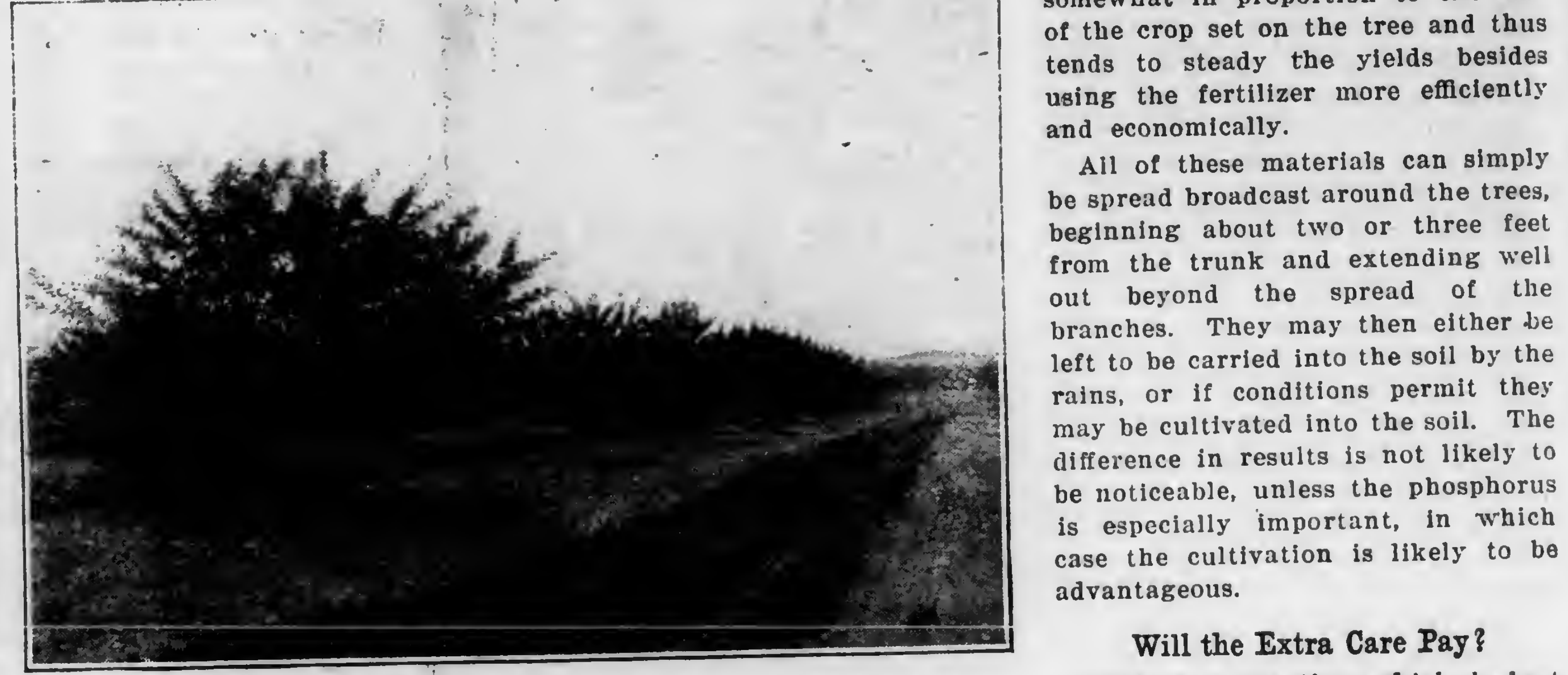


Fig. 3.—Well Pruned Trees For Age. Beans Intercropped to Tide over Unproductive Years.

If the bud moth or other important leaf-eating insects are present, lead arsenate should be added at the rate of 3 lbs. of the paste or 1½ lbs. of the powder to 50 gallons. If the scale is not present, the lime-sulphur should be reduced to the scab-strength, which requires only about 1.8 gallons of 32 degree commercial lime-sulphur to 50 gallons of spray.

The second application should start immediately after the petals fall and be completed within seven days. The materials are the same as in the first application, except that the lime-sulphur is used only at the reduced strength, and the nicotine solution should be omitted unless the red-bug is present. This application is intended primarily to control the codling moth or apple worm and the scab. Plenty of spray should be used and it should be directed with the special object of filling the calyx cups of the blossoms.

The next application should be made about two weeks after the second is finished. The materials and pests are much the same as in the second application, and in addition the curculio and the fruit spots and blotches can be reduced. If the latter troubles are bad, however, additional applications will be needed, one of which should be made about the last week in July or the first of August. This is to control the second brood of codling moth and late infections of scab and other pests.

In the commercial orchards or wherever strictly first-class fruit is desired, one or two additional applications may be needed, but the schedule just named if carried out thoroly and at the right times, would result in an immense improvement in the great majority of orchards in Pennsylvania and its general environment.

Fertilization

At the present time, fertilization is limited to applications of nitrogen, phosphorus, lime and manure. In our experiments covering the last 10 years, it appears that nitrogen is the most frequent need in orchards, with phosphorus, potash and lime following in the order named. Nitrogen is the only one of these materials which has given a profitable response in our experiments when applied alone, both phosphorus and potash have usually materially increased the gains when added to the nitrogen.

At present, wherever growth and fruiting are in apparent need of stimulation, we recommend an application of nitrogen and phosphorus, at the rate of four to six pounds of nitrate of soda and eight to twelve pounds of acid phosphate, or their equivalents, per bearing tree. Stable manure at the rate of 400 or 500 pounds per tree will give very similar results, but is slower-acting.

To influence the crop of the same season, nitrate of soda should be used for the nitrogen, and the application should be made slightly ahead of the bloom, probably preferably soon after the green tips appear in the buds. An application of 3 or 4 pounds of nitrate per tree at this time and a second similar application somewhat after the fruit has set is likely to be most satisfactory, altho the whole application can be made at the earlier date if labor is especially short.

The principal advantage in the two applications is that it enables one to vary the second application somewhat in proportion to the size of the crop set on the tree and thus tends to steady the yields besides using the fertilizer more efficiently and economically.

All of these materials can simply be spread broadcast around the trees, beginning about two or three feet from the trunk and extending well out beyond the spread of the branches. They may then either be left to be carried into the soil by the rains, or if conditions permit they may be cultivated into the soil. The difference in results is not likely to be noticeable, unless the phosphorus is especially important, in which case the cultivation is likely to be advantageous.

Will the Extra Care Pay?

This is a question which is best answered by citing a few definite experiences. A few years ago in southern Pennsylvania there was one 37-year-old orchard that had apparently become so worthless that the owners decided to pull the trees out and use the ground for something better. After removing about two-thirds of the orchard they decided to try heroic measures on the remainder and either kill the trees or make them profitable. They accordingly set in operation the heavy renewal pruning above described and also sprayed, fertilized and tilled the orchard thoroly and regularly. They also kept an accurate financial account with the orchard.

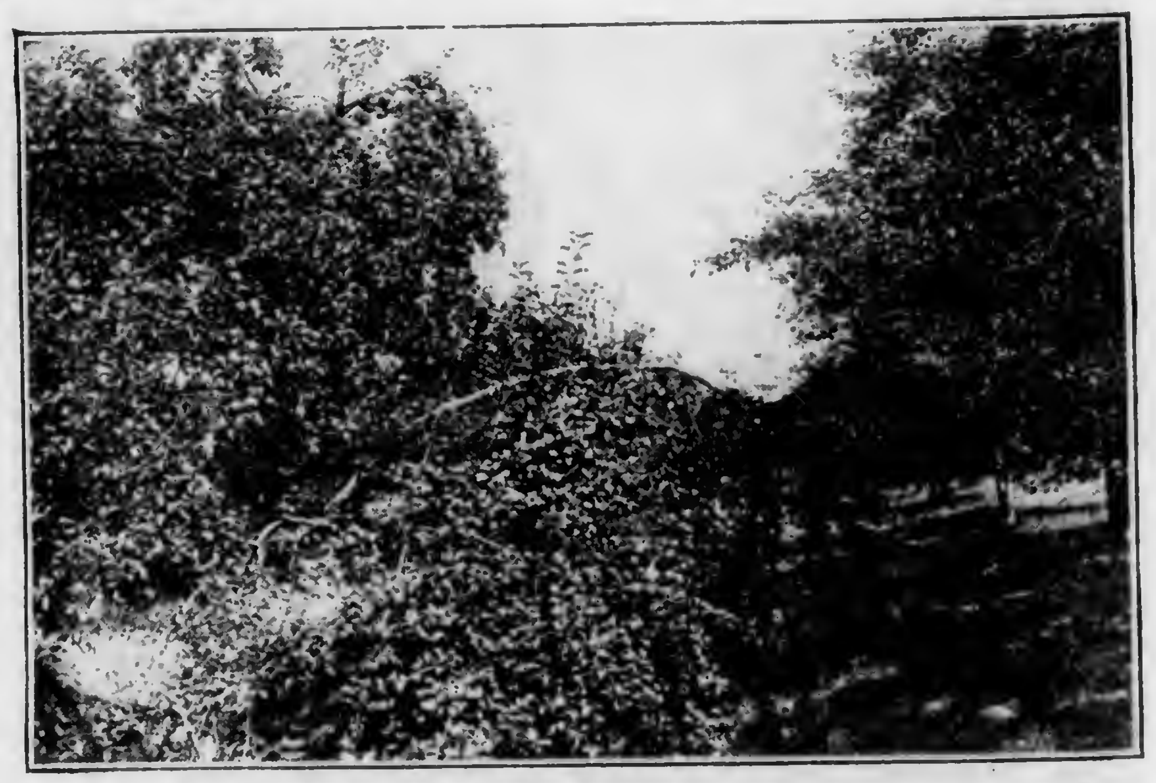


Fig. 4.—Fertilized on Left—Nothing on Right. Average return for Nitrogen and Phosphorus, 308 bu. per Acre for 10 Years

During the next four years, their annual expenditures on the orchard averaged $131.70 per acre, including

picking, packing and marketing expenses. This may appear to be quite a staggering sum. Their average net returns, however, during the same period proved to be $312.60 per acre annually. This reversal of form in the orchard was due entirely to the difference in care. Instead of being an unprofitable proposition, the orchard area proved to be a veritable gold mine. As a result they now have hundreds of acres of orchard where before they had one.

In another orchard in Southern Pennsylvania, the average crop on the unfertilized check plots in one of the experiments of the Pennsylvania Station has been 116.7 bushels per acre annually during the last 10 years. During the same time the average annual yield on the plot receiving manure at the rate of 12 tons per acre annually has been 405.1 bushels, and the yield on the plot receiving nitrogen and acid phosphate has been 486.1 bushels per acre.

The annual cost of this fertilizer, at present prices, is about $21 per acre, as it has been used in some excess. The average gain over the normal yield of its plot, however, has been at least 300 bushels per acre annually. In every other respect except fertilization, the plots and treatments are the same. If the gains had been only one-fifth as great, the fertilizer application would evidently have paid even at present prices. Would it not be well to try some of it on the old orchard?

Growing Tomatoes—III

Late Crop and Can-House Varieties

By C. C. HULSART, MONMOUTH CO., N. J.

This crop has very recently developed to the farmer's benefit. Only a few years ago, certain sections were growing this crop for can-house purposes at six dollars per ton because it was their only outlet. Can-house proprietors had the situation well in hand, and used it for all it was worth and for a time dominated the farmer. When the farmers began to realize it was a losing game, one by one they dropped out of producing until the pack was below the demand. Then the packer began to see that, if a larger pack was secured, more tomatoes must be grown and in order to have them grown, a larger price must be paid for the fruit. The price was raised to eight dollars per ton. That did not last long, because, in the meantime, everything that entered into the cost of producing the crop had advanced in price. The farmer was no better off than before, yet all this time canned tomatoes were advancing in price. The high price and scarcity of the canned article drove the consumer to the fresh fruit all season, causing a greater demand for the fresh article at constantly rising prices. These prices for the fresh fruit acted as a magnet to draw what fruit there was toward the open market and away from the canner, with the result that there is not nearly enough canned fruit to go around, even at high prices. That being true, the fresh fruit must be in demand at good prices until such time as the canned article is cheaper than the fresh one and that will not be the coming season. Just so long as the war lasts and canned tomatoes are in demand for shipment abroad, prices will remain high or soar still higher.

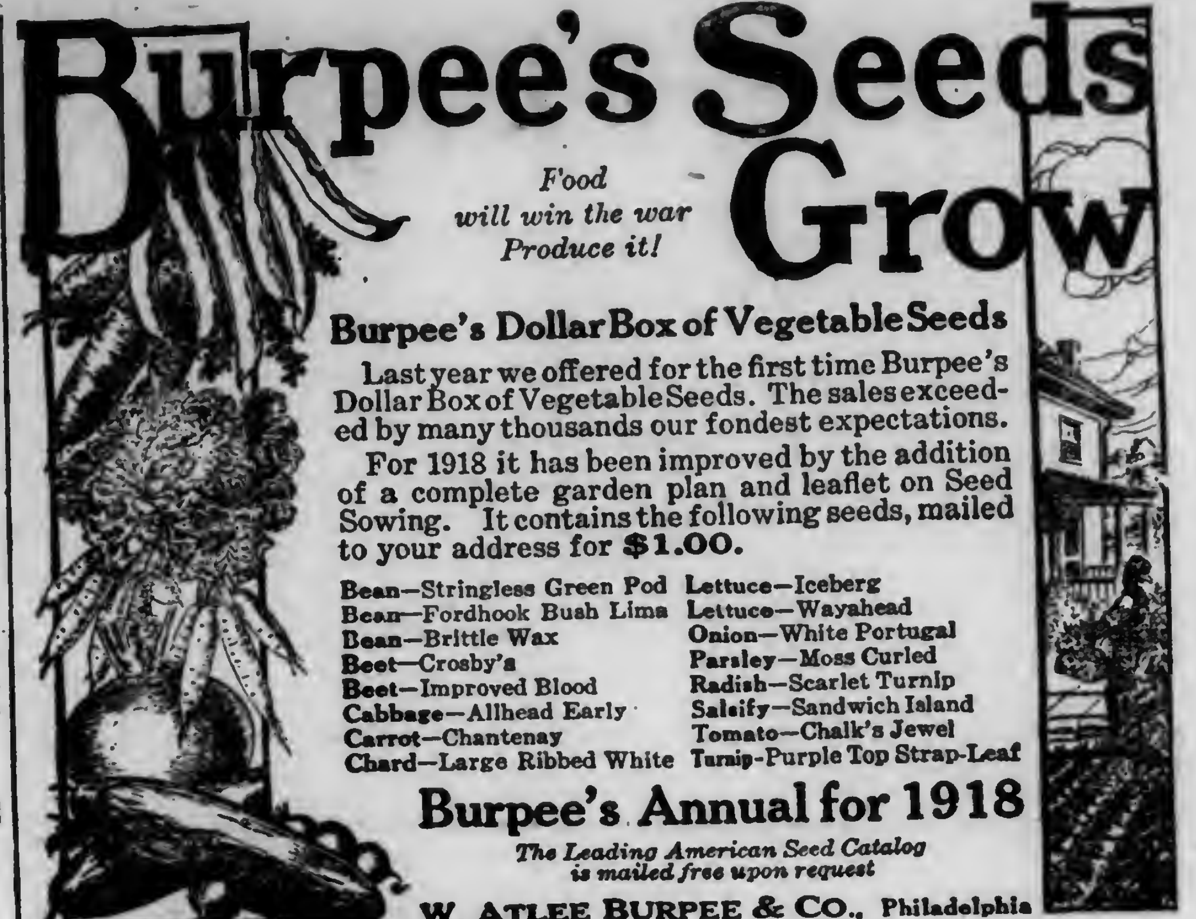
Varieties

Varieties which can be grown for this crop are numerous and when the open market is considered in conjunction with the can-house crop the varieties and strains are legion. There are two distinct classes: First, those that ripen with a red color. It may be almost any shade of red from quite light to a very dark red. Second, the various varieties of pink and purple sorts. They are all sizes, shades and shapes, from the "Early Bird" which produces fruit the size of an egg up to the Ponderosa which produces five to six inches in diameter. The practical grower does not want a variety that approaches either extreme. Pink and purple varieties are highly prized by many housewives because of their sweetness. This class of tomato is less acid. However, the lovers of this class are not numerous. For factory purposes they are useless. Ponderosa is too large. It sets but few fruits. They develop to an enormous size and many of them are ill shaped. Two of the best varieties that I have personally grown are the old Beauty and Maule's Imperial. There may be others just as good.

Among the reds, which are numerous, I will comment on only a few and criticize a few others. The grower does not want a tomato which grows to abnormal size, and yet farmers do like something that pleases the eye and makes them imagine they are producing a greater volume of crop because of the fact that they have large fruit, when in reality the yield is less. Varieties which produce fruits of immense size seldom set many fruits in comparison with the medium growing sorts. A few years ago I visited the Bridgeton (N. J.) section at the height of the picking season. Everywhere I went the variety was the same, the Cumberland Red. The can-house liked it, but the farmer was not getting any very heavy yields. The Enormous is very attractive both in shape and color, but it is too large for practical purposes. The Stone is a very good and attractive tomato, liked by both canner and consumer, but it is a shy bearer. The Red Rock is a favorite in some sections. Here, there has never been a tomato that has out-done the old Paragon. It is an old variety and has had its day, but is still good. Of the newer sorts, I do not believe there is any that will prove more valuable, all things considered, than the Success. It has done well for me. It is, however, a strictly late variety. In this section many are growing the Dwarf Stone for late by sowing the seed a little later and setting the plants from the seed bed.

Preparing Land for Late Crop

This crop for best results should be planted on heavier soil than either the first or second earlies. The soil selected should have been planted to some crop the previous season which necessitated liberal fertilization and clean cultivation. As to manures, I would not give a picayune to have it composted and put into the hill. Spread it broadcast and plow it under. Eight tons per acre will be sufficient.



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Lettuce—Iceberg
Lettuce—Wayahead
Onion—White Portugal
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Radish—Scarlet Turnip
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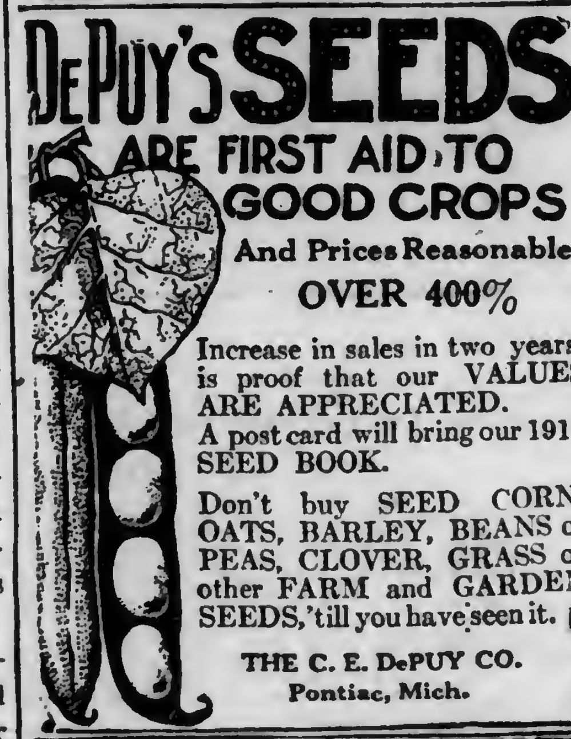

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REID'S YELLOW DENT	$5 per bushel
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Two Years Old		Fine Clean Stock	
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12 to 15	3 to 5	$2.50	$20.00
24 to 30 in.	8 to 10	4.00	35.00

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Seed Corn White Cap Yellow Dent, earliest and best of all the big-ear varieties. Ripened and cut 2 weeks before frost in 1917. Selected seed shelled, butts and tips removed. $4.00 bushels, F. O. B. West Chester. J. H. Brinton, West Chester, Pa.

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We save you money on your Seed Bill. Write for our Special Money-Saving Price List and get our reduced prices on Best Quality Guaranteed Seed. You should know about our low prices. Write at once and be convinced. Everything Guaranteed equal to Samples or Money Refunded. Don't pay double profits on Grass Seed. Our seeds are sold subject to Government test. Have low prices on Seed Corn, Oats, Wheat, Speltz, Barley, Cane, Millet, Cowpeas, Rape, Vetch, Sudan Grass, Potatoes, Artichokes and all Farm and Garden Seeds. Don't order until you write for big 116-p. catalog. Free samples and special low prices on seeds you require. Free 60-p. book on Growing Alfalfa to those who ask for it. Write now. A. A. Berry Seed Co., Box 230, Clarinda, Iowa.

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There are, however, many, many acres of late tomatoes planted without any animal manure—fertilizers only being used.

Excepting the dwarfs, the late varieties are all heavy vine makers. They grow rank and strong, hence cover a considerable area. This crop being set in the field later in the spring or early summer, the soil is then in better condition for quick and rapid growth, because it is warmer, nitrification is more rapid, and days are longer and warmer. This, together with an inherent tendency to make vine, frequently causes low yields. This must be prevented or low yields will ensue. It is obvious, therefore, that the grower should not plant on such soils as have too much available nitrogen, or use fertilizers too high in this element of plant food. The writer has frequently seen fields of these varieties with rankly growing vines which produced very small crops of fruit. It is well to have a sufficient amount of available nitrogen present at time of setting the plant to induce a quick, active growth for a short time but this should be mainly used up by the time the plant is ready to set fruit, and kept at a minimum amount until a fair amount of fruit is set. A side dressing may be beneficial later but how much to use no one can tell but the farmer himself.

The growers in this section plant their tomatoes on rather poor land, chiefly because they have no other, and because they know that tomatoes do better on poor land, artificially fed, than they do on rich soil. This all alludes to the element of nitrogen. When it comes to phosphoric acid and potash, the case is different. I think it will pay to use a fertilizer carrying two percent potash, even tho it costs six dollars per unit, except on soils which are known to be fairly well supplied with this element. Whether it would pay to use three or more percent can only be determined by trial. I cited some observations made the past season in a recent article in Pennsylvania Farmer which bear out my previous convictions: That this crop can not be successfully grown and a maximum yield produced without liberal applications of available phosphoric acid. The amount can be more easily arrived at than is the case with nitrogen. If an excessive amount be used, it is not lost. It is better to err on the safe side; and apply 800 to 1,000 pounds per acre, one-third with the nitrogenous material under and around the young plant at time of setting, and the balance with more nitrogen when more nitrogen is needed after fruit is set.

These late varieties being strong growers require more room, hence should be set wider apart. Four and one-half feet is none too wide, and five feet is often better. The first two cultivations may be fairly deep to mellow the soil. All subsequent cultivations should be shallow. A crop of late tomatoes on one acre of good tomato land well set, thoroly attended and properly fertilized, should yield from four to five hundred bushels and if sold at $1 per bushel net, "Oh! what a grand and glorious feelin'."

HOW AND WHEN TO PRUNE

Peach Trees

Peach trees should be pruned during the winter while dormant. Since the season is now well advanced this work should be started as soon as possible, as bad weather later may shorten the season for the pruning work. The horticultural department of the New Jersey Agricultural Experiment Station gives the following suggestions for pruning:

In pruning bearing peach trees, remove any limb in the center tending to develop into a main leader and shade that part of the tree. Remove dead, diseased or broken branches, also any very low-hanging limbs up to 3 feet from the ground, which will interfere with cultivation and hang in the dirt when loaded with fruit. Thin out all branches where too thick for proper development of the fruit. Cut back all main leaders to a good outside shoot, and thin out side laterals on the main branches. How much the main leaders should be cut backs depends upon the amount of new growth made during the past season. If the trees have made a growth of 18 inches or more, one-half of this new growth should be removed. Cutting back the tips of branches tends to thicken the top of the tree and should be followed by some thinning out of lateral shoots.

Apple Trees

The Station recommends that all young or bearing apple trees be pruned at this time. Heavy pruning of young trees is harmful and if excessive will delay fruiting. However, in the case of an irregular or one-sided tree heavy pruning may be necessary to get the tree into shape. Until trees come into bearing, prune just enough to keep the trees in shape. Remove all cross branches which tend to develop into main limbs, but do not practice rubbing off all small spurs. Tip back only the main leaders when they are making excessive growth at the expense of the other leaders. In pruning bearing trees cut out dead, diseased or broken branches. Remove crossing and interferring branches. Unless the central leader type of tree is desired, keep the centers and tops of trees open to admit sunlight. Shorten back the main leaders where they are growing too high or spreading too far, cutting back each time to a side shoot. Remove all suckers from the center of the trees and from other limbs except where they are needed to fill out a limb or side of the tree. Remove all very low hanging branches which will interfere with cultivation.

INTERCROPS FOR APPLE ORCHARDS

Proper intercrops sensibly managed are in no way injurious to the adjacent trees, and they may carry the entire cost of maintenance until the trees come into bearing. Tilled annuals, such as potatoes, beans, tomatoes, early corn, and cabbage are preferable. Buckwheat and clover have also proved satisfactory, but are best used in a rotation. Rotations are especially desirable where large acreages are involved. Untilled cereals, such as wheat, rye, or oats are very objectionable because of their strong moisture draft near ripening time, when the moisture is also especially needed by the trees.

The intercrops should receive their usual fertilization and a winter cover of rye, vetch, or similar plants should be provided when needed. Tall-growing crops like corn should be kept far enough away from the trees to avoid injurious shading. A good mulch of strawy stable manure about the trees is also very desirable.—J. P. S.

Dairy Outlook in the East

Market Conditions Affecting the Milk Business.

By ROBERT W. BALDERSTON, Secy. Interstate Milk Producers Ass'n.

The future of the dairy industry in the eastern part of the United States is now at stake and every dairyman in the country should have the opportunity to know about some of the influences at work at the present moment. We have not seen any recent effort to sum them up. Might they not be outlined briefly as follows: (a) The growth of the condensing business and the increased need of its products for our armies and our allies, and, after the war, for all Europe; (b) the increase in the use of oleomargarine and a consequent decrease in the demand for butter, in addition to the natural shrinkage of demand due to economic pressure; (c) the investigations, federal and local, into production costs, showing the lack of a safe margin for the dairy farmer under present conditions, the need of a solution for his labor and feed problems, causes of waste in methods of production and distribution and that milk is one of the cheapest forms of animal food for human consumption at present prices, and should be used much more freely.

Four Good Milking Shorthorns. Owned by C. M. Kennedy & Sons, Bradford County, Pa. A six year-old, a two-year-old, a yearling and a calf, all of Cyrus Clay Imported Duke Buttercup breeding

Our business is in a state flux—it has great possibilities for the future and yet there is great danger if the present situation is not worked out with care and forethought.

Care in Production

The producer has a part in this as well as the distributor or manufacturer and the consumer. Never was there more need of careful adjustment of feeding methods. Unprecedented conditions necessitate new practices. Corn has become the food to save instead of the one to use liberally. It is almost impossible to get the standard mill and oil seed by-products. Many are off the market and others, while costing much more than in 1914, are relatively cheaper than those most economical four years ago. Every farmer must solve his feed problem in the light of his own knowledge of individual conditions, with the very best general advice he can get. Many dairy leaders have been suggesting war-time rations and a very complete and suggestive list was prepared by the Dairy Husbandry Department of Pennsylvania State College and published in the Pennsylvania Farmer. The College is always ready to assist with new problems as they arise; for instance, to suggest substitutes for those feeds not now in your local market.

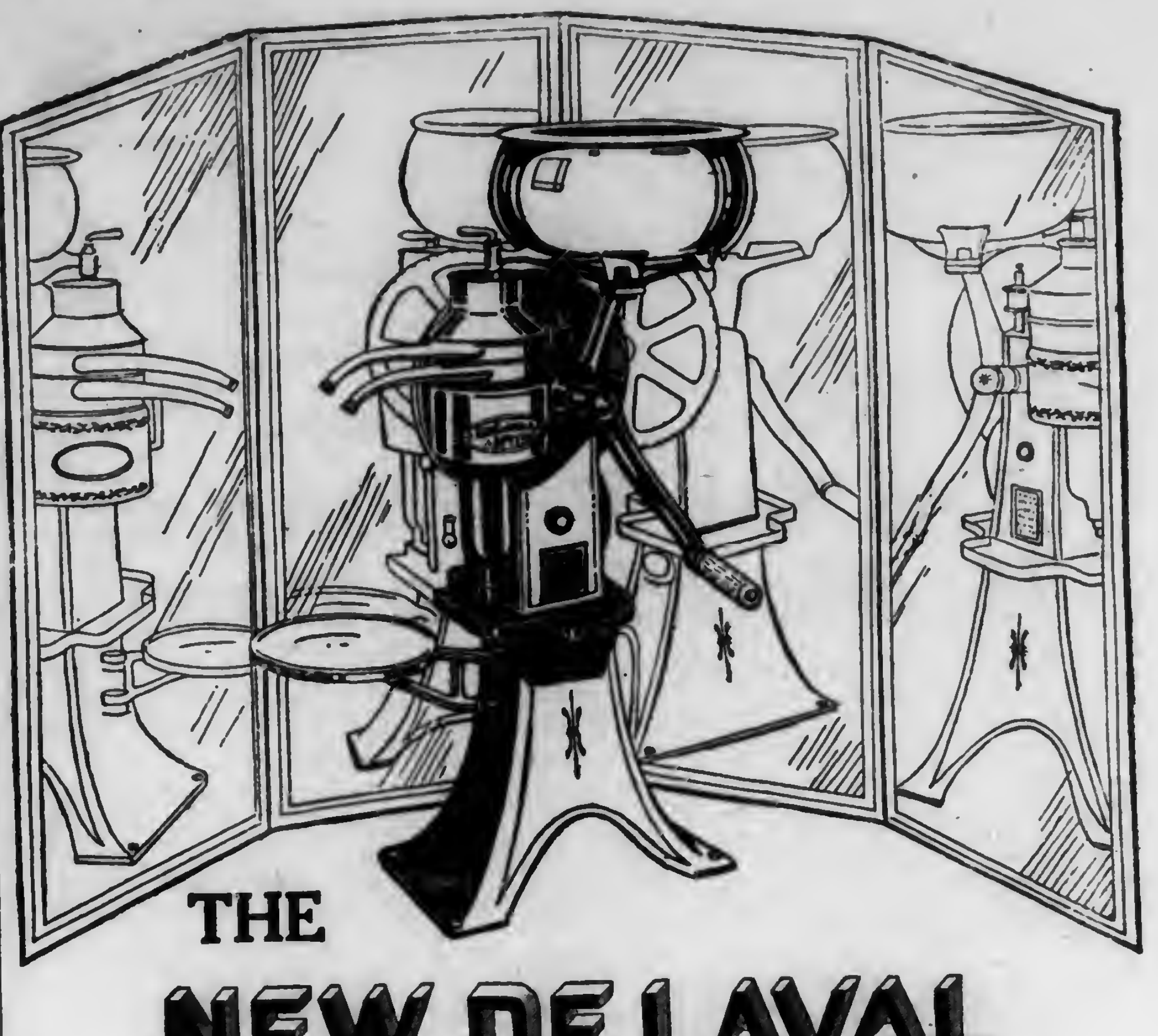
Boarder cows could never be sold to better advantage, nor was there ever greater need that they be eliminated. We can most cheaply and accurately find them out thru the Cow Testing or Dairy Record Associations.

Condensaries the Safety Valve

The increasing use of oleomargarine and a corresponding curtailment in the use of butter has upset the butter market. Consequently, Philadelphia is drawing market milk from many regions that have previously been making butter. Also, the retail milk dealer can no longer turn his surplus supply into cream and butter without loss. The condensaries, alone, of all the milk manufacturing interests, are able to sell their finished product so as to pay somewhere near the cost of production. They are absorbing the surplus of the east. We must carefully consider what this means and where it is leading us. It is very important that we are not caught without another market for much of our milk, if anything should happen to disturb the present condition of affairs. The condensaries act as our safety valve now, but how long will they continue to be able to do this?

Price Influences

The price reduction for the Philadelphia, New York and Chicago districts for February has been a great disappointment to our farmers. The weakness in the butter market, the severe weather and the consequent railroad collapse, and the reduced consumption of market milk all had some part in producing this discouraging result. Condensaries worked under great difficulties all of January, on account of the delay in coaling ships for the export trade, and on account of an inadequate and irregular supply of coal, sugar and cans for themselves. Therefore, they were not able to absorb all of that part of the Philadelphia supply which temporarily was not needed for the market milk trade after the retail price had been increased. Doubtless, this has been the experience elsewhere.



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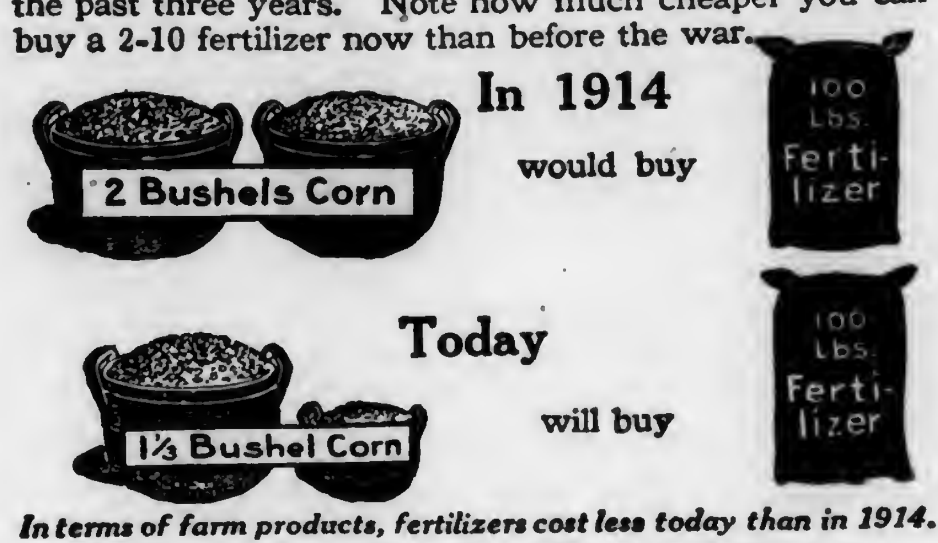

In terms of farm products, fertilizers cost less today than in 1914.

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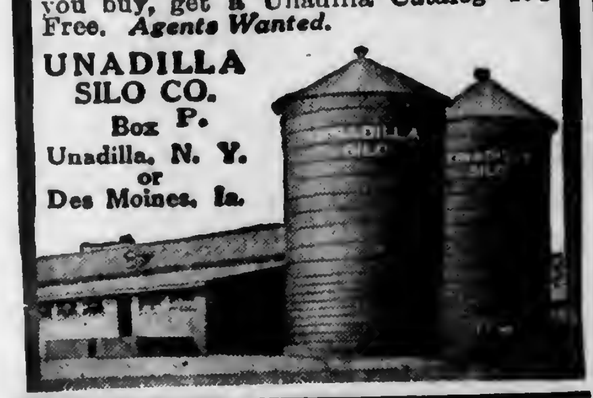

Unadilla Silos Towers of Strength

Built to endure, they are air-tight, frost resisting and storm defying. Base and top anchors of steel cable hold the Silo erect, steady and secure on its foundation. Hoops are tightened in front where the Unadilla ladder is always *safe* and *ready*. Door frame can be adjusted to make air-tight contact with the doors. That's why Unadilla Silage is good to the last forkful—from top to bottom, from center to outer circumference. Before you buy, get a Unadilla Catalog—It's Free. *Agents Wanted.*

UNADILLA SILO CO.
Box P.
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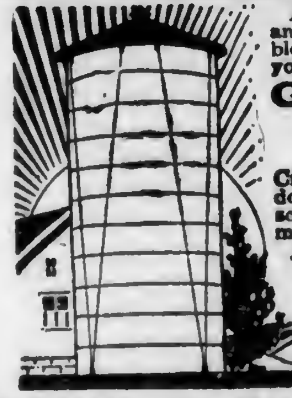
Des Moines, Ia.



A good-looking, tight-fitting and convenient silo that can't blow over is what you get when you buy a

Green Mountain SILO

Creosoted staves, safe-like doors, extra heavy hoops and scientific guy-wire anchorage make the perfect silo. *Write for folder. Save by buying early.*

The CREAMERY PACKAGE MFG. CO.
3&5 West St., Rutland, Vt.

A year to pay it

$2.00 brings it 60 days to try it

Remarkable opportunity. Compare the Maynard with the highest priced cream separator. You will find it equal to or better than the $100 kind. Big cream saver—big money-maker—will last a lifetime.

$2.00 will bring any of the four sizes. Try it free for 60 days. If you don't find it the best cream separator you can buy at any price, send it back. If you like it, keep it, and take a year to pay.

Save $30 to $40

New one-piece aluminum skimming device skims every drop of milk eight times. Frictionless shaft and ball bearings make it easy to run; lasts a lifetime. Single piece skimmer, open cream spout and one-piece supply-tank make it easy to clean.

Prices from $36.75 to $51.30; no better machine for twice the money. Judge the Maynard by what it does—not what it costs.

Sent Free—Our 1918 Separator Plan—Write for your copy today. Read every word before you buy any kind of separator. It will open your eyes.

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2204 Stores Bldg., New York.

17.95 Upward ON TRIAL

American FULLY GUARANTEED CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for $17.95. Closely skims warm or cold milk. Makes heavy or light cream. Different from picture, which illustrates larger capacity machines. See our easy plan of

Monthly Payments

Bowl a *sanitary marvel*, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan.

Western orders filled from Western points.

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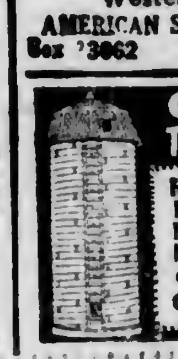

Craine TRIPLE WALL SILOS

have 3 distinct walls. Require no hoops. Economical because they last longer. Keep warmth in and cold out. Absolutely Guaranteed. In use for 15 yrs. Send for cat., prices, terms & Agency Proposition

Craine Silo Co. Inc., Box 140, Norwich, N.Y.

The milk formerly used in eastern butter creameries is now largely hunting other markets, for butter can not let the manufacturer out, or the farmer either, under present conditions. Even with the large demand for condensed goods, further growth in that direction is problematical, for new outfits to increase the capacity of the plants now running or to establish new ones, are very difficult to obtain.

Greater Consumption

We do not know, of course, what the future has in store for us, but every effort must be, and will be, made to get the supply adjusted so as to use all the milk at present prices. There is a good demand at these prices but it is very hard to get the supply to the places where it is needed. Had our condensaries been differently located so as to divide the territory to better advantage, the problem would have been far easier.

The amount of milk included in the surplus of a large city is not so very great each day, but it must find a regular outlet at a price that will not jeopardize the general market. The public mind needs to have its attention called to this matter and a campaign started to increase the use of market milk. Dieticians agree that the consumption is one-half what it should be for the best interests of health, and of the pocket-book. Such a movement is already well started in Philadelphia, backed by all the interest involved.

Conversely, our producers must appreciate the need of a uniform supply and arrange for greater production during October, November and December, and a corresponding curtailment in May and June, and they must insist on being generously paid for the milk produced during these months of shortage, when, other things being equal, production costs are greatest.

Better Co-operation

The value of increased co-operation on the part of consumer, distributor and producer is becoming apparent. Competition is no longer the "life of trade". The milk business is a great "quasi-public institution". Elimination of wasteful methods by concentration of routes, etc., has enabled the Philadelphia public to get milk with a smaller increase above the price to the farmer than in any other eastern city, according to Dr. Clyde L. King, milk expert for U. S. Food Administration.

In conclusion, let us emphasize again the need for great care in business methods—both in producing and selling and the importance of co-operation in both directions. The dairy cow is the most economical producer of animal food for human consumption and she uses a maximum of rough materials in doing it. She will save the fertility of our farms, her product is absolutely necessary to American infant life, and is a complete, palatable and cheap food for adults. May we have sufficient intelligence, common-sense, perseverance and faith to save the industry for the nation and humanity.

NEW FEED REGULATIONS

Limits "Spread" in Feed Prices

Results of a two-day conference in Washington between representatives of the wheat mill-feed industry and the U. S. Food Administration are expected to have a far-reaching influence on the nation's future supply of meat and milk. The "spread" in prices of wheat mill-feeds has been such as to attract the attention of the Food Administration, and the conference was called to work out a plan that would stamp out certain trade abuses, also to establish fair handling charges.

Under the new regulations, brokers in wheat mill-feed are limited to a charge of 25 cents per ton; commission agents (making sale delivery and collection) are not to charge **more than 50 cents** per ton commission; and wholesalers or jobbers are limited to reasonable advances over the average bulk price of his stock at mill (plus brokerage, commission or inspection fee actually paid). The advance allowed wholesalers or jobbers must not exceed the following:

Shipment from mill or in transit, payment cash, demand draft or sight draft, $1 per ton.

Shipment from mill or in transit, sale on arrival, draft terms, $1.50 per ton.

Sale ex-jobbers warehouse, payment cash, sight draft or demand draft, $2.50 per ton.

Sale ex-jobbers warehouse, upon arrival draft terms, $3 per ton.

In making sales on credit, not to exceed $1 per ton may be added to the margin which could be charged if sold on arrival draft terms.

The new regulations practically exclude unnecessary handlers by making resales within the trade unprofitable. Only one profit on sales is permitted. If the feed is sold by several dealers, the total profits must not exceed the original single profit.

Profits of retail dealers in wheat mill-feeds will be determined by the Federal Food Administrator for each state. While retailers doing a business of less than $100.000 a year are not licensed, they are subject to the Food Control Act which provides they shall not exact more than a "fair and reasonable profit". Unlicensed retailers who do not observe the regulations may have their supplies from manufacturers or wholesalers cut off by notification of the U. S. Food Administration.

CHEESE FACTORY PRICES ON MILK

I would like information on what is a fair price to pay for 4 percent milk by a cheese factory that receives 28 cents a pound for its cheese. It is supposed to pay the farmer everything above the actual expense of manufacturing the cheese. Our cheese factory induced us to go into the business of furnishing milk, promising to pay us on a co-operative basis. They receive 28 cents a pound for their cheese and pay us $2.30 a hundred for 4 percent milk. I don't feel I can sell for that.

What is an acid tester for testing cream to see if it is ripe for churning? What do they cost and where can one be bought? Would it pay me better to churn my cream into butter and feed the skimmed milk to pigs?—John Smeltzer, W. Va.

It is impossible to state exactly the price a factory can pay for milk based upon the price of cheese, as this depends upon the money invested in the cheese factory, cost of operation, including cost of labor, coal, supplies, cost of collecting milk if not delivered by farmer, location of factory, and amount of cheese made daily. One hundred pounds of 4 percent milk will make 10.6 pounds of cheddar cheese, with a shrinkage in

ripening of about 5 percent, giving approximately 10 pounds of cheese, which at 28 cents would bring $2.80. When paying $2.30 for 100 pounds, the gross profit to the operator is 50 cents per 100 pounds of milk. If cheese is made that contains over the normal percent of water, or about 35 percent, the gross profit would be greater.

As to butter, 100 pounds of 4 percent milk, if losses in the skimmilk and in the buttermilk are kept down to a minimum, should yield 4.5 pounds of butter. By multiplying 4.5 by the average yearly local price of butter, a comparison can be made between the money received for milk, selling to the cheese factory and the income from butter. The value of skimmilk should be based upon the local price of grain.

It must be remembered that from the money received from the butter as figured above, should be subtracted the interest and depreciation on the labor of making and marketing the butter, before conclusions are drawn as to whether it is more profitable to make butter or sell milk for cheese making. At $2.30 per hundred for milk, butter should bring 51 cents per pound, plus the cost of making. The skimmilk, if labor is available, will probably pay for the cost of making and marketing. For feeding to pigs, whey is worth about one-half the value of skimmilk. It looks as if it would be at least, if not more, profitable to sell milk to the cheese factory than to make butter on the farm.

By the acid test is meant the measuring of the acid in the cream by an alkaline solution of known strength, generally a tenth normal solution of sodium hydroxide. The solution and equipment can be obtained from any good creamery and dairy supply company. This test is not generally used on the farm.

The farm butter maker soon learns to tell by the taste when the cream is ready for churning. The cream should have a mild sour taste. It is important not to have the cream too sour as it gives a strong taste to the butter.—Prof. Fred Rasmussen.

GREATER USE OF MILK URGED

National Milk Committee Report

Increased production and increased consumption of milk are both strongly urged by the committee appointed by the U. S. Food Administration to study the milk problem. The report concludes:

1. That increased production of milk be encouraged; (a) as a measure of national safety for the present; (b) as a measure of national vitality for the future, the future being bound up in the welfare of children.

2. That consumption of milk should be increased because:

(a) A greater consumption of it in cities will result in a better development of the physical condition of the city population, where consumption is 112 quarts per capita, as compared with 288 on the farm.

(2) Increased consumption will encourage production.

(c) "If the country is to be protected against nutritive disaster, every possible step must be taken to educate the people to a realization that tho they may do without meat they should still have milk."—Rose and Brewer.

(d) Skimmilk and butter milk should be made available for city consumers.

(e) It is of fundamental importance that the milk supply should be not only maintained at its present status but that more milk should be made available for children.

FROZEN SILAGE

Reports from different sections of Pennsylvania indicate that an unusual number of farmers are now troubled with frozen silage as a result of the continued cold weather. Experiments at different stations have shown that frozen silage may be fed with satisfactory results after it has been entirely thawed out. The freezing does not impair the feeding value nor make the silage any less palatable, according to S. I. Bechdel, of the Pennsylvania State College.

One should exercise great care, however, to see that all frost is thawed out before feeding since it is unsafe to feed frozen silage. As the silage is removed from the silo, a ring of frozen material can be left standing around the walls. Portions of this frozen material can be broken loose daily and buried under the wet silage in the center of the silo.

The frost will usually thaw in a short time with this practise. Another scheme that has been suggested is to load the frozen silage on the feed cart for removal to a stable or other building with sufficient warmth to cause the frost to thaw out. If steam is available, it may be used to advantage to remove the frost.

When the frozen silage is allowed to remain in the silo until warm weather, the frost sometimes thaws out and spoilage takes place before any attention is given to it. In view of the present shortage and extremely high prices of all kinds of feed, neglect of this sort should be avoided.

DRY FODDER MIXED IN SILAGE

Because of the long drouth last summer, my late planting of silage corn did not mature as usual. One planting lacked full-grown ears late in September while another planting was only about half grown. It was all cut at sign of approaching frost and laid in large piles, some three or four armfuls in each pile.

I then waited until the other field corn was dry and husked, and then mixed the dry and green in about equal parts in filling the silo. Some of the green stalks in the piles were on the ground nearly a month without serious damage or wilt. We had considerable rain during that period. No water was put in the silo when filling except from heavy rains, there being no roof on the silo.

I find now in feeding that I can not distinguish between the dry and the green, altho the color of all is more brown than usual. The cows seem to relish it about as well as if made from all green stalks, and the flow of milk is but little less, probably due to the scarcity of ears in it. Hereafter, when short of silo corn, I plan that I can hold the green corn in piles until the dry fodder is ready and then fill the silo at my leisure when other crops are harvested.—C. W. Gardner, Cumberland Co., N. J.

A quart of whole milk each day for each child is none too much. Milk is a food, not a beverage.

Keep a pig if you can. A properly cared-for pig is no more insanitary than a dog, according to the food administration authorities.

No Money In Advance

The Great Majestic Cream Separator

100% Efficient

Sensational Offer!

Only Hartman's with their $12,000,000.00 capital, their tremendous organization and over two million customers are capable of such a record breaking offer as this: Order any size **Majestic Cream Separator** you want—no deposit—no C. O. D.—no security. When the separator comes, work it 30 days and if you are not fully satisfied with it, send it back at our expense and you will not be out one cent.

Built For a Lifetime of Service

If you are convinced that the "Majestic" is a wonderful bargain and just the Separator you want, then keep it and pay one-sixth 60 days after arrival and balance in 5 equal payments at intervals of 2 months each—giving you a

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Farm Credit Terms

Made In Four Sizes: 375, 500, 750, 1,000 lbs. Capacity

Has all latest improvements including remarkable inside oiling device and improved separable disc bowl

We make this remarkable No-Money-In-Advance, Year-to-Pay Offer because we want you to learn from your own experience that here, at last, in the "Majestic" is the perfect separator—a masterpiece of mechanical skill and ingenuity—a real triumph achieved in Cream Separator construction.

Test it on warm or cold milk and find out by actual results how the "Majestic" skims down to the last drop—note the fine condition of the cream—how much quicker it skims than any other you have ever seen. You will find it just the separator you want. Our free trial without money or security offer proves it to you.

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Don't buy a Separator until you get all the facts about the great "Majestic." Learn all about this wonderful Separator. Compare our low price. The "Majestic" on our **year-to-pay, farm-credit-terms** costs less than others ask all cash for. Get the proof. It's in this book. Mail coupon.

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she would ask for outside support for her over-worked organs of milk-production. Try Kow-Kure; it works with great tonic effect on the system, prevents disease, a sure remedy for Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite, Bunches. Buy Kow-Kure from feed dealers and druggists.

DAIRY ASSOCIATION CO., Lyndonville, Vt.

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High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

ELECTRIC WHEEL CO., 68 Elm Street, Quincy, Ill.

Try This Dairy Sum:

One cow + one hired man + one fixed-feed separator. *Result: Loss* of about 10 lbs. of butter per year.

Same cow + same hired man + SHARPLES SUCTION-FEED SEPARATOR. *Result: All* the cream saved; no butter lost—because the Sharples *skims clean at any speed.*

Multiply this by your number of cows and you will at once see the *extra worth* of

SHARPLES SUCTION-FEED CREAM SEPARATOR

No other separator has the suction-feed principle. Write for catalog. Address Dept. 20

The Sharples Separator Co., West Chester, Pa.
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Feed the Fields that Feed the World!

THE world is asking for bread and meat. Bigger crops cannot be raised by increasing your acreage, the shortage of labor makes that impossible. To meet the demand for bread more grain must be raised on the acres you now cultivate. You must fertilize. You cannot ship away more fertility in the form of bigger crops unless you bring more fertility in.

To raise more livestock, we must have more feed. The only way to grow more feed, is to add to your soils supplies of plant food. Upon the use of fertilizers depends both bread and meat.

In the vast storehouses in the earth, Nature provided food for the soil, Nitrates and Phosphates, just as she provided food for man and beast. These plant foods we gather from the four corners of the globe, and make into V-C Fertilizers that are balanced crop rations—that benefit the crop immediately—nourish it from seed time until harvest. The crop is not overfed on one element and starved for the lack of another.

Freight is Congested—Order Early!

We have more than 50 factories in the North, South, East and Middle-West. We are able to get fertilizers to you with a minimum amount of hauling, but the car shortage is serious. Fertilizers should be ordered early so that the dealer can assemble his orders and have every car loaded to maximum capacity. If you do not order **now** you may have to do without them!

When the fertilizers arrive, haul them home and store in your barn until you are ready to use them.

Write us for name of dealers near you who sell V-C Fertilizers.

VIRGINIA-CAROLINA CHEMICAL CO.,
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New York City, Baltimore, Md., Cincinnati, Ohio, Fort Wayne, Ind., Shreveport, La., Richmond, Va., Norfolk, Va., Alexandria, Va., Durham, N. C., Winston-Salem, N. C., Charleston, S. C., Columbia, S. C., Atlanta, Ga., Athens, Ga., Savannah, Ga., Columbus, Ga., Gainesville, Fla., Jacksonville, Fla., Sanford, Fla., Birmingham, Ala., Montgomery, Ala., Mobile, Ala., Memphis, Tenn., Mt. Pleasant, Tenn.

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FARMERS
DO YOUR BIT TO WIN THE WAR!

Food is no less important than *munitions!* Hoover says: "*Food will win the war!*" The farmer can serve his country by growing crops, as well as the soldier who fights the enemy. Insure quality and yield by using

BRADLEY'S FERTILIZERS
THE WORLD'S BEST BY EVERY TEST

We maintain an Agricultural Service Bureau, conducted by Dr. H. J. Wheeler (for many years Director of the Rhode Island Experiment Station), whose crop bulletins, services and advice are free to all farmers.

☞ *Order early. Last year we could not supply the demand. The railroads are congested.*

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92 STATE ST., BOSTON, or 2 RECTOR ST., NEW YORK
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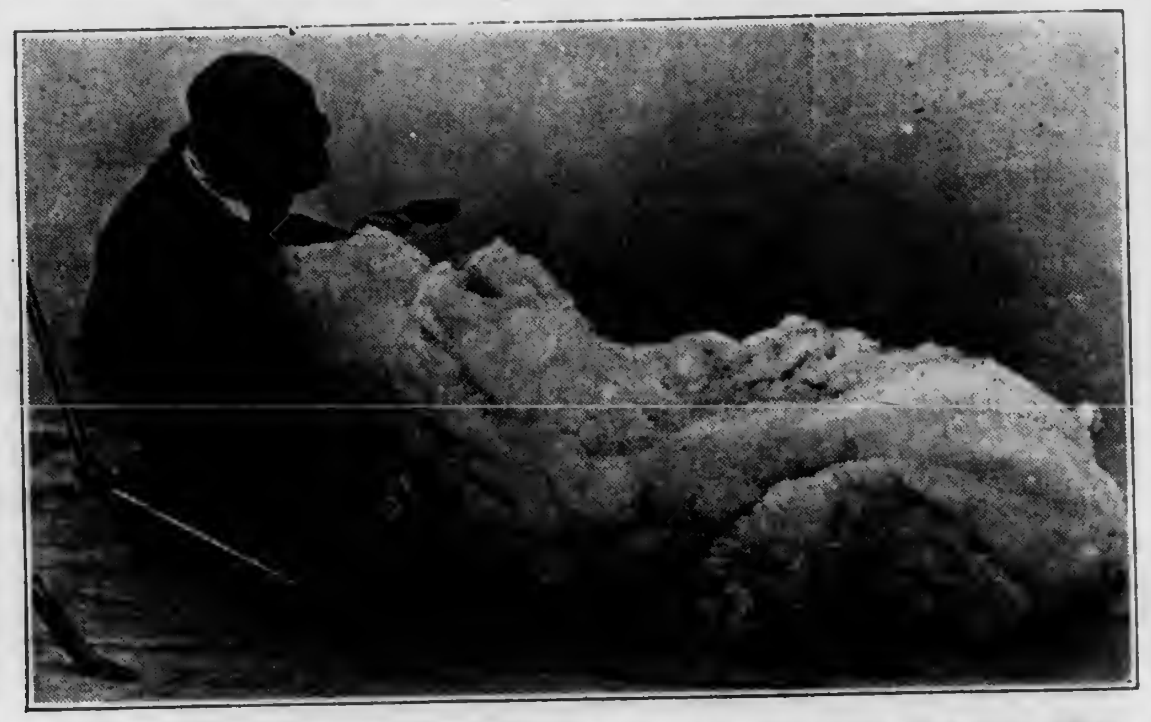
Tri-State Wool Growers Meet

Timely Sheep and Wool Questions Discussed

A large attendance, made up of the most prominent sheep breeders of the Tri-State District, showing a most active interest in all phases of the sheep business, was the outstanding feature of the meeting of the Tri-State Sheep Breeders and Wool Growers held at Wheeling, W. Va., Feb. 14-15. A large part of the attendance was from Pennsylvania, with a fair number from West Virginia and only a very few from Ohio.

Sheep Diseases

The program was nicely balanced as to lectures by college representatives, practical sheep men, exhibits and demonstrations. Dr. I. D. Wilson, veterinarian, Pennsylvania State College, and Dr. Charles A. Leuder, veterinarian, University of West Virginia, brought out many practical points on keeping the flock in health. Both discussed preventative methods, chiefly emphasizing the importance of clean drinking water, rotation of pastures, and the selection of new ground for sheep runs. They also talked on parasitical troubles which seem to cause the greatest mortality in the sheep business. A very practical feature of this discussion was a post mortem performed on a sheep in which many of the points as to the action and history of the parasites were brought out. The proper method of drenching the sheep was also demonstrated. While these may seem of common knowledge, the interest exhibited in the operations indicated that the breeders appreciated these features.



Proper Manner of Holding Sheep When Shearing and Keeping Fleece Together

Types of Sheep

Prof. W. H. Tomhave, of Pennsylvania State College, and H. L. Hammond, of Ohio Experiment Station, discussed the Merino versus mutton types, which called forth the remarks from some of the older members that a few years ago it was hardly safe to mention mutton sheep in a Tri-State meeting. The Merinos appeared to be still strong in its present position, both in results from college data and in the opinion of practical breeders and feeders. The consensus of opinion appeared to be that the Merino ewe as foundation breeding stock is unsurpassed, being hardier and standing more roughing than the mutton ewe. When breeding for hot house lambs for early spring sale, mutton rams crossed on Merinos would be most profitable. For selling of lambs off the grass in the fall, a smooth bodied Merino is very desirable. This same class for feeding purposes is more in demand than the mutton lambs owing to their being more nearly the popular weight demanded by the market, weighing approximately 80 pounds when finished. The question of the percent of lambs likely to be raised from the two sources was hardly given the consideration justified. In small flocks up to fifty, under careful handling, the higher percentage of lambs possible from mutton ewes would be largely in their favor.

Future of the Business

Dr. F. R. Marshall, Sheep Expert of the U. S. Department of Agriculture, made a rather unusual address in that he did not advocate pushing the sheep business to the extreme limits. He recommended a gradual development, in his talk on the world's meat and wool production and consumption. Possibly the majority of breeders believe there is a shortage of wool, but Dr. Marshall stated that the supply is about normal. He believes that the further expansion in sheep breeding is most likely to come about by placing more small flocks on the eastern farms. This belief appeared to be borne out by the fact that ranges are becoming restricted in the west and the live stock development in other countries has been along this line. The Professor's statement "that the successful sheepman in the future must look upon the wool and mutton on a fifty-fifty basis" seemed to sum up the sentiment on this whole question.

A glance over the audience would impress one with the fact that there were few young farmers between the ages of 25 and 35 present; the majority were older breeders. This raised the question of whether there is not a class of young farmers coming on in the business and, if so, whether they are not failing to get the proper vision of the business by missing such meetings. The Association felt that it should give special prominence to sheep club work after hearing from Mr. W. H. Kendricks, in charge of club work in West Virginia, and G. H. Bedell, county agent for Greene Co., Pa., both of whom hammered home the importance of club work and the dollars connected with it.

Exhibits

An especially instructive feature was the crossbred exhibit by the Pennsylvania State College of a pen of crossbred lambs from a Southdown ram on typical smooth bodied Merino ewes. This pen of lambs, which were champions at the International, are beautiful specimens. They have a splendid mutton body with a beautiful covering of wool.

Ohio and West Virginia institutions are also doing some experimental feeding and breeding work. All three institutions are to be commended for this line of investigation and encouraged to extend the work, as many of the colleges and experiment stations are doing practically no sheep work. Charles E. Crothers, Washington Co., Pa., had an exhibit of crossbred wethers that have been carried thru entirely on hay. This exhibit was interesting as showing what crossbred sheep would do under roughing conditions.

Wool Show

Close to 100 fleeces of wool were on exhibit. They were judged by Messrs. E. L. Shaw and H. L. Hammond. Pennsylvania sheepmen took 4 firsts, seconds and thirds. West Virginia sheepmen took 2 firsts, seconds and thirds. The Association cup for the best fleece fine wool was awarded to R. D. Hamilton, Washington Co,, Pa., and for the best fleece crossbred wool and medium to the Waddington Farms, Ohio Co., W. Va.

Officers

The officers elected for the coming year were: President, J. R. Garrison, Cameron, W. Va.; vice-president, W. H. Nichols, Leatherwood, W. Va.; secretary, I. S. Cook, County Agent, Panhandle Agricultural Club, Wheeling, W. Va.; treasurer, Charles E. Crothers, Taylorstown, Pa. Three directors representing the states indicated: R. L. Munce, Canonsburg, Pa.; Howard Gore, Clarksburg, W. Va.; and J. G. Lyle, Cadiz, Ohio.—McK.

EXERCISE FOR HOGS

Exercise is one of the most important factors in the growth of hogs. Hogs that are confined in a small lot do not develop sufficient stretch and frame. The problem of exercise is more difficult to solve in winter than in any other season of the year, due to the fact that hogs should be kept off the pasture for the good of the pasture.

Exercise can best be provided by allowing the hogs free range on a field which is fenced hog tight and which has not been planted to any crop. Stalk fields in which cattle are running make a desirable place for stock hogs. Because hogs are likely to remain in their sheds too much in the winter they should feed some distance from their sleeping quarters. This forces them to take a certain amount of exercise. — Kan. Circular.

Silage.—Silage has received very little attention from sheep feeders, altho many experiments prove its value as a substitute for roots. It affords the cheapest food per unit that is put upon our farms. In recent years sheep feeders are giving it more attention and its value is demonstrated by the increasing number of sheep they are feeding on farms where it is used. Good silage is sure to play an important part in sheep feeding in the future.

Hawks, owls and other natural enemies of rats are not as destructive to poultry as are the rats themselves.

FARQUHAR

Seed With This Convenient Drill

Top of the Hopper on the Pennsylvania Grain Drill is only 43 inches from the ground. This makes it convenient to fill and allows the operator to see the ground in front of the machine.

Despite our low-down construction, both the Hopper and Ground Wheels are standard size. The advantage is the result of underslung frame, an arrangement which also keeps the Hopper in perfect balance.

Positive force grain, grass seed and fertilizer feeds are accurate to the last degree. Lifting lever, levers regulating quantities of grain and fertilizer and acre measure are within easy reach in the rear. Drills built in sizes 6 to 12 openers, both fertilizer and plain. Pin Hoe, Spring Hoe or Single Disc Openers with spring pressure attachment to hold at uniform depth.

Write today for your dealer's name and for free descriptive booklet, "Seeding with the Pennsylvania Drill."

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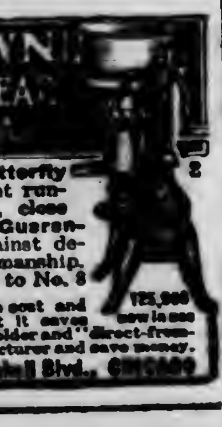
Blatchford's Calf Meal
and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.
Prevents scouring and insures the early maturity of sleek, handsome calves.
It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Company, Dept. 98 Waukegan, Ill.



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$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here.

30 DAYS' FREE TRIAL Earns its own cost and more by what it saves in cream. Postal brings Free catalog-folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

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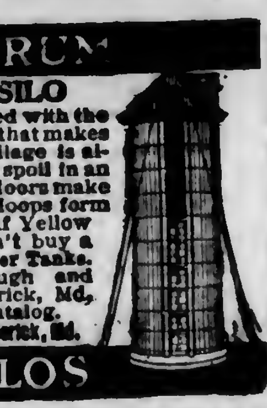

TIGHT AS A DRUM
A PERMANENT SILO
Every Economy Silo is equipped with the Storm Proof anchoring system that makes it absolutely permanent. Ensilage is always fresh and sweet—it can't spoil in an Economy Silo. Perfect fitting doors make the Silo perfectly air-tight. Hoops form easy ladder. Built of long leaf Yellow Pine or Oregon Fir. You can't buy a better silo. Also all sizes Water Tanks. Our motto is quality through and through. Factories at Frederick, Md., and Roanoke, Va. Write for catalog.
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BANNERMAN

ARMY AUCTION BARGAINS
16 page circular mailed 5c. (stamps)

Tents	$4.25 up	New Uniforms	$1.50 up
Swords	.50 "	Saddles	4.65 "
Revolvers	1.65 "	Team Harness	26.85 "
Drill Guns	1.65 "	M.L. Army Gun	2.25
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15 Acres Gov't Auction Bargains, illustrated and described in large 428 pp. cyclopedia catalog mailed 50c. stamps.
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DO YOU KNOW

—How to get a horse from a burning barn?
—How to pick a good brood sow?
—How to feed your cows to give the right color to your butter?
—How to prepare cattle for shipment to avoid heavy shrinkage?
—How to get rid of worms quickly?
—How to pick a good dairy cow?
—How to tell when pregnant animals will drop their offspring?

¶ These and many other valuable questions are answered in a new Live Stock Book we have just issued and which we will gladly mail, postpaid, to anyone who will write for a copy.

¶ It also contains record forms for keeping track of service dates, due dates for mares, cows, ewes and sows. Gives causes, symptoms and treatment of diseases of animals. In fact, is a very useful and valuable book for live stock owners.

¶ It is a thorough treatise on worms in live stock. Illustrates the various kinds of worms—tells how they rob the animals of their food nutrition—how they cause fatal diseases—why they are the direct and indirect cause of over $200,000,000 live stock losses annually and 90% of all live stock diseases.

¶ It tells why no farm or farm animal is free from these costly pests unless regular treatment is practiced. Tells how to get rid of them at very little cost and practically no labor.

¶ It tells about SAL-VET—that wonderful "Veterinary Salt"—a medicated salt which has saved thousands and thousands of dollars for American farmers. How quickly it gets rid of stomach and intestinal worms; how it tones the blood and aids the digestion; how it helps every animal to thrive better, look better, grow and fatten faster and costs so little that it really is not an expense but a big profit maker for live stock owners.

"When I sent for SAL-VET, I had a bunch of hogs which would not eat. When I went to feed them they would just lie still, ignoring their feed completely. Since they have been taking SAL-VET, they eat everything I give them, are doing finely, and are like an entirely different lot of hogs."
W. J. HALL, QUAKERTOWN, PA.

¶ Now, when feed prices are so high, you should get the most return from what you feed, but that is impossible when your stock have worms. They do not always show the worm symptoms plainly, so don't fool yourself by thinking your animals are not affected.

¶ SAL-VET will more than pay its cost as a tonic and conditioner, and in addition get rid of the worms. Ask your dealer about our money-back offer. SAL-VET is the cheapest and best live stock remedy to buy. Write for Free Book, today.

SAL-VET Remedies include SAL-VET Disinfectant and Dip—SAL-VET Hog Oil—Gall-vet—SAL-VET Cow Remedy—SAL-VET Fly Spray—SAL-VET Heave Remedy—SAL-VET Poultry Tonic—SAL-VET Head Lice Ointment—SAL-VET Roup Tablets and SAL-VET Lice Powder. At your dealers and GUARANTEED

THE FEIL MFG. CO. Dept. 105 CLEVELAND, O.
(286)

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Light Four $1185

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POWER farming produces larger crops. Farming with the Huber Light Four produces larger crops *at less cost.* The Huber not only helps you make a larger profit by farming more land, but a larger percentage of profit on each acre under cultivation.

The most efficient unit of farm power. Light! Strong! Flexible! Durable! Weighs 5,000 pounds. Easily pulls three 14-inch bottoms. Plows an acre an hour. 12 h. p. at the draw-bar. 25 h. p. at the belt. Burns gasoline, kerosene, or distillate. Built for lifetime service.

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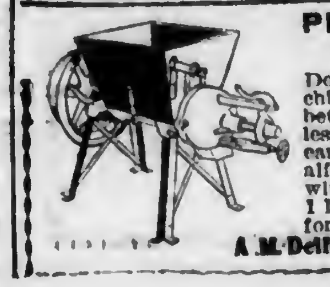

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Double crusher roll machine cut plates. Grind better quality feed with less power, grinds green ear corn, small grains and alfalfa. Also furnished with cast plates. Sizes 1 1-2 to 20 H. P. Write for prices & catalog.
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Sizes 2 to 22 H-P.—Select Your Own Terms—Direct-from-Factory prices. Write your own order—Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE—by return mail, Postpaid.
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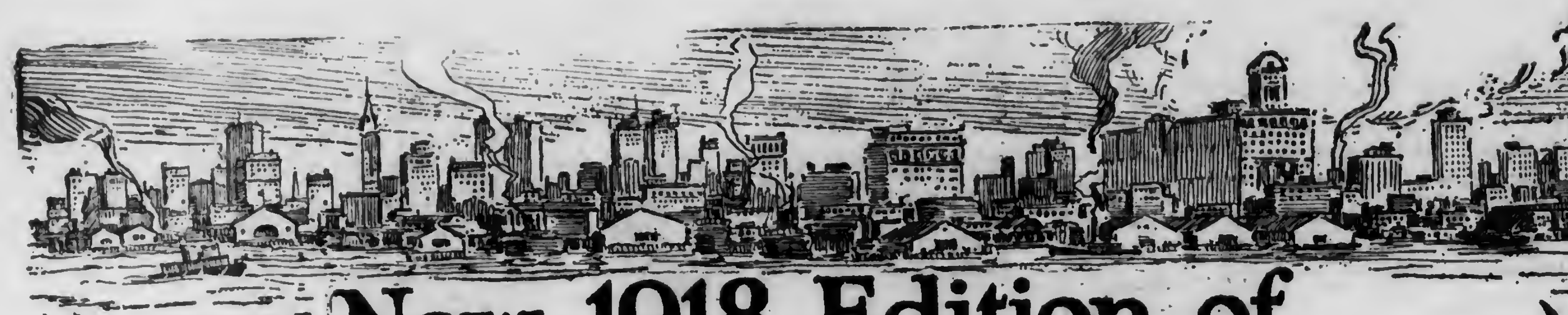


The Charles William Stores
New York City
Your Bargain Book
Catalog No. 1

New 1918 Edition of
Your Bargain Book
Now on its way to you

A few days ago we started mailing to our customers and friends our new 1918 catalog, "Your Bargain Book." It is on the way now. You may have already received your copy. If not, it will surely arrive in a few days.

Be on the lookout for it.

It is the best book we have ever sent out. From cover to cover it is filled with the biggest bargains in our history. It is backed by vast stocks of goods which were secured before the rise in prices. Everything that you want can be ordered from this catalog—and cheaper than in any other way. Tools for the farm, furnishings for the house, or clothes for yourself, are all in "Your Bargain Book."

Look through it carefully when it comes. Make it a practice always to look through it before you make a single purchase. "Your Bargain Book" is your big store.

It gives you a wider selection than you could have in any store in New York or Chicago. It is bigger than the biggest department store in the world. It takes ten mammoth warehouses overflowing with goods to hold the articles that are listed in this book.

100 Carriage Bolts $1.20

17 SIZES ASSORTED — 100 ASSORTED SIZES CARRIAGE BOLTS

First quality carefully cut threads, full sized nuts. Round heads, square shoulders. Sizes from 1½ to 5 inches. Just the thing for repairing buggies, wagons, plows and implements. 1A6020. Shipping weight about 9 pounds. 100 assorted sizes. Price, per package . $1.20

One-Man Lance Tooth Saw

HUDSON TOOL CO.

$1.50 71A6212. Ground four gauges thinner on the back than on the tooth edge. Properly tempered. Fast cutting. Will not bind in the timber. Set, sharpened and ready for use. The best one-man saw made. State length desired. Two pages of saws in Your Bargain Book. See pages 840-41.

Length ft.	3	3½	4	4½	5
Shpg. wt. lbs.	5½	7	7½	8	10½
Price, each	1.50	1.75	2.00	2.30	2.50

Steel 69c Garden Rake

71A2495. None better made. Has forged and polished tines; hardwood handle. Shpg. weight, about 3 pounds.

Number of Teeth	Length of Handle	Price, each
12	5½ ft.	69c
14	6 ft.	72c
16	6 ft.	70c

For any garden tool look in Your Bargain Book—Page 824.

Pruning Shears 49c

California pattern, strong and substantial. Has tempered steel blades, malleable handles and volute steel coil spring. Length, 9in. 2½-in. blade. Shpg. wt. 1lb. 1A2032. Price, 49c

Safety Egg Boxes 78c Dozen and up

19A1235. Made from reinforced corrugated paper in one piece. Can remove the partitions inside. Has the approval of the Postal authorities. Has gum label for shipping purposes.

See page 934 for sizes and prices

Big Value!

57c Steel Garden Hoe

71A1878. Hudson solid steel Socket Garden Hoe. The best hoe made for garden purposes. Made with tempered steel blades about 4¾ inches deep. One piece steel socket, ⅜-inch steel shank, and 4½-foot selected hardwood handle. Shipping weight, about 2 pounds.

Width of blade, inches	6	6½	7
Price, each	$0.57	0.58	0.59

D Handle Manure Forks

89c to $1.28

71A1868. Made of the best quality material. Has oval steel tines, 12 inches long, which are spring tempered and polished. Bent hardwood handles with malleable D heads. Capped and strapped ferrules. Shipping weight, 3½ lbs.

Number of tines	4	5	6
Price, each	$0.89	1.13	1.28

Stag Handle Knife

89c Two large blades, one a saber clip, the other a spear pattern Hand cut stag handle 4⅓ inches long. Length with large blade open, 7⅝ inches. Brass lining. German silver bolster and shield. Finely finished and unconditionally warranted. Shipping weight, 6 oz. 1A4433. Price, each 89c

Any sort of knife you want on page 864 of Your Bargain Book.

$3.22 Wheelbarrow

Painted Red

71A3482. Garden Wheelbarrow with Steel Wheel. Made of selected hardwood, painted red and strongly braced with wood. Removable sides. Has a well made steel wheel, 18 inches in diameter. The bed is 26 inches long and 11½ inches deep. This is a light, easy running barrow which is guaranteed to give satisfaction. Shipping weight, 45 pounds. Price, each $3.22

Drinking Fountain

19A990. The easiest cleaned fountain on the market. Made of heavy galvanized steel with lock seam. Chicks cannot foul the water. Feeds automatically and will not overflow.

Size	Shpg. wt.	Price
2 qts.	2 lbs.	60c
4 qts.	2¼ lbs.	73c
8 qts.	3½ lbs.	83c
12 qts.	4½ lbs.	96c

Flash

45c

in. high and
wide. N
able bulb
cell battery.
36A4001.
Pocket Fla
Shpg. wt
each, . . .
See pages 6
for complete
flashlights.

Maynard Incubator

$8.75

Hot water heating system. Outside is made of one inch lumber. Free from knots. Tongued and grooved. Inner walls heavy fiber board. Cannot warp, crack or rot. The copper tubular tank and boiler constructed to give positive circulation of hot water at all times. Heater is encased in heavy metal jacket. Special lamp of the safest type in use. Famous Double Wafer Thermostat identical with one found in higher priced incubators. For fuller description see page 932 of Your Bargain Book.

719A960	120 egg cap. Ship. wt. 80 lbs.	$8.75
719A961	180 egg cap. Ship. wt. 95 lbs.	$10.85
719A962	240 egg cap. Ship. wt. 120 lbs.	13.95

Bench Wringer $6.25

727A2310 Rolls are 10x1¾ inches and warranted for one year. Flat tempered steel pressure springs, double cog gears, and reversible drip board, wringa from either side. Bench folds into small space when not in use. We absolutely guarantee the rolls for one year but with careful use they will last for several years. The frame is substantially built to give the longest possible service. Real value for low price. Shipping weight 60 pounds. $6.25

Push Bar Garden Cultivator

Great Bargain!

$3.65

Sure death to weeds. Hard to beat for durability and effective work. Furnished with five high grade spring steel teeth, steel plow and weed cutter. One of the most useful garden tools on the market. Spring teeth thoroughly pulverize soil, and destroy weeds. Push bar rests against body of operator and relieves muscles of arms. Wheel is 18 in. high with 1¼ in. tire. Shipping weight, 23 pounds. 719A585 $3.65 Price complete with all attachments.

A dozen other styles shown in Your Bargain Book

RICHLAND GENERAL PURPOSE PLOW

$9.75

Beam of stiff live steel—frog of heavy malleable iron. Handles are selected hardwood. Has a furrow capacity up to 14 inches in width and 7 inches in depth. One extra share furnished free with each plow. Renewable shin. 719A86 With soft center steel moldboard, steel inside and soft center steel share. Shipping weight 110 lbs. Price without jointer or wheel $9.75. Jointer, $2.25. Wheel, $1.25.

$1.89 Seneca Roll Film Camera

Size of pictures, 2¼x3¼ inches. Size
3¼x4½x5¼ inches. Weight 12
posures. The lens is a fixed focus, first
cus. Automatic Shutter for time for
exposures. Two view finders for ho
cal pictures. The diaphragm has two
ings; Quick loading film chambers.
black leatherette. 38A10150 No. 2
Scout Camera for pictures 2¼x3¼ in.
Shipping weight, 2 lbs. Price each

Germproof Steel Barrel Churn $5.63

Germproof steel churns are superior to the common wood churns. They are sanitary, as milk cannot soak into steel. There is no place for microbes to lodge, no seams to open up or hoops to drop off in the sun. With proper care will last a lifetime. Made of all steel, handsomely enameled, inside is heavily tinned, cork-lined cover. Steel welded frame without bolts or rivets.

727A7182 No. 1—Steel Churn; capacity, 5 gal. Churns ½ to 2½ gal. Shipping weight, 18 lbs. Price, each $5.63
727A7183 No. 2—Steel Churn; capacity 7 gal. Churns 1 to 3½ gal. Shipping weight, 30 lbs. Price, each, $7.05
727A7184 No. 3—Steel Churn; capacity, 10 gal. Churns 1 to 5 gal. Shipping weight, 36 lbs. Price, each, $7.75

Round Point Shovel

71A 1621

Made of solid steel, plain back, full polished. Selected handle. Size 9 x 11½ in. Big bargain at this price. Shpg. wt. 5 lbs. Price, each $1.21

FREE We issue special catalogs on the following lines: Paint, Wall Paper, Plumbing Goods, Automobile Accessories, Heating Systems, Sewing Machines and Stylefit Patterns. A post card will bring any or all of them.

Monarch Farm Wagon $79.50

MONARCH

Here is a wagon that you need. Read the following specifications. Can you buy a better farm wagon at any price? **Gear.** The finest oak, thoroughly seasoned. Clipped, not bolted. Hounds are double-braced. Heavy truss rods on front and rear axles. **Axles.** Seasoned hickory. Seamless skeins, large throat and extra heavy. **Wheels.** Hubs, rims and spokes made of the finest air-dried white oak. All steel tires 1½ x ½ in. Tires bolted to sectional rims. Or you can have bent rims refitted at the side of each spoke at no additional cost. **Box.** Yellow pine with tongued and grooved floor. Comstock patent end gate. Tie chain to prevent spreading. **Tongue.** Finest selected white oak. Choice of round hound drop tongue; square hound drop tongue; or square hound stiff tongue. **Track.** Comes in 4 ft. 6 in. or 5 ft. track. Be sure and state which you want. **Painted Green.** Handsomely striped and ornamented. Gear is painted red. 931A1211 Monarch Farm Wagon: Tires 1½x½ in. Wheels 44 inches high in front, 52 inches in rear. 2000 pounds capacity. Shipping weight 900 pounds. More complete information on page 962 of your Bargain Book. Price complete.... $79.50

Here's Entertainment!

Wonder Talking Machine $20.21

713A501 Cabinet: Colonial Mahogany Finish. Plays all disc records. Motor: Double spring of the "worm gear" type. This style motor is noiseless, has less variation in speed and runs more evenly than the ordinary type It is powerful enough to play three 10-inch or two 12-inch records with one winding. Equipped with brake and speed regulator on the top of the machine. 10-inch turntable covered with high-grade felt. Will play 12-inch records. given free with each machine. Shipping weight, 42 pounds. Price, each . .

Little Wonder Records—Play From 3 to 5

10¢ EACH

13A507 Blue Danube
13A643 Star Spangled Banner
13A892 Joan of Arc
13A43060 "Lucia" Sextette
13A709 Over
13A696 Huck
13A562 America
13A43274 In the

Send your name and address for free monthly bulletin of new
Every kind of a record for 10 each.

BULLS EYE RIFLE OUTFIT

$3.49 Consists of high-grade accurate shooting rifle 22 caliber; a rifle carrying case of heavy canvass; jointed rifle cleaning rod and box of 50 cartridges. Uses 22 short, 22 long or 22 shot cartridges rim fire. Length of rifle 28½ inches. Shipping weight (by express) 6 pounds.
17A7018 Price for complete outfit $3.49
17A7019 Rifle only (parcel post 4 lbs.) . . . $2.49

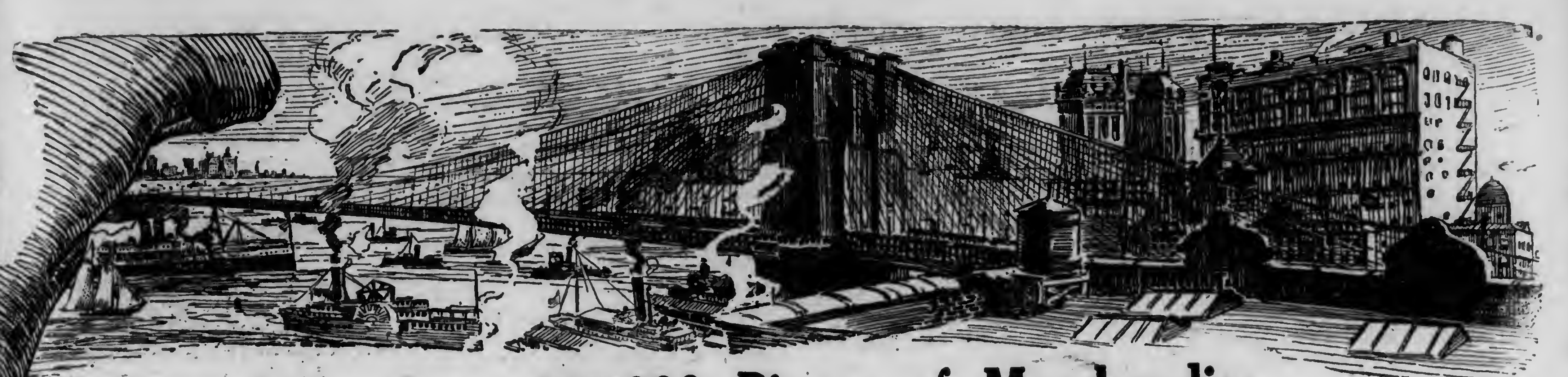
Buy in New York and you will help to solve the transportation problem.

FROM NEW YORK

Trains from New York lightly loaded, trains to N.Y. heavily loaded with munitions.

TO NEW YORK

Tho cars are bringing food and
ammun New York for exportation.
These c loaded here and are available
for send York goods to you.



Lists Over 180,000 Pieces of Merchandise
Answers the Question: How to Save This Year?

Every single item in "Your Bargain Book" will show you a handsome saving. Compare each price with what you have to pay for the same article elsewhere. That is the definite and sure proof of the tremendous bargains which fill this book.

Many of the things listed were bought on contracts before the last rise in prices. As a result you get exceptional savings on these. We were able to buy the entire output of many manufacturers. Our tremendous number of customers, representing 10,000,000 people, enable us to *sell* cheaper than most stores can *buy*.

Save money this year by consulting "Your Bargain Book" before you make a single purchase. If you haven't this big book, send for it today. The values on this page are simply a sample of the savings you will find on every page of "Your Bargain Book". You may order from this page, but be sure to look in your Bargain Book for complete line.

85 Skew Back Saw

HUDSON TOOL CO. No 012 CABINET-PATTERN MAKERS GRADE

h crucible steel of special formula. Ground on back and scientifically tempered. Smithed with extreme care. Hand beveled. Carved handle carefully adjusted to balance nicely in A saw that is built for quick sure work. One of est tools on the farm. Each saw warranted to as represented. 1H7000 26 in. size . $1.85

LICE KILLING NEST EGG 15c per Pkg. 42c per Doz.

19A982 Contains a powerful disinfectant which we guarantee will expel lice and vermin. Shipping wt., per doz. 2 lbs. Price, per pkg. of 4 eggs 15c Price, per dozen . . . 42c

Broad Hatchets

Finest cutting edge. Will not rust quickly. 1A9234 State size

Size	Bit	Wt.	Price
1	3½ in.	1¾ lbs.	$1.22
2	4 in.	2¼ lbs.	$1.34
3	4½ in.	2½ lbs.	$1.61
4	5 in.	3 lbs.	$1.70

70c Serviceable Hammer

Plain face, hickory handle. Hand forged. Natural oil temper color, practically rust-proof. A hammer that hangs right. 1A9230 Weight 13 ounces Price, each 70c

SCHRADER TIRE GAUGE

SCHRADER UNIVERSAL TIRE PRESSURE GAUGE

2A5048 Generally sold at higher price. Correctly registers the tire pressure and stays set until released. Simply push indicator into place to reset. Two in. long, ½ in. in diameter Price, each . . $1.09

Stewert Speedometer $6.95

2A3550

Indicates all speeds up to 60 miles an hour 10,000 mile season register, 100 mile trip register. Full jewelled bearings. Silver etched dial face. Finished in lacquer and polished metal trim. Shpg. Wgt. 17 lbs. Price Speedometer and fittings complete for attaching, each . . $6.95

Prevent Fire Losses Pyrene $8.50

Smothers fire instantly. Pyrene is non-damaging and non-corrosive. Keeps its power until used. Length 14 in. diameter 3 in. 2A5071 Brass Finished Extinguisher Charged. Price complete with bracket . . $8.50

$2.98 Winter Storm Boot

made of satin calf.
ck felt top, warmly
ghout. Wide cap toe
y half double soles
ad heels with rubber
ng leather backstay.
2. No half sizes. State
400 Our $2.98

$2.79 Work Shoe

Remarkable value in men's heavy wax veal unlined Blucher Work Shoes. Roomy comfortable cap toe last. Heavy soles double fastened, screwed and sewed. Viscolized outsoles; warranted insoles and counters; securely nailed heels. Sizes 6 to 12. No half sizes; wide widths. State size. 7A2911 Tan Veal leather, our price $2.79 Shoes for all the family can be found in Your Bargain Book

Alcohol Stove 23c

SOLID ALCOHOL

17A4145 No smoke, no danger of explosion, absolutely safe. Generates good, strong heat. Heavy frame. Outfit consists of a nickel boiler, with nickel handle, that holds one quart; a strong, reinforced wire stand, and a can of fuel. Shpg. wt., 1½ lbs. Price, each 23c

17A4146. Extra can of Solidified Alcohol. Price, per can . . 10c

Printed Tapestry Brussels Rug

Oriental design. These rugs are all perfect. Will give good service and are a wonderful value at this price. This rug will look well in any room! You will make no mistake buying this rug. Our guarantee protects you as to quality. Size 27 x 54 in. Shipping wt. about 2½ lbs. 8A5544 Price............$1.05

"Simplex" Vacuum Bottles $2.39

17A3122. Lunch Kit. Covered with Waterproof Imitation Leather. Contains a removable metal lined lunch box, also a pint size Vacuum bottle held to cover by a strap. Kit cloth lined, has a snap lock and leather handle. 11 x 4¼ x 6¾ inches. Shpg. wt., 6 lbs. Price, each . $2.39

New York Milk Can $6.60 and up

72A7011. This pattern is the most popular in the east. Umbrella top cover and curved drop handles. Inside bottom hoop is thoroughly tinned. Size, 5 gal, Size of neck, 6⅛ in. Shpg. wt. about 5½ lbs. Price . $6.60

Size, 10 gal; size of neck, 7¼ in. Shpg. wt. 26½ lbs. Price $8.20

Family Handy Spring Scale

$1.92 727A1706 Very dependable for household use. Steel throughout; finished in black enamel. Double posts. Dial white enameled; measures 4¾ in in diameter and marked with plain black figures. Large tin scoop furnished. Cap. 24 lbs. by oz. Shpg. wt. 5½ lbs. Price, each . . . $1.92

Dining Room Table $9.65

Made of handsome solid oak. High gloss, golden finish. 6-ft. length. 42 inch top. 8 inch turned pedestal, shaped legs. An attractive addition to your dining room at a very low price. Extra leaves are furnished with all tables. S.W. 6-ft. length, 120 lbs. 95A—107. 8-ft. length, $9.65
8-ft length . . . . $12.50 10-ft. length . . . $13.95

BED, SPRINGS and MATTRESS $17.30

Remarkable combination value. For $17.30

Or sold separately. 75A2259 Bed. Continuous 2 inch posts made of high carbon steel tubing. Head 53 in. high, 3 widths 4 ft. 6 in., 4 ft. or 3 ft. 6 in. State size. Price, each $7.95 75A2305 Spring. 1 1-4 inch tubular sides. 2 x 2 angle iron ends. 56 helical springs. Double riveted to prevent warping $4.80 Mattress 5 inches thick. Covered with good grade striped ticking. See page 707 of Your Bargain Book for full particulars.

Duplex Fireless Cooker $21.00

DUPLEX

727A4330 Duplex Fireless Stove. 30 in long, 15 in. wide and 18 in. high. With detachable legs, 33 inches high. Cooking capacity 20 qts.; one large well, 13½ in. deep and 10½ in. in diam.; one small well, 13¼ in. deep and 8¾ in. in diam. Aluminum lined. Four aluminum vessels—one 12-qt., one 8-qt. and two 2 qt.; three large baking and roasting disks; one disk lifter; folding baking rack; Duplex aluminum mat and Duplex Cook Book. Shpg. wt., 126 lbs. Price, without legs $21.00
727A4348 Set of 4 legs $2.50

Kitchen Cabinet

45 71 inches high, 38 inches wide and 26 in-
Front of solid
of selected
Light golden
Inside meas-
of top cup-
inches high,
wide and 10
p. Doors per-
fitted Contains
and all metal
fitted with sif-
of base furnish-
surface 26½ x
Base cupboard
deep, 20½ inch-
25 inches high
weight 160 lbs.
price $15.45

$1.55 High Chair

75A368 Selected grade of hard wood. Finished in golden oak color. Seat 13 in. square. Adjustable tray 8x16 in. Shipping wt. 14 lbs. $1.55

$1.30 each

Set of Six $7.60 Per 100 $120

SOLID HARDWOOD KITCHEN CHAIRS

Finished in a beautiful golden color with high gloss. Saddle seat. Brace arms. Seat 16x16 in. Height 38½ in. Shipping weight 12 lbs. 75A1166. Price ea. $1.30

Barrel Spray Pump

Fine For Orchard Work $10.25

Will spray all kinds of spraying mixtures, whitewash and cold water paints. You may attach this sprayer to barrel, load it on a wagon and have a first-class portable spraying outfit for orchard work. All working parts of brass, will not corrode or rust. Double paddle agitator keeps the solution thoroughly stirred up.

Equipment—5 feet of three-ply ½-in. hose and Vermorel Nozzle. Extra attachments for two leads of hose at extra cost. Shipping weight, about 45 pounds. 719A824. Price, complete with 1 lead of hose $10.25
719A826 Brass "Y" attachment to connect two leads of hose 90c
719A826 Extra 5-Foot length of hose with Vermorel Nozzle $2.35

The Charles William Stores New York City

Meeeting of New York State Potato Growers

The annual meeting of the New York State Potato Association was held at the State College of Agriculture, Ithaca, in connection with Farmers' Week, February 11-15, inclusive. As New York state farmers last year produced 38,000,000 bushels of potatoes valued at $49,000,000, the importance of this meeting is very apparent. The association has for its primary object the development of a certified seed potato growing industry. A report of seed certification work in 1917, given by Secretary E. V. Hardenburg, showed that much progress is being made in this line of activity. The association was organized in 1914 with 27 members. It now has 122 members with eight affiliated local associations. Seventy-eight members are growing certified seed. Last year there were 330 acres of seed that passed inspection, and the total amount of seed certified was approximately 76,542 bushels. At Wantaugh, Nassau County, L. I., certified seed yielded 515 bushels to the acre, while ordinary seed yielded 340 bushels to the acre, a gain for certified seed of 175 bushels to the acre over the common seed. In view of these figures, the question, "Is certified seed worthy of a premium?" seems to be superfluous.

Standard Grades

The subject of Federal standard potato grades was discussed by H. E. Truax, of the United States Department of Agriculture. "The main reason for grading potatoes," said Mr. Truax, "is that we may have a uniform standard basis by which potatoes may be bought and sold. If the dealer knows what he is buying he can reduce the margin for imperfections and uncertainties and make a fair profit, and it also enables him to supply special demands of the trade." Extensive investigations have been made by government experts with a view to ascertaining the most practicable grades for the entire country, the present grade requirements being the result of this investigation. The benefits of grading will become more apparent when the practice becomes more general and consumers recognize the extra value of the graded potatoes."

Inspection

In regard to the need for government inspectors in the leading potato markets, Mr. Truax said that under old conditions, when potatoes were shipped on inspection the farmers lost out many times, the dealers making unjust objections. Government inspection seeks to remedy this evil. Several dealers have already been put out of business by the Food Administration on account of unfair rejecting of potatoes.

Value of Grading to Grower

Daniel Dean, of Tioga County, spoke on "The Value of Potato Grading to the Grower". The first requirement in making grading profitable, according to Mr. Dean, is knowing how to produce potatoes that will grade high enough to bring a profitable price He gave proof that he has been successful in solving this problem. One dollar a bushel has been the shipping point price for potatoes in Southern New York this winter. Mr. Dean has sold several cars at $1.32 per bushel. Maine and Long Island growers receive higher prices because their potatoes are graded. Grading is insurance. Because of the use of selected seed, good culture and thoroness in spraying, Mr. Dean's crop yielded only five percent of culls, and this work netted him $200 to the carload.

Community Spraying

"Community Potato Spraying" was the subject of an address by Dr. W. H. Rankin, in which he pointed out the advantage of this system in communities where general farming is carried on, the growers lack the time to do thoro spraying, and the acreage is too small to warrant the purchase of an expensive spraying machine. It may also help in solving the labor problem. While potato spraying is not so complicated as orchard spraying, it will add about 15 percent to the cost of growing the crop. One spraying machine will take care of 100 acres. In communities where the range is from five to ten acres, one machine will do the spraying on several farms. The sprayer himself may own the outfit and furnish the materials. Another method is for the community to buy the outfit and hire a man to do the work. The man who does this work must be reliable and experienced. He must provide an efficient sprayer and know how to keep it in repair. In the contract with the grower he should agree to spray the potatoes not less than five nor more than seven times. The spray man should charge a certain sum per acre, and growers wishing double-spraying should be charged double rate. The spray man should be careful not to engage too large an acreage, and there should always be a written contract between the grower and the spray man.

Professor Rankin thought farm bureau managers could help in seeing that this method is given a fair trial, and thereby greatly extend spraying operations. Records kept on a number of farms, allowing $5 to $6 a day for man and team, gave the cost of spraying for the season at from $7.50 to $9 per acre.

Seed Selection

H. B. Sweet, of Oneida County, told of his experience with potato seed selection. His experiments with tuber unit hill selection were begun in 1914. Seed tubers from high and low yielding potatoes were planted the second year, and records of yields have been carefully kept. This method was repeated both with the best and poorest yielding potatoes in 1916 and 1917. The best yielders have always been best, the medium have remained in the medium class and the lowest yielders have given the poorest yield as the result of successive selection.

In a test with planting large and small seed, the large seed yielded 37 bushels per acre more than the small seed.

Shippers' Problems

In a talk on "The Potato Shippers' Problems," H. C. Hatch, of Steuben County, gave some facts showing that the shippers as well as the growers have had serious troubles this season. In his opinion, most all of the 1917 potato crop has been sold at a loss and the balance will be sold at a still greater loss. Owing to railway congestion, many thousands of bushels of potatoes have been frozen in transit, and there have been long delays in shipping seed potatoes to Florida growers. This has caused many shippers to go out of business.

Quality and grade were emphasized as serious problems. Instead of raising many varieties, farmers in each section should co-operate in growing one variety, and develop the best type.

Receivers' rejections are a disadvantage to honest receivers and a loss to the shippers. Mr. Hatch thought the establishment of uniform grade and inspection would largely remedy this condition. Nearly all dealers are now using graders, and the shipping of culls has been largely eliminated. In Florida all the potatoes are graded on the farm. The farmer puts his name on each package. By putting up a standard pack, higher prices are received and there is less danger of rejections. Under the present law shippers or their agents can ask for inspection, and as this inspection system becomes better established, shippers are going to be more careful as to the quality of stock they ship.

President E. R. Smith suggested that considering the heavy losses caused by poor railway facilities, pressure should be brought to bear to influence railroads to fit up cars suitable for shipping potatoes. It was also suggested that in large potato growing districts potato trains similar to milk trains might be run, the loading being done on certain days.

Potato Diseases

Professor F. C. Stewart spoke on "Potato Diseases We Should Know," saying that there are some 42 distinct potato diseases, but the good potato grower does not need to know all of them. He sprays in season with bordeaux mixture, and treats the seed with corrosive sublimate and thereby gets satisfactory results in controlling potato diseases.

An excellent potato show was held by the association, which attracted much attention. All the leading potato producing districts were represented, and it is predicted that thru the influence of the state association quite a number of local organizations will be formed, and the quantity of certified seed potatoes largely increased.—E. E. Reynolds.

WEEKLY MARKET REVIEW

Potatoes Generally Lower

The markets in the producing sections settled to a rather more steady basis during the week, holding in some sections at about the low points of the preceding seven days, but the general tone was still very weak. New York Round Whites sold at irregular values, ranging generally $2.25@2.50, but declining to $2 per 100 lbs., bulk, in Philadelphia, altho holding at $2.90 sacked, in Boston.

Northern Cabbage Prices

The position of Northern cabbage seems firm in the producing sections. Sales were mostly $55 per ton in bulk, f.o.b. Rochester, New York, but the market closed weaker at $50@53. Movement increased moderately to 181 cars from New York and 62 cars from Wisconsin. Last year at the corresponding date, the cabbage movement from New York State was practically finished. This year it is reported about 500 carloads remain in central and western New York. New York Danish Seed ranged stronger, mostly $60@70 per ton in leading markets, and $3.27@4.25 per 100 lbs. in small centers. Wisconsin Holland seed sold $60@70 per ton in Chicago.

Apples at Firm Values

Demand continued good for barreled stock of standard kinds and fair to good for boxed apples. In the western New York shipping section, Greenings were quoted $5.50 per barrel, Baldwins $5.25, Ben Davis $3.25, all "A" grade f.o.b. Rochester. Sales of Northwestern boxed extra fancy, medium and large sizes, ranged higher at $1.65@1.90 for Winesaps, and $1.65 for Romes, f.o.b. shipping points in the growing sections. New York to date has shipped but little more than one half as many apples as last season to corresponding date, while Washington has moved fully 1,000 cars more than last season to corresponding date. Jobbing prices were fairly steady. New York Baldwins, "A", ranged $5.25@5.75 per barrel. New York and Michigan Greenings, "A", sold at $5@6.25. New York and Michigan Spys, "A", from storage, held at $7 in a few markets.

ODDS FACED BY ENGLISH FARMERS

The burden of war on farmers of Great Britain and the importance of help from the United States may be judged from a public address by R. E. Prothero, President of the British Board of Agriculture. Extracts of his speech to farmers follow:

"As a nation we are fighting for life. Men, munitions and money are certainly on our side. Only food is doubtful. Remember what a shortage means. Hunger is hard to bear. It turns strength to weakness; it saps endurance; it starves courage; it breeds discontent, suspicion and bitterness.

"Whether the autumn of 1918 finds us at peace or at war, the supply of food is of vital importance. The task which is set to farmers and laborers will test their grit to the utmost. They are on trial before the eyes not only of this nation but of the Allies. Heavy odds are against them. They are handicapped by want of skilled labor, by shortage of fertilizers, feeding stuffs, horses and implements, and by the interferences which follow in the train of a colossal war.

"But every added quarter of grain, every extra pound of meat, every additional quart of milk will help to turn the scale in the nation's favor. No greater responsibility has every rested on the inhabitants of these islands than that which rests today on those who cultivate the soil. It is hard for some of us to realize we are actually fighting for our lives."

These remarks should help us to realize anew that "food will win the war" and that increased production and conservation are both of vital importance.

SELL WHEAT FREELY

The Food Administration is very anxious that farmers ship their wheat just as soon as transportation conditions will permit as the supply is very necessary to be maintained at this particular crisis.

Nothing is to be gained by holding wheat as far as the price is concerned and it now looks as if the weather is going to permit as free transportation as can be expected for some time and therefore it would be exceedingly helpful in meeting the present critical food situation if the wheat should be moved freely to market.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

EXPRESS SHIPMENT EXPERIENCE

Carrier Troubles Destroying Business

I note the effort being made to stimulate the farmer to produce more foodstuffs than ever before. Under our strenuous conditions this sounds like good work. We fully realize that we have burdens to carry under these conditions that we have never carried before. But how are we butter-and-egg producers going to live under conditions now existing? Following is a letter and affidavit from our egg buyer which speak for themselves:

"Your two half-cases of eggs were delivered to me yesterday in a very badly frozen condition. The Adams Express Company carted these two half-cases of eggs around in an open wagon for several hours before they made delivery, and the weather yesterday in this city was below zero.

"I would have assumed claim myself as usual in order to save you the trouble of filing claim yourself, but the Adams Express Company absolutely refused to allow me to sign up for frozen eggs. I am therefore enclosing my sworn affidavit to that effect. I am sorry it may put you to some inconvenience but I think that the Express Company will have to pay you the difference. Respectfully yours, Alex. Mersel."

The affidavit follows: "I, the undersigned, do hereby make affidavit that on the 5th day of February, 1918, between the hours of 5 and 6 P. M., the Adams Express Company delivered to me two half-cases of eggs from Leon Van Noy, on an open wagon No. 231, in a badly frozen condition, for which the Adams Express Company's driver and inspector absolutely refused to allow me to sign up for frozen eggs. (Signed) Alex. Mersel."

The express company has refused to pay damage for frozen or broken eggs since the Government has taken charge of railroads, or have begun to muddle up railroad affairs. We have tried parcel post shipments and so far it has been very unsatisfactory owing to breakage. While all of the packages have been insured, we have not received one cent damage as yet, as the parcel post has so much red tape connected with it. Unquestionably we will get the money in time, but this keeps us out of the money and money is what we need to produce eggs.

Some years ago we were making butter on the farm. I have been forced out of that business against my own convictions by unreliable carriers. I now have a suit pending with the express company for some bills of butter and eggs dating as far back as April, 1917. And yet these carriers charge exorbitant tariffs, as the last two half-cases of eggs we sent (the ones referred to in the letter) cost us $1.69 for express, or more than 5½ cents a dozen. This is outrageous to say the least.

Some readers may say "it does not pay to deal with commission men; deal direct with the consumer". Following is a letter from one of our customers:

"Dear Sir: Your letter of Feb. 4th just received. We have not received the eggs shipped by you on Jan. 25th. There is no use trying to ship by express. Please send by parcel post. It is quicker and safed. Please send eggs as soon as possible by parcel post.—Very truly, G. S. Emmons."

This man has been a butter customer for six years and now is getting eggs. We would be glad to furnish him with butter now if we could only get it to him. We also have other customers and as a rule it is harder to get damage from these small lots than it is from larger lots consigned to reliable commission men. The latter always want your business and will do all in their power to help you. And they have more prestige with the express companies than the consumer who uses from two to twelve dozen eggs a week. We still have our butter-making equipment, hoping some day that this carrier business will be straightened out and we can get a fair deal. But so far it is steadily growing worse and the end is not yet.

Tonight my poultry manager gave notice that he was going to quit as he could not afford to stay with the business any longer under these conditions. We have been running this part of the business on the fifty-fifty plan, and it ought to work satisfactorily. It would be a paying proposition if we could only get the eggs to the consumer at market prices. But with present conditions it is a failure.—Leon O. Van Noy, Bradford Co., Pa.

FOOD CONSERVATION

We are warned again and again that our Allies have not enough food, and that we ourselves are almost short. Responding fully to these demands is no more than any loyal American ought to do or will do. It is small duty in support of the boys who have given up all to face the enemy, and of our Allies who have so nobly stood between us and destruction.

But it is hard to see why we should need to practise extreme economy while the breweries get carload after carload of sugar and many families do without for many days at a time. Why should brewers be allowed to use grain for making poisonous beverages to weaken and degrade our fellow citizens, when the need for wheat, meat and fats for ourselves and the Allies is so great? The farmer is urged to raise larger crops and save food as well. Why? For brewers to use to destroy, people and wealth, or to save people from starvation?

President Wilson has the biggest job in this country and he is doing as well as any man could do. But one thing more he should do quickly. He should stop the liquor business.—D. W. Stahl, Indiana Co., Pa.

FULL OF FIGHT

Occasionally one finds a strong-hearted, hard-fisted, clear-thinking patriot who is fighting mad and knows why and who is bending every effort to serve his country, wishing he could be in France with a gun and at home producing food and making munitions and other things for war purposes all at the same time.

Recently we met one such who is a farmer, and it was good to meet and talk with him. For some of his rich neighbors who gave all of a dollar to the Red Cross and who bought a whole $100 Liberty bond he had little time. And he said some things not entirely complimentary to those farmers ready to give up because "they can't get help".

"Neither can I get help," he said, "but do you think I'll be downed by that handicap? When I get at the old farm next season there is going to be some little stirring around and I'll plan and work and I'll grow, God willing, as much as I ever grew before. I'll just get thru somehow, because I've got to. We Americans are not weak-kneed and we're not yellow. We will win because we've got to, but some of us need to brace up and fight harder and complain less. If we depend on the boys going over to do all the fighting—God help us, and them!"

He was not boastful, neither was he excitable or hot-headed. He was just full of fight, that's all. Nothing can stop a nation of that kind of men. Nothing will.—Ithaca Journal.

POOR FRUIT PROSPECT

I think the article by C. C. Hulsart on "Farming and the War" in your issue of Feb. 2 one of the best and most comprehensive I have read along that line in any of the agricultural papers, and I don't find anything of the kind anywhere else.

I am just getting in the last of my corn today; have about 6 acres of it to husk yet. I have done no pruning and did no fall plowing. None of the usual fall work was touched. My sons and myself have about 11,000 bearing peach trees and we are unable to find one live bud. The sweet cherries are in about the same condition and the plums are badly killed. We do not know about sour cherries and apples as yet. Last year, with four men, I put in every bit of land possible in spring crops, and haven't got them finished yet.

What to do this year is the question. If I hire three men at the present wages asked, it will cost me $2,000, and how I am to get that out of the farm I can't figure. If any of the numerous commissions can tell me I would be very grateful to them. I am thinking now of hiring one good man and letting him do all he can and let the rest go. I am handicapped by being too old to do physical labor to any extent.—T. H. King, Sr., Tompkins Co., N. Y.

RELEASE FARM LABOR

Why can not the farmers petition Secretary Houston to close poolrooms and ask all merchants as a patriotic move to discharge all men and boy clerks in city and country stores of all kind? This would release men for farm work as these clerks come largely from the farms.

Get after owners of all non-essential manufacturing plants. Ask them to lay off men and close their plants in localities where it would help in rush seasons. These will not be trained men but farmers must not complain of the kind of help. Big industries get along with whatever shows up.—A. R. S., Tompkins Co., N. Y.

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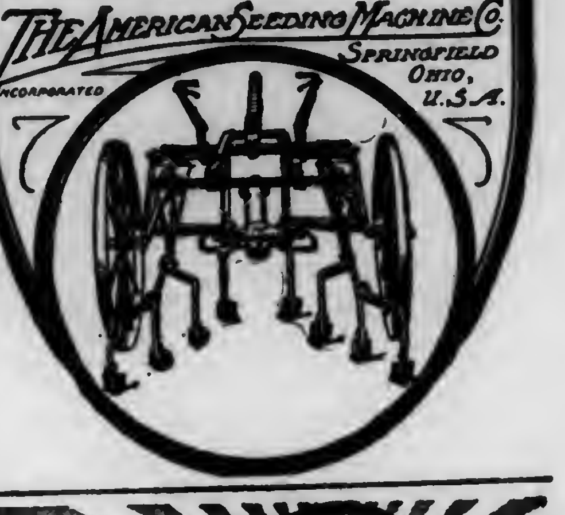

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It's the Borax with the soap that does the work.

AT ALL DEALERS

The Home Sewing—VI

By M. JANE NEWCOMB,

Home Economy Department, Pennsylvania State College

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Bands

Cutting Them.—A band should be cut lengthwise of the cloth for strength, as the warp threads are much stronger than the filling threads. Cut the desired width and one to two inches longer than the place it is to occupy, to allow for turning at the ends.

Preparation of Band.—Baste down about ¼ inch on both sides of the band, then turn in the ends to make the band the desired length. Fold the band lengthwise thru the middle so that the raw edges are on the inside. Divide the band into halves (if very long into quarters), marking the points.

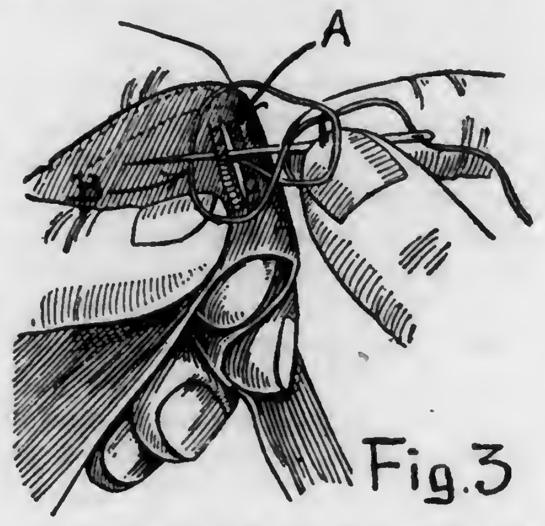
Putting On.—The gathers on the garment should be carefully placed, with halves and quarters marked. This done, place the gathered edge of the garment inside the band, matching the halves and quarters. Baste the folded edge of the band to the gathers on the right side of the garment so that the edge just covers the gathering thread. If the band is to be put on by hand, hem this edge to the gathers before basting down the edge of the band on the wrong side. After the hemming has been done on the right side, baste down and hem on the wrong side, and overhand the ends. If the band is to be stitched on by machine, baste the folded edge of the band to cover the gathering thread on both right and wrong sides of the garment. Baste the edges evenly together at the ends. Stitch near the edge of the band on the right side, making sure that the stitching takes in the edge on the wrong side as well. Overhand the ends or stitch across them.

Buttonhole Suggestions

Making Buttonholes

Cutting.—Decide upon the placing of the buttonhole, i.e., how far it is to be from the edge of the opening, and place a pin at this point. Following a thread, measure the length of the buttonhole, and place a second pin at this point. For a flat button a buttonhole the length of the diameter of the button is needed; for a round button one slightly longer. Crease from one pin to the other, remove one pin, insert the point of the scissors in the hole from which the pin was removed and cut slowly until the second pin is reached. This makes an even edge, which finishes into a neater looking and better wearing buttonhole than if cut carelessly. Each buttonhole should be cut just before it is made to avoid unnecessary raveling.

Stranding. — This is done to strengthen the buttonhole and to act as a guide in making. There are three ways of stranding. A double bar the entire length of the buttonhole (Fig. 1, A, and Fig. 2, C. F.) may be stretched on either side near the edge; or a running stitch may be done along the same line; or, if the material is easily raveled, machine stitching can be done along the edges of the buttonhole. To make the buttonhole still more durable we next overcast the edge with a fine even stitch. (Fig. 2, B.)



How To Hold Buttonhole Work

Buttonhole Stitch.—Hold the work over the forefinger of the left hand, with the buttonhole following the line of the finger (Fig. 3, A) and with the edge of the garment at the left. Work from right to left, beginning at the end at the edge nearest the worker. Insert the needle so it will come out at right angles to the buttonhole. With the needle in position take the thread from the eye end of the needle and throw it around the point of the needle (Fig. 1, B; Fig. 2, D; Fig. 3, B) from right to left. Draw the needle up so the purl will come on the edge of the buttonhole. Make the stitches near together and even, being sure to throw the thread and draw the needle in the same direction each time.

To make the curved end nearest the edge of the opening of the garment arrange six or seven stitches in the form of a fan (Fig. 2, E). The other end should be barred or stayed by drawing together with three firm stitches instead of working around the curve as at Fig. 2, E. Then make three or four buttonhole stitches (Fig. 2, A) over these three stitches, and fasten on the wrong side.

CARE AND USES OF MAPLE SUGAR AND SYRUP

More maple products would be used and enjoyed if people generally knew how to care for them and what uses to make of them. Sugar in a hard cake is most easily cared for by wrapping each cake separately in white paper and tying it securely. Place it in a dry place, not necessarily a cold place. Ants can not trouble it when wrapped in this way.

There is more to be known about properly caring for maple syrup than for sugar. This should also be stored in a dry place. When a gallon can of syrup is first opened, if it is warm weather, it should all be poured out of the can at once into glass jars with tops that fit. Fill the cans full, putting on a clean dry rubber and placing the wire clamp of the can into position. If screw-top cans are used see that tops are tight. Many people believe that syrup is similar to honey in regard to its keeping qualities after a can has been opened, but it is not. We all know that a can of fruit when opened will soon spoil. Altho syrup will keep a great deal longer than fruit, we must not expect too much of it, especially in warm weather and left in a can half filled. A mold will form upon the syrup and when once it does form, there is nothing one can do to remove the taste in the syrup.

It is not necessary to heat the syrup nor seal the cans with heat when putting it into glass jars. Syrup will keep indefinitely if the jar is full and the tops fit tightly. If syrup crystallizes in a glass jar, pour a little warm water into it and set the can in a warm place, giving the crystals their own time to loosen. A little boiling water to hasten it will be almost sure to break the can. To clean cans and avoid waste, add water to either sugar or syrup and then boil down again.

For my own use, I prefer syrup rather than sugar, because using syrup, I can soon make soft or hard sugar and reheating the syrup gives it a fresh taste. Some people feel that maple sugar and syrup are an expensive luxury, but if it is bought directly from the producer, a year's supply at a time, and if a little white sugar is added to the maple when it is used, a gallon of syrup at $1.25 to $1.50 per gallon will return full value for the money spent.—S. M. T., Tompkins Co., N. Y.

SERVICE STAR BELT

Some of the girls whose fathers or brothers, cousins or sweethearts in our army or navy or aero service are wearing stars on their belts to indicate the toll of their interest and connection with the war vicissitudes.

(Photo by Underwood & Underwood)
Service Belt

CABBAGE IN MANY WAYS

Cabbage Salad.—Cut cabbage fine, crisp in ice cold water and dry in a wire colander. Make a dressing as follows: Cook together the beaten yolks of 3 eggs, 1 tablespoon sugar, 1 tablespoon olive oil, ½ teaspoon mustard, ½ teaspoon salt and ½ cup thick sour cream. When smooth take from fire, add 1 teaspoon good vinegar, pour over the cabbage and serve.

Cabbage with Sausage. — Fry 6 sausages crisp and brown, drain off all but 3 spoonfuls of the fat. Put 1 quart of finely chopped boiled cabbage in the pan and cook 10 minutes. Season with salt and pepper, put in the middle of a platter, garnish with the sausage and put a border of hot mashed potatoes around outside.

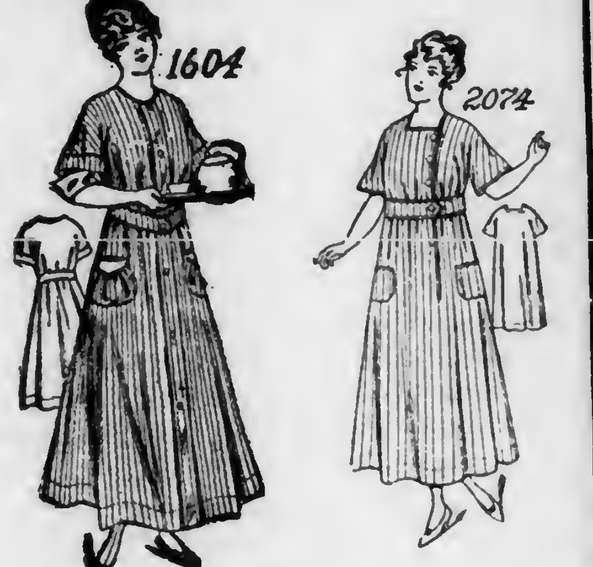
Braised Cabbage. — Quarter the cabbage, parboil and let cool. Cut thru each quarter several times with sharp knife, season with salt and pepper and put in saucepan with a few slices of thin bacon, 1 carrot sliced, 1 onion sliced, 6 cloves and a bunch of seasoning herbs. Add 2 cups soup stock, cover top with thin slices of bacon and braise for two hours.

Cabbage Pudding.—Cook 1 cup chopped cabbage in salted water, drain in colander. Beat 3 eggs, 1 cup bread crumbs and 1 cup rich sweet milk or cream, and a seasoning of salt and pepper. Add this to the cabbage, pour into a baking dish and cook in moderate oven.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

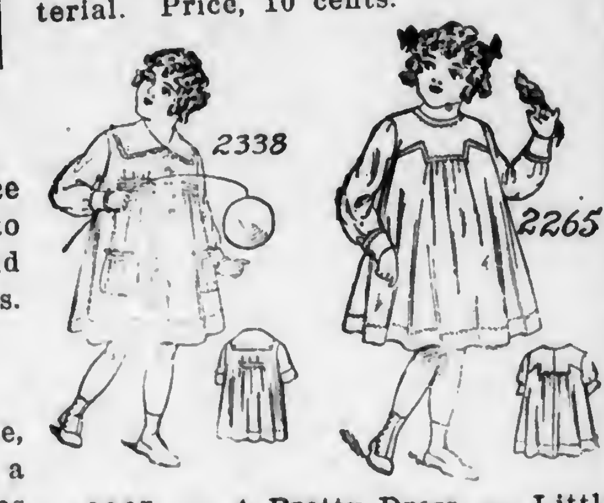
1604. — Apron with or without Belt.—The closing is under a boxplait at the center front. The full pocket is a desirable feature. Pattern comes in 3 sizes: Small, medium and large. It requires 4⅞ yards of 36-inch material for medium size. Price, 10 cents.



2074.—"Coverall" Apron.—Striped seersucker was used in this instance. The belt may be omitted. Pattern comes in 4 sizes: Small for 32 and 34 inches bust measure, medium for 36 and 38 bust, large for 40 and 42 bust, and extra large for 44 and 46 bust. It requires 5½ yards of 36-inch material for medium size. Price, 10 cents.

New Dresses for Little Girls

2338.—Easy to Make.—The front is closed over a stay, with lacing or buttons. The sleeve maye be in wrist or elbow length. The pattern is cut in 4 sizes: 2, 4, 6 and 8 years. Size 6 requires 3 yards of 36-inch material. Price, 10 cents.



2265. — A Pretty Dress. — Little dresses of this style are comfortable, practical and easy to make. This model may have the long sleeve finished with a band cuff, or with the turnback cuff. The short sleeve has a cuff shaped to flare, which makes a smart finish. The pattern is cut in 4 sizes: 2, 3, 4 and 5 years. Size 4 requires 2¾ yards of 36-inch material. Price, 10 cents.

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Grange

IMPORTANT SESSION OF NEW YORK STATE GRANGE

New York State Grange representing a membership of 112,874 representative farmers of the state has long been a leading factor in rural organizations, wielding a powerful influence in legislation, both at Albany and at Washington. Its recommendations are heeded by lawmakers more respectfully each year.

This year the proceedings of the order were more than usually interesting. Over 180 resolutions from all sections of the state came up for consideration, and were attended to with commendable thoroness.

The chief interest centered in the school question, about 50 of the resolutions having to do with that. O. A. Gallup, of Cortland, was the capable chairman of the committee to consider the question and held hearings for a day and a half. The result was that the resolution passed unanimously asking for the repeal of the present law.

The township law has been in operation a year and has given very general dissatisfaction thruout the state. The legislators say it was passed because they understood the grange recommended it. One year ago the grange gave careful consideration to the new bill and after some changes approved it. Later the bill was rewritten three times with very important changes, and the grange withdrew its approval. It was passed, however, after much political maneuvering, and has proved a great failure, and a great increase in expense. The people arose as one body and voiced indignant protest and the governor and legislature now can not promise too fervently that it shall be repealed, and that promptly. This will mean a reversion to the old system, which was also unsatisfactory. But better things are expected in the future.

The hiring of special teachers of physical training was also pronounced against, with the recommendation that regular teachers be qualified to give this needed work. Compulsory military training of all boys of the state from 16 to 18 years of age was endorsed. The master of the grange, S. J. Lowell, of Fredonia, was elected chairman of a committee to represent the farmers at a special hearing on the school question in Albany, February 27.

Other resolutions of importance that were passed were: One opposing the lengthening of rural free delivery routes, as such practice hampers service; one recommending the consolidation of all rural organizations, so as to present a solid front for the betterment of agricultural production; one asking the President to use his authority and close all breweries and saloons during the period of the war; one asking for gravel tracks for horse-drawn vehicles along all state highways, for the safety of horses; one calling on the Senate to refuse to confirm the governor's appointments to the State Council of Farms and Markets, until he keeps his pledge to the farmers to take the department out of politics and run it on a business basis, also asking for the resignation of Charles H. Betts as secretary of that council and the appointment of a man with experience in agricultural matters and in whom farmers have confidence; and, after much earnest discussion, a resolution asking that where a farmer operated less than 100 acres he and his be exempt from the draft, and that principal farm laborers on larger farms be exempt, as a measure very essential to satisfactory crop production on the farms.

Tho the weather was the worst in many years the attendance averaged over 1,200 daily thruout the session.

Grange Exchange

For sometime the need of a state grange purchasing and selling agency has been felt. One year ago, Prof. H. H. Wing, of Cornell University, was named as the head of a committee to draft plans for such a body.

At the annual session of the state grange recently held in Syracuse this organization was formally launched, with a capitalization of $100,000. Its scope is to be state-wide and its purposes are set forth in the articles of incorporation, as follows: "To buy, sell, mortgage and lease real estate, and to engage in and conduct a general mercantile and manufacturing business with especial reference to supplying the needs of the members of the Order of Patrons of Husbandry in New York State in the purchase and sale of all kinds of goods, merchandise and produce at wholesale or retail."

The first step in the organization of this body which is to be known as the New York Grange Exchange, was the cancelling of all contracts with the purchasing agency of the grange. The principal offices of the new exchange will be in Syracuse, but branch offices may be designated by the board of directors.

The directors for the first year are: S. J. Lowell, Fredonia, Master of the State Grange; W. N. Giles, Skeneatles; W. L. Bean, McGranville, Ira Sharp, Lowville; H. H. Wing, Ithaca; J. W. Scott, Copake; E. Knickerbocker, Bangall; E. C. Gillett, Penn Yan; B. C. Williams, Batavia.

New Officers of State Grange

At the annual session of New York State Grange in Syracuse, Feb. 4-8, officers were elected as follows:

On the first ballot those re-elected were S. J. Lowell, Fredonia, Master; Albert Manning, Otisville, overseer; W. N. Giles, secretary, Skeneatles; W. L. Bean, McGranville, treasurer; Fred C. Hecker, Webster, assistant stewart; H. S. Coe, S. Levonia, gate keeper; Mrs. C. H. Pratt, Alden, Ceres; Mrs. Guy Chamberlain, Schenevus, lady assistant stewart; Edwin Knickerbocker, Bangall, member of executive committee for three years.

The contests centered about the offices of lecturer, steward, flora and pomona. J. E. Alexander, of Pulaski, was elected lecturer. He has served in this capacity before, and is known as the tallest and handsomest granger in the state. He is 6 feet 6 inches tall and weighs 275 pounds. Mrs. H. B. Eysaman was re-elected Pomona and Mrs. W. D. Tallman, of Highland, was elected flora.

Over 500 new members took the work of the Sixth Degree on Thursday evening.—Feint.

Among The Granges

Cecil County, Md.—Cecil Grange No. 3 of Calvert, Md., met in regular session the last week in December and elected the following officers for the year 1918: Master, M. J. Ewing; Overseer, Norman Fell; Lecturer, Mrs. David McDowell.

On January 31, these new officers were installed with the proper ceremony and took charge of the duties of the various offices. Also, at that meeting which was attended by a large number on account of the fine sleighing, a very fine program was carried out after the regular business. Miss Wilson, of Calvert, read a very fine paper on the war, as also did Mr. Bennet Wilson, of the same town. A debate was staged, the subject of which was: Resolved, That the aeroplane is more destructive than the submarine. The affirmative speakers were Bennet Wilson and Norman Fell. The negative was upheld by John Reisler and M. J. Ewing. The evening was enjoyed by all. The grange work in Maryland is growing and harmony reigns.—M. J. E.

—

Harford County, Md. — Pomona Grange met at Highland, Md., Saturday, January 26, with over three hundred members present.

The morning session was devoted to hearing reports of the different committees. Special interest was manifested in the report of the Milk Committee of a meeting held in Baltimore the day before, over a thousand milk shippers attending, the object of the meeting being to agree on a fair price for milk with the Food Administration. A Help Committee was appointed to attend the different granges in the county, rendering help to the weaker granges. After a delightful lunch, served by the members of the Highland Grange, the afternoon session was thrown open to the public and an interesting program rendered, the main feature being a strong patriotic address by John A. McSparran, Master of Pennsylvania State Grange.—D. G. Harry.

—

Delaware County, Pa.—Concord Grange installed their newly elected officers at a recent meeting.

Three state grange officers were present: Thomas Palmer, who is Treasurer of the Keystone State Exchange; Mrs. Rogers, who is Ceres of State Grange, and Frank P. Willits, who is Treasurer of State Grange.

These are the officers as installed: Earl Cloud, Master; Emlen C. Faucett, Overseer; Francis H. Williamson, Lecturer; Clarence Faucett, Steward; Taylor Richard, Assistant Steward; Joseph H. Paschall, Chaplain; Lewis Williamson, Treasurer; Sarah P. Cornog, Secretary; Darlington Heyburn, Gatekeeper; Margaret Cornog, Ceres; Bertha Dewhurst, Flora; Dorothea Darlington, Lady Assistant Steward.

In February several speakers of prominence will take part in a food conservation meeting.

Mrs. Burr, one of the visitors, spoke on the duty of the grange member to do his best for the grange and not allow small cliques and groups to feel they can control things.

COUNTY GRANGE MEETS

Large Class of Young Men Take Fifth Degree

A largely attended session of the Centre County Pomona Grange was held Thursday of last week in Grange Arcadia, Centre Hall. The first session began at ten o'clock, when reports were heard from the various grange activities. Some of these were discussed at considerable length.

A class of about twenty young men, students in the Agricultural Department, Pennsylvania State College, and members of Penn State Grange, made application to receive the Fifth Degree, and after the formalities had been gone thru the degree was conferred by Master C. R. Neff, and the unwritten work was explained by John S. Dale, a district deputy.

The Grange Park committee, in whose hands the creamery plant was recently placed in care, reported that the plant had been leased to the Dewart Creamery Company, and that the building had been repaired and is now in use as a shipping station. The plant was leased with an option to buy, and consequently the officers asked for and were granted an order to sell same.

The annual and quarterly reports of the fire insurance company were read by the president, John S. Dale, and secretary, David K. Keller. The report shows the company in good standing and leading all competitors in the matter of percentage expended for the conduct of business. At the request of directors of the company, the question of increasing the fee of one dollar for writing a policy was discussed. A motion to increase this fee by one hundred percent was lost.

A second matter brought to the attention of the Order was one requesting that when writing policies in which grains of various kinds are insured, a bulk sum be written instead of itemizing each kind of grain. The request was granted.

The enlargement in scope of exhibits at the Grange Encampment and Fair was dwelt on by the Master, as was also the financial features. There is some indebtedness—in round numbers $1,000—due to the large expenditure in wiring the grounds for lighting by electricity. The matter of premiums was discussed by Prof. T. I. Mairs. The custom of paying a premium to all exhibitors—the custom now in vogue—was condoned, but the speaker argued that in addition to this ribbons should be awarded thru a committee for the most meritorious articles.

The noon hour was greatly enjoyed by all, and especially the young people. Three long tables, well ladened with choice provisions, afforded an opportunity to satisfy hunger.—S. W. Smith.

STOP WHINING

Never mind the labor scarcity. Buckle into the harness. Reduce your farm to a basis of what you can handle efficiently. Go ahead and raise what you can. Be sure to keep all that you will want for yourself, and then sell all you can. If no one else wants to farm, do not try to force them to it. Prices will eventually take care of themselves. All of this talk about holding boys on the farm is useless except in exceptional cases. The only thing that will hold some men on the farm is machinery that will do all of the work. Too many men want to wear kid gloves and high collars, have movies on every cross-roads, eight hours a day work, half holiday on Saturdays with a trip to the sea-shore or the lakes on Sunday. They will still want impossible things, no matter what prices we get for our products. With hours and wages equal, the city will still take our help. If you do not believe it, ask the help.

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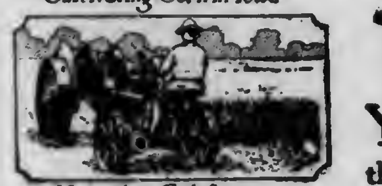

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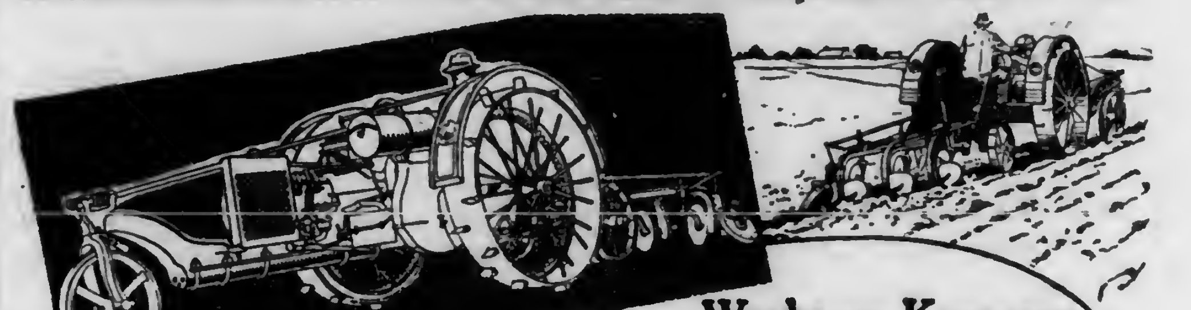

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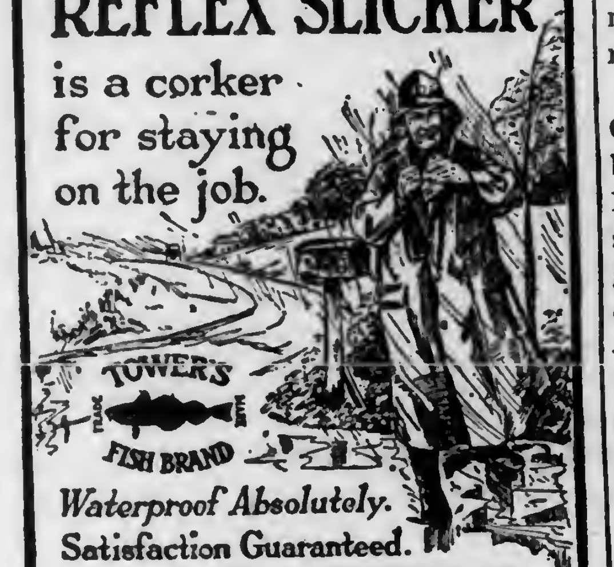

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The Switchman's Story

By FRANK H. SPEARMAN.

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"He's rather a bad lot, I guess," wrote Bucks to Callahan, "but I am satisfied of one thing—you can't run that yard with a Sunday-school superintendent. He won't make you any trouble unless he gets to drinking. If that happens, don't have any words with him." Bucks underscored three times. "Simply crawl into a cyclone cellar and wire me. Sending you eighteen loads of steel tonight, and six cars of ties. Blair reports section 10 ready for track layers and Mear's outfit moving into the Palisade Canyon. Push tho stuff to the front."

It was getting dark, and Callahan sat in that part of the Benkleton depot he called the office, pulling at a muddy root that went unaccountably hot in sudden flashes. He took the pipe from his mouth, leaving his foot on the table, and looked at the bowl resentfully, wondering again if there could be powder in that infernal tobacco of Rubedo's. The mouthpiece he eyed as a desperate man might ponder a final shift.

The pipe had originally come from God's Country, with a Beautiful Amber Mouthpiece, and a Beautiful Bowl; but it was a present from his sister and had been bought at a dry-goods store. Once when thinking—or, if you please, when not thinking—Callahan had lighted a match to the Beautiful Amber Mouthpiece instead of to the tobacco, and in the fire that ensued they had hard work to save the depot.

Callahan never wrote his sister about it; he thought only about buying pipes at dry-goods stores, and about being, when they exploded, a thousand miles from the man who sold them. There was plenty in that to think about. What he now brought his teeth reluctantly together on was part of the rubber tube of a dismantled atomizer; in happier post-Christmas days a toilet fixture. But Callahan had abandoned the use of bay rum after shaving. His razor had gone to the scrap and on Sunday mornings he merely ran a pair of scissors over the high joints—for Callahan was railroading—and on the front.

After losing the mouthpiece he would have been completely in the air but for little Chris Oxen. Chris was Callahan's section gang. His name was once Ochsner, but that wasn't in Benkleton. Callahan was hurried when he made up the pay roll and put it Oxen, as being better United States. I say United States because Callahan said United States, in preference to English.

Chris had been in America only three years; but he had been in Russia three hundred, and in that time had learned many ways of getting something out of nothing. When the red-haired despatcher after the explosion cast away with bitterness the remains of the pipe, Chris picked it up and by judicious action on the atomizer figured out a new mouthpiece no worse than the original, for while the second, like the first, was of rubber, it was not of the explosive variety.

Chris presented the remodelled root to Callahan as a surprise; Callahan, in a burst of gratitude, promoted him on the spot; he made little Chris foreman. It didn't bring any advance in pay—but there was the honor. To be foreman was an honor, and as little Chris was the only man on the yard force, he became, by promotion, foreman of himself.

So Callahan sat thinking of the ingenuity of Chris, reflecting on the sting of construction tobacco, and studying over Buck's letter.

The yard was his worry. Not that it was much of a yard; just a dozen runs off the lead to take the construction material for Callahan to distribute, fast as the grade was pushed westward. The trouble at the Benkleton yard came from without, not from within.

The road was being pushed into the cattle country, and it was all easy until they struck Benkleton. Benkleton was just a hard knot on the Yellow Grass trail; a squally, sandy cattle town. There were some bad men in Benkleton; they didn't bother often. But there were some men in Benkleton who thought they were bad, and these were a source of constant bedevilment to the railroad men.

Southwest of the yard, where the river breaks sheer into the bottoms, there hived and still hives a colony of railroad laborers, Russians. They have squatted there, burrowed into the face of the bench like sand swallows, and scraped caves out for themselves, and the name of the place is Little Russia.

This was in the troublous days, when the cowboys, homesick for evil, would ride around Little Russia with rope and gun, and scare the pioneers cross-eyed. The cattle fellows spent the entire winter months, all sand and sunshine, putting up schemes to worry Callahan and the Little Russians. The headquarters for this restless gang were at Pat Barlie's place, across from the post office; it was there that the cowboys loved to congregate. To Callahan, Pat Barlie's place was a wasps' nest; but to Chris, it was a den of wolves—and of a dreader sort than Russian wolves, for Barlie's pack never slept.

The east and west section men could run away from them on hand cars; it was the yardmen who caught it, and it grew so bad they couldn't keep a switchman. About ten o'clock at night, after Number Twenty-three had pulled in and they were distributing a trainload of bridge timber, a switchman's lantern would go up in signal, when pist! a bullet would knock the lamp clean out of his hand, and the nerve clean out of his head. Handling a light in the Benkleton yard was like smoking a celluloid pipe—you never could tell when it would go off.

Cowboys shot away the lamps faster than requisitions could be drawn for new ones. They shot the signals off the switches, and the lights from the tops of moving trains. Whenever a brakeman showed a flicker, two cowboys stood waiting to snuff it. If they missed the lamp, they winged the brakeman. It compelled Bucks after a while to run trains thru Benkleton without showing even a light. This, tho tough, could be managed, but to shunt flats in the yard at night with no light, or to get a switchman willing to play young Tell to Peg Leg Reynolds' William for any length of time, was impossible. At last Bucks, on whom the worry reflected at headquarters, swore he would fight them with fire, and he sent Shockley. Callahan still sat speculating on what he would be up against when Shockley arrived.

The impression Bucks' letter gave him—knowing Bucks to be frugal of words—was that Shockley would rise up with cartridges in his ears and bowie knives dangling from his watch chain. To live in fear of the cowboys was one thing; but to live in fear of the cowboys on the one hand and in terror of a yard master on the other, seemed, all things considered, confusing, particularly if the new ally got to drinking and his fire scattered. Just then train Fifty-nine whistled. Pat Barlie's corner began to sputter its salute. Callahan shifted around behind his bomb-proof, lit his powder horn, and looking down the line wondered whether Shockley might be on that train.

It was not until the next night that a tall thinnish chap, without visible reasons for alighting, got off Fifty-nine and walked tentatively down the platform. At the ticket office he asked for the assistant superintendent.

"Out there on the platform talking to the conductor."

The thin fellow emerged and headed for Callahan. Callahan noticed only his light, springy amble and his hatchet face.

"Mr. Callahan?"

"Yes."

"Bucks sent me up—to take the yard."

"What's your name?"

"Shockley."

"Step upstairs. I'll be up in a minute."

Shockley walked back into the depot but he left the copper-haired assistant superintendent uncertain as to whether it was really over; whether Shockley had actually arrived or not. As Callahan studied the claimant's inoffensive appearance, walking away, he rather thought it couldn't be over, or that Bucks was mistaken; but Bucks never made a mistake.

Next morning at seven, the new yard master took hold. Callahan had intimated that the night air in the yard, it being low land, was miasmatic, and that Shockley had maybe better try for a while to do his switching in the daytime. Just bebore the appointed hour in the morning, the assistant had looked out on his unlucky yard; he thought to himself that if that yard didn't drive a man to drink nothing ever would. Piled shanty high with a bewildering array of material, it was enough to take the heart out of a Denver switching crew.

While he stood at the window he saw their plug switch engine, that had been kicked out of every other yard on the system, wheeze out of the round-house, saw the new yard master flirt his hand at the engineer, and swing up on the footboard. But the swing—it made Callahan's heart warm to him. Not the lubberly jump of the hoboes that had worried the

life out of him all summer, even when the cattlemen didn't bother. It was the swing of the sailor into the shrouds, of the Cossack into the saddle, of the yacht into the wind. It was like falling down or falling up or falling on—the grace of a mastery of gravitation—that was Shockley's swing on the footboard of the yard engine as it shot snorting past him.

"He's all right," muttered Callahan. It was enough.

A man who flipped a tender like that was not likely to go very wrong even in that chaos of rails and ties and stringers and coal.

"Now," continued Callahan to himself, timidly hopeful, "if the cuss only doesn't get to drinking!" He watched apprehensively, dreading the first time he should see him entering Pat Barlie's place, but Shockley didn't appear to know Pat had a place. The cowboys, too, watched him, waiting for his lamp to gleam at night down in the yard, but their patience was strained for a long time. Shockley got all his work done by daylight.

To the surprise of Callahan, and probably on the principle of the watched pot, the whole winter went without a brush between Shockley and the cowboys. Even Peg Leg Reynolds let him alone. "He's the luckiest fellow on earth," remarked Callahan one day at McCloud in reply to a question from Bucks about Shockley. "There hasn't a shot been fired at him all winter."

"He wasn't always lucky," commented Bucks, signing a batch of letters.

"He came from Chicago," Bucks went on, after a silence. "He was switching there on the 'Q' at the time of the stock-yard riots. Shockley used to drink like a pirate. I never knew just the right of it. I understood it was in a brawl—anyway, he killed a man there; shot him, and had to get away in a hurry. I was train master. Shockley was a striker; but I'd always found him decent, and when his wife came to me about it I helped her out a little; she's dead since. His record isn't just right back there yet. There's something about the shooting hanging over him. I never set eyes on the fellow again until he struck me for a job at McCloud; then I sent him up to you. He claimed he'd quit drinking—guess he had. Long as he's behaving himself I believe in giving him a chance—h'm?"

It really wasn't any longer a case of giving him a chance; rather of whether they could get on without him. When the Colorado Pacific began racing us into Denver that summer, it began to crowd even Shockley to keep the yard clean; he saw he would have to have help.

"Chris, what do they give you for tinkering up the ties?" asked Shockley one day.

"Dollar an' a half."

(To be concluded.)

NAN OF MUSIC MOUNTAIN

By FRANK H. SPEARMAN

CHAPTER XXXIV

At Sleepy Cat

Nothing in nature, not even the storm itself, is so cruel as the beauty of the after calm. In the radiance of the sunshine next day de Spain, delirious and muttering, was taken to the hospital at Sleepy Cat. In an adjoining room lay Nan, moaning reproaches at those who were torturing her reluctantly back to life. Day and night the doctors worked over the three. The town, the division, the stagemen, and the mountain-men watched the outcome of the struggle. From as far as Medicine Bend railroad surgeons came to aid in the fight.

De Spain cost the most acute anxiety. The crux of the battle, after the three lives were held safe, centered on the effort to save de Spain's arm—the one he had chosen to lose, if he must lose one, when he strapped it to the whiffletree. The day the surgeons agreed that if his life were to be saved the arm must come off at the shoulder, a gloom fell on the community.

In a lifetime of years there can come to the greater part of us but a few days, a few hours, sometimes no more than a single moment, to show of what stuff we are really made. Such a crisis came that day to Nan. Already she had been wheeled more than once into de Spain's room, to sit where she could help to woo him back to life. The chief surgeon, in the morning, told Nan of the decision. In her hospital bed she rose bolt upright. "No!" she declared solemnly. "You shan't take his arm off!"

The surgeon met her rebellion tactfully. But he told Nan, at last, that de Spain must lost either his arm or his life. "No," she repeated without hesitation and without blanching, "you shan't take off his arm. He shan't lose his life."

The blood surged into her cheeks—better blood and redder than the doctors had been able to bring there—such blood as de Spain alone could call into them. Nan, with her nurse's help, dressed, joined de Spain, and talked long and earnestly. The doctors, too, laid the situation before him. When they asked him for his decision, he nodded toward Nan. "She will tell you, gentlemen, what we'll do."

And Nan did tell them what the two who had most at stake in the decision would do. Any man could have done as much as that. But Nan did more. She set herself out to save the arm and patient both, and, lest the doctors should change their tactics and move together on the arm surreptitiously, Nan stayed night and day with de Spain, until he was able to make such active use of either arm as to convince her that he, and not the surgeons, would soon need the most watching.

Afterward when Nan, in some doubt, asked the chaplain whether she was married or single, he obligingly offered to ratify and confirm the desert ceremony.

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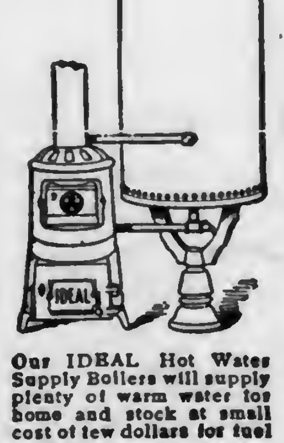

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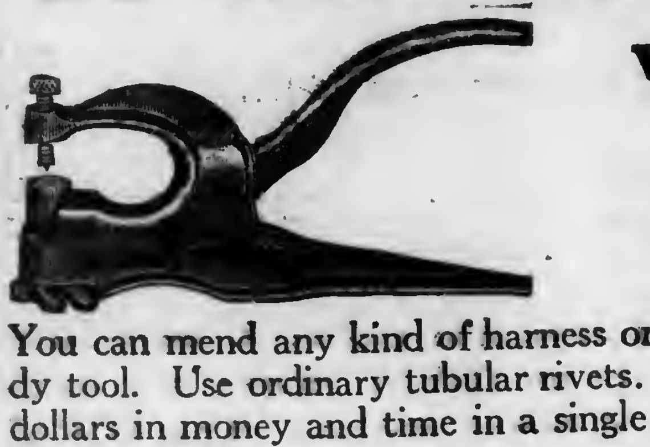

You can mend any kind of harness or belting with this handy tool. Use ordinary tubular rivets. It will save you many dollars in money and time in a single season. Class A Reward No. 601.

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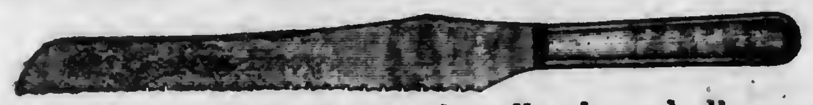

This new sanitary aluminum handle bread slicer will slice new bread as well as bread that is a few days old. It has a nine-inch blade made from a special quality of cutlery steel, oil tempered and hand ground. Guaranteed to give entire satisfaction. Class B Reward No. 629.

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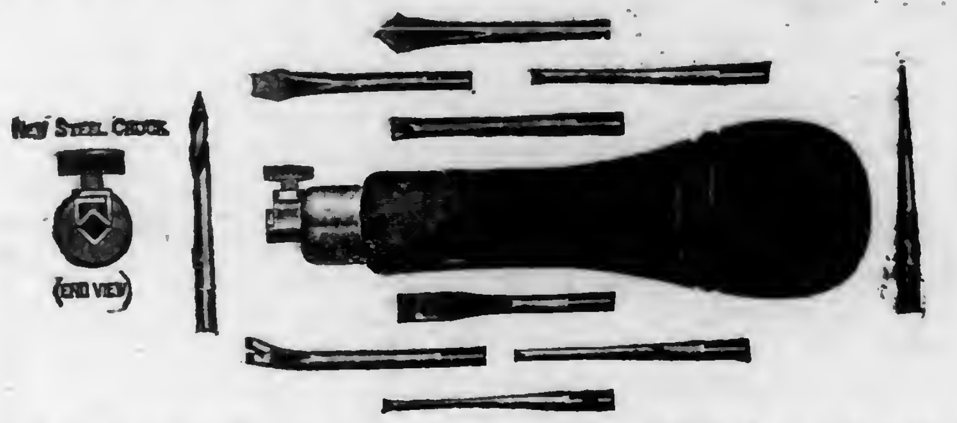

A handy hollow handle tool set with easily adjusted new style steel chuck. Ten forged, tempered tools, all contained in hardwood handle when not in use. Class A. Premium No. 100.

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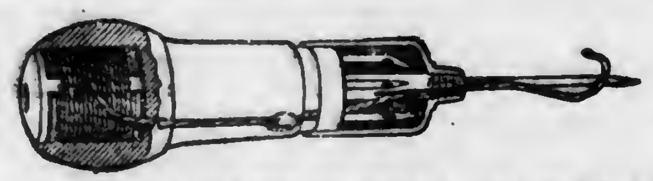

Many a job can be quickly and easily done with it that would otherwise mean loss of time, expense and frequently the waste of good materials. It makes a perfect lock stitch, is a combined stabbing and sewing awl, and with a very little practice you can mend harness, shoes, tarpaulins, belts, carpets, saddles, bags, or any other heavy material. Thread is contained on bobbin in the handle and may be obtained in any hardware or harness store. Has two needles, straight and curved. Premium No. 123.

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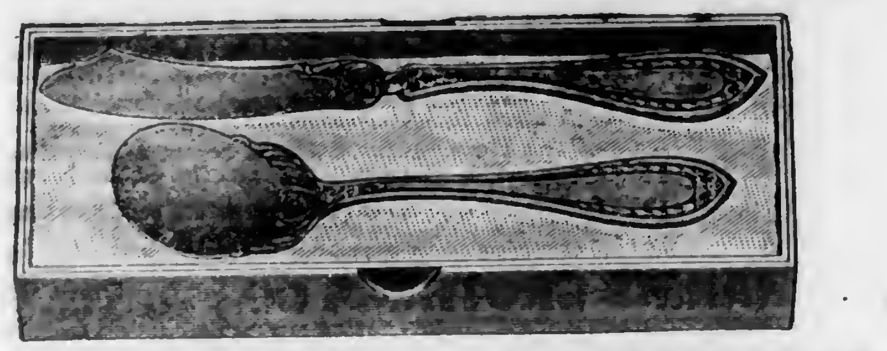


This nifty little set comes in a satin lined box, is made of nickle silver and guaranteed to give satisfaction. Class A Reward No. 900.

PENNSYLVANIA FARMER
261 South Third Street Philadelphia, Pa.

This affair was the occasion for an extraordinary round-up at Sleepy Cat. Two long-hostile elements—the stage and railroad men and the Calabasas-Morgan Gap contingent of mountain-men, for once at least, fraternized. Warrants were pigeonholed, suspicion suspended, side-arms neglected in their scabbards. The fighting men of both camps, in the presence of a ceremony that united de Spain and Nan Morgan, could not but feel a generous elation. Each party considered that it was contributing to the festivity in the bride and the groom the very best each could boast, and no false note disturbed the harmony of the notable day.

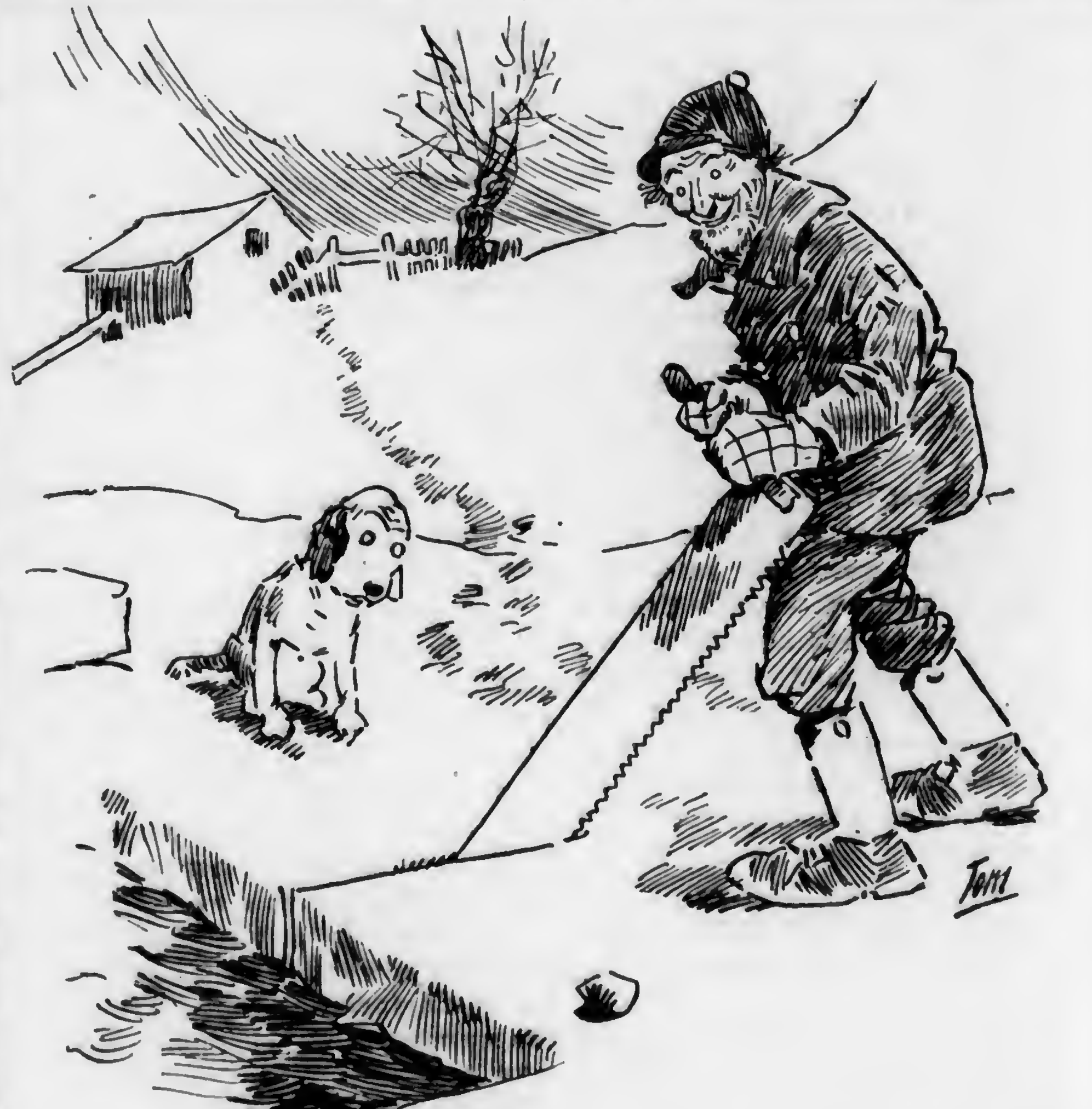
Gale Morgan, having given up the fight, had left the country. Satterlee Morgan danced until all the platforms in town gave way. John Lefever attended the groom, and Duke Morgan sternly, but without compunction, gave the bride. From Medicine Bend, Farrell Kennedy brought a notable company of de Spain's early associates for the event. It included Whispering Smith, whose visit to Sleepy Cat on this occasion was the first in years; George McCloud, who had come all the way from Omaha to join his early comrades in arms; Wickwire, who had lost none of his taciturn bluntness — and so many train-despatchers that the service on the division was crippled for the entire day.

A great company of self-appointed retainers gathered together from over all the country, rode behind the gayly decorated bridal-coach in procession from the church to Jeffries' house, where the feasts had been prepared. During the reception a modest man, dragged from an obscure corner among the guests, was made to take his place next Lefever on the receiving-line. It was Bob Scott, and he looked most uncomfortable until he found a chance to slip unobserved back to the side of the room where the distinguished Medicine Bend contingent, together with McAlpin, Pardaloe, Elpaso, and Bull Page, slightly unsteady, but extremely serious for the grave occasion, appeared vastly uncomfortable together.

The railroad has not yet been built across the Sinks to Thief River. But only those who lived in Sleepy Cat in its really wild stage days are entitled to call themselves early settlers, or to tell stories more or less authentic about what then happened. The greater number of the Old Guard of that day, as cankering peace gradually reasserted itself along the Sinks, turned from the stage coach to the railroad coach; some of them may yet be met on the trains in the mountain country. Wherever you happen to find such a one, he will tell you of the days when Superintendent de Spain of the Western Division wore a gun in the mountains and used it, when necessary, on his wife's relations.

Whether it was this stern sense of discipline or not that endeared him to the men, these old-timers are, to a man, very loyal to the young couple who united in their marriage the two hostile mountain elements. One in especial, a white-haired old man described by the fanciful as a retired outlaw, living yet on Nan's ranch in the Gap, always spends his time in town at the de Spain home, where he takes great interest in an active little boy, Morgan de Spain, who waits for his Uncle Duke's coming, and digs into his pockets for rattles captured along the trail from recent huge rattlesnakes. When his uncle happens to kill a big one—one with twelve or thirteen rings and a button—Morgan uses it to scare his younger sister, Nan. And Duke, secretly rejoicing at his bravado, but scolding sharply, helps him adjust the old ammunition-belt dragged from the attic, and cuts fresh gashes in it to make it fit the childish waist. His mother doesn't like to see her son in warlike equipment, ambusing little Nan in the way Bob Scott says the Indians used to do. She threatens periodically to burn the belt up and throw the old rifles out of the house. But when she sees her uncle and her husband watching the boy and laughing at the parade together, she relents. It is only children, after all, that keep the world young.

THE END



Uncle Amos says: "A full ice house is like a full wood shed—an insurance against future discomfort. The man who is prepared for all emergencies is the man that 'cuts some ice' these days".

HOW THEY FOUND FARM LABOR

(Concluded from page 3.)

where labor needs were especially urgent, working there until the crisis had passed or a steady supply of help had been secured, and then shooting to another section where emergency help was needed.

Sunday school classes, in parties of 25 or 30 people, went to the peach orchards in the Lockport (N. Y.) section and helped pick and pack the fruit. Some women who picked peaches gave their earnings to the Red Cross. All thru the orchard counties of New York State stores closed in a number of towns and the employees went to work to save the fruit. One man worth $100,000 was picking peaches for $2 a day near Lockport and some mill workers laid off, for a couple of weeks, from $8 and $10 a day mill jobs in order to work in the orchards for $1.50 or $2—they were actuated by a desire for a change, for a bit of the country, for a little work in the fresh air—and at the same time a desire to help in the Nation's farm-labor problem.

Cumberland County, N. J., organized a "junior industrial army" and the county agent ascertained from each farmer his probable labor needs for the season. The agent reported that by organizing and making available all the possible local supply of labor he had, at no time, more than 200 calls for farm workers in excess of the local supply then on hand. This county also conducted a training school to teach the grading, sizing and packing of peaches.

CHESTER COUNTY MASS MEETING

Farmers of Chester County, Pa., met recently to survey and summarize their problems and difficulties and there to adopt general recommendations and resolutions for public information and guidance but, most important of all, to adopt and put into working operation specific measures which apply to the county as a local unit, to relieve these conditions as far as possible.

The meeting was presided over by the County Agricultural Agent, who is also Food Chairman for Chester County under the State Committee of Public Safety. After brief preliminary remarks in which he set forth that, from now on, the success or failure of the war rested upon America, and that fundamentally this meant that American food must win the war, the first speaker for the afternoon, Mr. Morris T. Phillips, of Pomeroy, who only recently accepted a call from the State Food Administration to act as the farmers' direct representative on the Committee of Food Production, was introduced. He appealed to the farmers to help him advance their cause by coming to him with all the troubles they had relative to food production and assured them that if there was anything humanly possible to be done for them by the governmental authorities he'd see to it that it was definitely and urgently brought to their attention.

The next speaker then called upon was Mr. Isaac A. Passmore, a farmer from East Bradford township who was appointed Farm Labor Director for Chester County. Mr. Passmore gave account of the many calls for help he has received from various farmers on or about April 1, and stated that he had applications from several men, but that they desired employment at once. He expressed the hope that farmers would put these men to work at once and thus secure their services, for if unable to get work, they would in all probability go to work at some industrial plant. He suggested that farmers appeal to the U. S. Government asking that advertisements be published on an extensive scale urging all young men and older persons, too, who are acquainted with farm work to return home and aid there in work that cannot be exceeded in importance.

Furthermore, he suggested that something ought to be done to prevent men leaving one farm and going to a neighbor just to get a slight advance in wages. This unsettles conditions and often is calamitous to the farmer's business for the entire year, and should be stopped, by farmers paying a general wage.

Mr. J. H. Halderman, a dairyman, from Cedarville, near Pottstown, said that the dairy farmer faces the worst crisis as to help. He has forty cows and is running his dairy with the aid of one man, but he realizes that this cannot continue when the spring work begins. He felt that the skilled labor that had left for industrial plants should be brought back and conditions be so ordered that the farmers can meet the wages now received by these men.

Miscellaneous discussions followed upon the matter of Boy's Camps, Women's Camps, Farm Tractors and other suggested agencies for meeting the emergency of farm labor. Altho no definite endorsements were made the sentiment was that these efforts were worthy of co-operation but could not furnish a solution.

The second principal speaker for the afternoon was Mr. Robert J. Wheeler, Food Chairman of Lehigh County. He explained in detail the work that had been done in Lehigh County in the way of making a county-wide survery to locate all persons who are now living in cities and towns but who have been born and reared on farms and possess valuable farm experience.

The following resolutions were adopted:

Resolved, That the farmers of Chester County are confronted with an alarming shortage of labor which, unless relieved, will prevent the cultivation this year of the usual acreage; that unless assurance is given at once of more help there will be a smaller area planted and consequently there will be less food; that we would impress this urgent need upon our State and National Governments and call upon them to use every possible means to relieve this situation.

Resolved, further, that in this connection we commit to the President and those in authority under him the recommendations of the Board of Farm Organizations, now ready for the President's consideration.

Resolved, That it is the sense of this convention that the needs of the farmers for more help should be advertised widely.

Resolved, That to secure and retain labor for the farm it will be necessary to pay a good living wage, that with perquisites will then compare favorably with the higher wages paid in the cities.

Resolved, That the time has come when the farmers must consider better housing facilities for their help.

Resolved, That we commend to the farmers of Chester County the work of Farm Labor Director Isaac A. Passmore and urge their prompt attention to the questionnaire about to be put forth.

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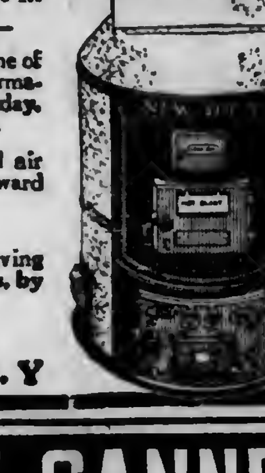

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PHILADELPHIA, PA.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 25, 1918.

The potato market continues in exactly the same condition as was reported in these columns last week. The supplies are ample for all requirements and the movement contin slow and draggy at practically the same range of values. Pennsylvanias are selling at $1.90 to $2.25 per cwt., and New York State stock $1.80 to $2.10. The nearby Jersey stock is being hauled in very freely by the farmers and these are selling slowly at 60 to 75 cents per ⅝-bushel basket. In addition to these supplies quite a few cars from the Eastern Shore of Virginia have been on the market and these are selling from $2.50 to $2.75 for No. 1 stock and $1.25 to $1.50 for No. 2.

Sweet potatoes show a further decline than that reported in these columns last week. Supplies have been liberal and Jersey sweets are now selling at $1 to $1.25 per ⅝-bushel basket. Southern stock in bushel hampers is drawing from $1.50 to $1.60 for primes, with seconds and medium at 75 cents to $1.

Vegetables

With the possible exception of Marrows, which are about 25 cents a cwt. lower, dried beans are ruling practically unchanged. Marrows are selling at $15.25 to $15.50 per cwt; pea and medium at $13 to $13.50, and red kidneys, $13.50 to $14 with supplies comparatively light. Green beans are gradually increasing in supply and prices will gradually decline from this time on. While a few strictly fancy have sold as high as $6 per hamper, the bulk of the sales on choice stock are being made at $5 to $5.50, with fairly good at $4 to $4.50. Wax beans are selling all the way from $4 to $5.50 per hamper. New beets show an improvement of about 50 cents a crate. Prices are now ranging from $2.50 to $2.75. Old beets from Pennsylvania and New Jersey points remain unchanged under light supplies. The market is ruling firm at $3 to $3.50 per barrel. Brussel sprouts are much lower than last week, due to a great extent to the poor quality of the supply. Prices have ranged all the way from 15 to 22 cents a quart, but few are good enough to reach the outside prices.

The supplies of old cabbage are fully equal to the demand and the market is easier. Best are now selling at $60 to $63 per ton, with undesirable stock selling at $50 to $55. New cabbage is much lower than last week, partly due to the heavier supplies, but mostly due to the poor quality. Best is now selling at $1.25 to $1.50 per hamper, while poor, leafy and yellow sold as low as 65 cents a hamper. Following the decline of 50 cents a barrel as reported in these columns last week, carrots show another decline of about 50 cents and sales are now being made at $1.50 to $2 per barrel with the movement slow and supplies liberal. Cauliflower is quite plentiful and the market weak; best selling at $1.25 to $1.35 per crate, with poor and yellow at 65 to 85 cents. Celery is dull, weak and lower, on stock from all sections. Pennsylvania stock is selling generally from 10 to 12 cents a bunch; Florida, 50 cents to $2 a crate; California, $2.50 to $3.50 a crate; New York state, $1 to $3 per crate. Eggplants are a very scarce commodity and ruling extremely high, bringing from $7 to $8 per crate. Horse radish is firm and unchanged from $7 to $8.50 per barrel.

Seldom has the lettuce shown such a wide range as it is doing at the present time. While strictly fancy lettuce is scarce and bringing high prices, poor lettuce is plentiful and bringing ridiculously low prices. At this writing best lettuce brought $2.75 a hamper, ordinary $1 to $2, and extremely poor 25 to 50 cents; California Iceberg lettuce is selling at $2.25 to $2.50 per box. There is no change to note in Pennsylvania hot house mushrooms which continue to sell at 40 to 55 cents a pound. Altho prices on onions show practically no change from those reported in these columns last week, the demand appears to be more active, and better movement is expected for the rest of the season. Sales are now being made at $1.75 to $2 per cwt., with No. 2's at $1 to $1.15. White onions are selling at $1.25 to $1.75 per Cummer crate. Parsnips are ruling steady at $2.75 to $3.50 per barrel. Parsley is extremely scarce and bringing unusually high prices, ranging from $15 to $18 a barrel, with some Californias selling at $20 to $25 a drum.

There are only a limited number of peas on the market and these are drawing the fine prices of $5 to $6 per hamper. Peppers are in light supply and firm at $4 to $6 a crate. Hot house radishes are in light supply and steady at $2 to $4 per 100. Spinach continues very scarce and two cars from Texas which arrived early in the week sold at $2 to $3 per bushel. New Orleans shallots are selling at $5 to $6 per barrel; escarol and endive at $6 to $6.50, and parsley at $15 to $18 per barrel. Rutabagas continue in light supply and rule firm and active at $2.25 to $2.50 per cwt. for medium sizes, with large ones not wanted and selling at lower prices. Tomatoes are very scarce and the market rules firm and active when stock shows good quality. Florida stock is selling from $2 to $5 per crate, while hot house tomatoes are bringing the extremely high prices of 40 to 45 cents a pound. White turnips are selling $3 to $4 per barrel. Good watercress is active and higher at 2 to 3 cents a bunch.

Fruits

The offerings of apples are liberal and the great majority of the supplies in barrels are only poor to ordinary in quality. On this class of fruit the market is weak and fully 25 cents a barrel lower than last week. Strictly fancy apples, however, are scarce and prices on this class of fruit are ruling firm at full former values and in some instances a little higher. Prices range about as follows: Baldwins, $3.50 to $6; Ben Davis, $3.50 to $4.75; Black Twig, $3.50 to $5.50; Ganos, $3 to $4.50; Greenings, $4 to $7; Kings, $4 to $6; York Imperials, $3.50 to $5.25; Winesaps, $3.50 to $6; Rome Beauty, $4 to $6; Russett, $4 to $5.25; Jonathans, $5.50 to $6; Grimes Golden, $5.50. Mixed and common apples sold from $2 to $4.

Receipts of box apples have been quite liberal and the quality is showing a wide range. Strictly fancy fruit is firm and higher with poor and ordinary unchanged. Winesaps have sold from $1.50 to $2.50; Spitz, $1.75 to $2.75; Staymans, $1.50 to $2.50; Pearmains, $1.50 to $2.60; Delicious, $2 to $3.75; Black Twig, $1.50 to $2.10; Black Bens, $1.50 to $2.05; Newtown Pippins, $1.50 to $2.25; Ben Davis, $1.50 to $1.85; Rome Beauty, $1.50 to $2.75; Jonathans, $1.50 to $2; Ganos, $1.50 to $1.75. Keiffer pears sold from $2 to $3 per barrel. Strawberries are gradually increasing in supplies and the market gradually declining. At this writing berries are selling all the way from $20 to 35 cents a quart.

Poultry

As we noted in these columns last week, rule No. 14 of the Federal Food Administration has practically stopped all trading in fowls and pullets. Quotation on other live poultry is as follows: Soft meated roasters, 28 to 32 cents; staggy young roosters, 27 to 28 cents; old roosters, 24 to 26 cents; ducks, 28 to 34 cents; geese, 28 to 32 cents; guineas, 75 cents to $1 per pair. Pigeons, per 25 to 35 cents.

Eggs

At last the long expected decline in the egg market has arrived, but it was much greater than was expected. The break came on Monday of this week and was 18½ cents a dozen, prices dropping from 63 to 64 cents a dozen, down to 44½ to 45½ cents. The probable cause of this big break was the fact that last Friday being Washington's Birthday and a legal holiday and Saturday a half holiday, on which very little business was transacted, and the weather being warm and favorable, supplies had accumulated and advices from all shipping sections indicated heavy supplies rolling. Altho receivers are expecting prices to ease off a little more, the egg situation is still more or less a weather proposition and it is hard to say at this time just what to expect of the egg market until the weather becomes more settled.

YORK PRODUCE MARKET

York, Pa., Feb. 25, 1918.

The markets early in the week were slimly attended. The weather was extremely unpleasant and few farmers turned out.

Eggs.—48@52c per dozen.

Butter.—Country, 48@50c lb; separator, 50@54c lb; milk, 10c quart.

Poultry.—Hens, no sale. Roosters, 22@26c lb; dressed, 65c@$1.75 each.

Vegetables.—Potatoes, 10@16c ½ pk; 85c@$1 per bushel; lettuce, 5@15c hd; onions, 10@12c bx; 25c ½ pk; lima beans, 35c qt; soup beans, 12@18c qt; celery, 5@10c stalk; turnips, 20@25c ½ pk; corn meal, 10@12c qt.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c; backbone, 25@30c; ribs, 32c; tenderloin, 40@48c; steak, 34@38c; pudding, 24@28c; cured hams, 40@45c; lard, 30@34c.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 90c; rye, $1.75; bran, $2.50 cwt; middlings, $2.60@2.85.

Wholesale Grain Market.—Wheat, $2.08@2.12; corn, $1.65; oats, 72c; rye, $1.60; bran, $45@48 per ton; middlings, $50@57 per ton.

LANCASTER PRODUCE

Lancaster, Pa., Feb. 25, 1918.

For the first time in many months, eggs were sold today for less than fifty cents a dozen. The supply was the largest since last summer, and there were hundreds of dozens unsold when market closed. There was a fair supply of butter which brought from 55 to 58 cents a pound. Potatoes were still held at $1.50 a bushel but few sales were reported.

Butter and Eggs.—Creamery butter, 55@58c per lb; country butter, 55c; fresh eggs, 48@50c per dozen; storage eggs, 42@45c.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Fruits.—Lima beans, 18c pint; celery, 5@10c bunch; lettuce, 5@12c head; cabbage, 5@10c head; sweet potatoes, 25c ½ pk; potatoes, $1.50 per bushel; do., 15@20c ½ pk; turnips, 18@20c per ½ pk; apples, 20@25c ½ pk.

Miscellaneous.—Mince meat, 16c lb; cornmeal, 10c qt; ponhaus, 10@12c lb; lard, 32c lb; applebutter, 15c pt; hominy, 6c qt.

Grain Market.—Milling wheat, $2 per bu; new ear corn, $1.65; rye, $1.65; oats, 65c; No. 1 timothy hay, $27 ton; clover hay, $22; wheat straw, $16; oat straw, $10.

NEW YORK PRODUCE

New York City, Feb. 25, 1918.

Butter market develops further weakness. Cheese more irregular and unsettled. Eggs weak and lower on all grades. Poultry market quiet. Apple offerings are liberal and trade is active. Potatoes and onions lower.

Butter. — Creamery, extras (92 score), per pound, 50@50½c; higher score, 51@51½c; thirds to firsts, 45@50c; state dairy, 43@50c; ladles, 36@39c.

Cheese.—Colored specials, 26¼@26½c. Daisies, 26¾@27½c.

Eggs.—Fresh gathered extras, 55c; extra firsts, 53½@54c; nearby white, fine to fancy, 56@57c; ordinary to good, 52@54c; browns, 55@56c.

Vegetables and Greens. — Beets, per 100 bunches, $3@5. Onions, per 100-lb. bag, $1@2.50. Potatoes, Jersey, $1.66@2 per 100 lbs; state and western, $1.80@2.22 100 lbs. Carrots, $1.50@3 per barrel.

Apples.—McIntosh, $4@6.50; York Imperial, $3.50@5.25; Twenty Ounce, $4@5.25; King, $4@5.50; Baldwin, $3.50@5.25.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 25, 1918.

Beef Cattle.—The market for steers and bulls was quiet and there were moderate but ample offerings at quoted rates. Calves sold slowly at unchanged prices.

Steers, good to choice, $12@13.15; extras higher; common to fair, $10.50@12; bulls, $8@10; cows, choice, fat, per lb., 9½c; fair to good per lb., 8@9c; medium, 7@8c; bologna cattle, 5½@7c; calves, extra choice, $16.50@17; fair to good, $15@16; common, $13@14; Tennessee and southern, $8@15.

Sheep and Lambs.—There was little trading, but values were steadily maintained under moderate offerings.

Sheep.—Wethers, extra, $13.50@14; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $12@13. Lambs—Choice, $17.75@18; do., medium, $16.50@17; inferior, $14.50@15.50.

Hogs.—Demand was good, and with stronger reports from other markets prices here were slightly advanced. There was still some complaint of stock being delayed by the railroads. Quotations for best western, $19@19.50.

City Dressed Stock.—Steers, heifers and cows were quiet with ample offerings at former rates. There was a rather better inquiry for hogs, prices of which ruled a shade firmer under light offerings.

Steers, 16@21c; heifers, 15@19c; cows, 12@18c; calves, 23@24½c; southern and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 26@28c; extra, 30c; hogs, 25c.

LANCASTER LIVE STOCK

Lancaster, Pa., Feb. 25, 1918.

Cattle.—Receipts, 271, against 1,850 last week; market slow; prices steady; good to choice steers, $11.10@12. medium, $9.25@10.25; good to choice heifers, $10@11.60; medium to good, $9@9.0; common to medium, $8.10@8.60; good to choice cows, $8.60@9.40; medium to good, $7.60@8.40; common to medium, $6.40@7.10; bologna and fair flesh cows, $5.60@6.25; good to choice bulls, $10.60@11.60; medium to good, $9.80@10.30; common to medium, $8.60@9.15; bologna bulls, $8.35@8.90; good to choice stock bulls, $9.30@9.85; medium to good, $8.75@9.25; common to medium, $8.30@9.

Hogs.—Receipts, 183; market slow, prices steady; best grades, $17.50@18.25; roughs, $16.25@17.25.

NEW YORK LIVE STOCK

New York City, Feb. 25, 1918.

Beeves.—Receipts, 2,500; steady. Steers, $11.50@13.25; bulls, $6.50@12.10; cows, $5@9.50.

Calves. — Receipts, 1,460; firm. Veals, $15.50@19; culls, $12@15; yearlings, $6.50@7.

Sheep and Lambs.—Receipts, 5,680; barely steady; sheep, $8@12; culls, $6@7; lambs, $15@17; culls, $12@14.

Hogs.—Receipts, 7,300; firm. Light to heavy, $17.90@18; roughs, $16.50.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Feb. 25, 1918.

Baled Hay and Straw.—Receipts, 36 tons of hay. Hay was scarce and nominally firm, with demand fairly active. Straw was well cleaned up at full figures.

Timothy hay, according to location. No. 1 large bales, nominal, $31@32; No. 1 small bales, nominal, $31@32; No. 2, $29@30; No. 3, $26@27; sample, $21@23; no grade, $17@19. Clover-mixed hay, light mixed, $29@30; No. 1 do., $27.50@28.50; No. 2 do., $24.50@25.50.

Straw.—No. 1 straight rye, $19@19.50; No. 2 do., $18@18.50; No. 1 tangled rye, $16.50@17; No. 2 do., $15.50@16; No. 1 wheat straw, $15.50@16; No. 2 do., $14.50@15; No. 1 oat straw, $15.50@16; No. 2 do., $14.50@15.

Loose Hay and Straw.—Average price prime timothy, $1.50@1.60 per 100 pounds; mixed $1.40@1.50 per 100 pounds; straw, 85@95c per 100 pounds.

Corn.—No. 2 yellow, $1.94@1.96.

Oats.—No. 2 white, $1.05½@1.06.

NEW YORK HAY AND GRAIN

New York City, Feb. 25, 1918.

Feed.—There was nothing new to report in the feed situation. New business continues at a standstill, with no offerings even coming on the market in the way of resale lots. This latter trade is in a waiting position. New government regulations allowing but a certain profit on all sales have forced a limited market for all kinds of handling and rapidly advancing prices have been stopped. Mills are working on old orders and are trying to make deliveries, but not much success is being met with the freight congestion.

All spot prices have been withdrawn.

Hay and Straw.—There has been very little change in the market this week. Thirty-third street receipts are light, outside points are fairly supplied and most of the trade is now trucking hay from these track delivery stations, where values are not as high as prevailing at 33d street.

Hay.—No. 1 large or small bales, $37@39; No. 2, $36@40; light clover, mixed, $34@37. Rye straw, $21@24 per ton.

Corn.—No. 2, yellow, $2.16½; No. 3, $1.96½.

Oats.—No. 2, white, $1.04@1.06.

Rye.—$2.36.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., Feb. 25, 1918.

Hay.—Hay market here continues to advance. This is true of all grades on all roads. There is no difficulty in disposing of hay at top market value and purchasers are willing to pay the price to get it.

No. 1 timothy, $32.50@33; No. 2 timothy, $30.50@31; No. 3 timothy, $28@28.50; No. 1 light mixed, $31@31.50; No. 1 clover mixed, $31.50@32.50; No. 2 clover mixed, $28.50@30.50; No. 1 clover, $31.50@32.50; No. 2 clover, $28.50@30.50.

Straw.—Absolutely no straw coming to this market.

No. 1 oat, $16.75@17; No. 2 oat, $16.50@16.75; No. 1 wheat, $16.50@17; No. 2 wheat, $16@16.50; No. 1 rye, $17@17.50; No. 2 rye, $16.50@17.

Ear Corn.—Good demand with receipts very light; market uncertain but advancing. No quotations.

Oats.—Arrival only fair; demand good; market looking higher.

No. 2 white, $1.00½@1.01; Standard, $1@1.00½; No. 3 white, 98½@99½c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Feb. 25, 1918.

Butter.—The market maintained a steady tone because of moderate receipts, but buyers were operating only for actual wants.

Western, fresh, solid-packed creamery, extra, 51c; higher-scoring goods, 52@53c; extra firsts, 50c; firsts, 48@49c; seconds, 47c; sweet creamery, extra, 52c; under grades, 49@50c; nearby prints, fancy, 55c; do., average extra, 52@54c; firsts, 49@50c; seconds, 47@48c; special brands jobbing at 56@58c.

Receipts.—As compiled by the Bureau of Markets, 2,029 tubs butter and 2,702 cases eggs.

NEW YORK MILK MARKET

New York City, Feb. 25, 1918.

Supply and demand are close with the balance slightly inclined toward the former. The surplus would probably be greater were trains arriving on time and cans making the round trip regularly and without interruption. The Federal Milk Commission resumed meetings late last week peparatory to naming rates for March. Two things of interest came out in the course of the public hearing on Saturday. One was the tremendous supply of condensed milk and cheese in storage, owing to the lack of bottoms available for transportation of supplies to Europe. The other was the difficulty which confronted the Commission in the fulfilment of the promise made to the dairymen at the time the Commission was appointed to the effect that their losses in December, due to their acceptance of a rate lower than that received in November, would be recouped later. A representative of the distributors made the point that they also should be reimbursed for the loss of upwards of a half a cent due to their patriotic action in keeping retail prices at the October level thru November when they were paying a higher price to the producers. Members of the Commission suggested that the producers and distributors get together and find some way of working out a solution of the problem. It was recognized that the longer the question remained unsettled, the greater would be the difficulty of answering it.

Members of the Commission said that they did not see how they could work complete justice to all in view of the fact that it had no mandate regarding condensed milk, cheese and other manufactured dairy products, but added that it would have to take up the question if it remained unanswered. The conclusion was reached by practically everyone that this question would have been treated differently in connection with the appointment of the Commission if more had been known in advance of the obstacles to be overcome.

The Federal Milk Commission, following an executive session Sunday, announced that producers of Grade B in the first district should receive for March $3.10, for 3 percent milk, $3.34, or approximately 7.1 cents a quart, for 3.6 percent and $3.50 for 4 percent. It also announced the provision of a recoup of 24 cents to be divided equally between the producers and distributors to cover the losses of December and November respectively, the total price to the producers being $3.22 for 3 percent, while the retail price should remain the same, except that pints in stores should be 7½ cents. There is to be a further recoup of 12 cents to the producers and 11½ cents to the distributors added to the base price in April, which is to be fixed later.

Receipts of milk and cream in 40-quart cans for week ending Feb. 23, were as follows:

Railroad	Milk	Cream
Erie	36,905	2,118
Susquehanna	6,495	69
West Shore	9,560	850
Lackawanna	57,010	1,190
N. Y. Central (long haul)	104,192	1,461
Ontario	35,852	2,180
Lehigh Valley	43,721	551
Pennsylvania	10,110	170
New Haven	6,490	
Other sources	5,810	160
Totals	316,145	8,749
Same week last year	347,346	9,623

TOBACCO MARKET

It is estimated that one-half of the 1917 crop has been stripped—the process having been unduly delayed by past week of cold weather and the prevalence of sappy stems. Now, that tobacco is in good condition little time will be lost in preparing and delivering the remainder before the rush of spring work which promises to be unusually strenuous this year. In the existing rush growers should exercise due care to sort and tie [illegible] a right to expect it and the price is generally such as to justify proper classification. Instances were reported in which growers were compelled to take their tobacco back to stripping rooms to be resorted. It would seem, however, that in such instances the decision should not be left to the contracting parties but to those less interested unless the error should be unusually apparent. There is yet a small unsold residue of the crop, there being widely scattered crops to be found in all localities. The aggregate, however would be but a small percentage of the total crop. Manufacturers and retailers complain of a disrupted and generally unsatisfactory situation characterized not by a lack of business but by general upheavals in prices and other abnormal conditions. There have been so many other demands for labor that many of their best men are gone and it has been necessary to substitute female labor in factory and store, the same, of course being inexperienced and for cigar and tobacco selling comparatively undesirable. The average man prefers to get his "smokes" from a man with whom he can talk weather, etc., while he "lights up".—H. E. Tweed, Feb. 25, 1918.

How I Make Big Money Out of "Ornery" Horses

By J. A. BUTLER

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for $50 and just ten days after sold her for $175.00. A clear profit of $125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arrant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid $65.00 for him. After handling him only a few hours according to Beery's system I sold him for $135.00.

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for $35.00, and now have her so gentle, my little boy handles her. Wouldn't take $200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth $225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for $17.50. Paid me $40 to train it, He just sold it to a show company for $150.00.

How I Work

The big source of my income is in buying up "ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit—for which job I received $50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc. etc., Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But, when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept. 0000, Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.

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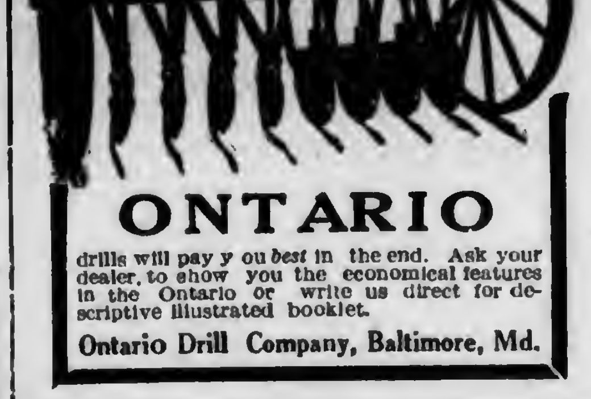

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Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

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Tankage builds big frames to carry fattening. Experiment station reports show that tankage is the cheapest and the best feed for hogs and growing pigs.

Martin's Abattoir Tankage

is carefully sterilized, especially prepared and ready to feed. It produces money makers for you. Buy direct from manufacturer and save money. Prices on request.

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is what you should buy. Made from the best of meat scraps, carefully sterilized. We guarantee every pound of it. Money back at once if not satisfied. Write for prices and feeding directions.

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A horse with heaves can't do its full share of work. Cure the heaves and you have a horse worth its full value in work or in money. Send today for FLEMING'S TONIC HEAVE POWDERS ($1.00 per package). Satisfactory results or money back. Fleming's Vest-Pocket Veterinary Adviser. Helps you diagnose and treat heaves and other ailments. Write for the Adviser. It is FREE.

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attached to your plow you can disc and harrow your land at the same time and with the same work and power that you use for plowing. You really do three operations in one. Time saved in planting season is money in the bank. Write today for full description.

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FARMERS' WEEK AT CORNELL

Farmers' Week at the New York State College of Agriculture, February 11-16, was attended by the usual crowds of farm folks, gathered from all parts of the state. The program was prepared with definite reference to the present agricultural situation and the emergency demands made upon the farmers, and every phase of rural activity was fully covered. More than 60 prominent cooperating lecturers were on the program, including Jane Addams, Professor O. S. Morgan, of Columbia University; John Mitchell, chairman, New York State Council of Farms and Markets, and Dr. Charles E. Thorne, director Ohio Experiment Station.

Soil Management

Speaking before a large audience on "Soil Management for 1918 in the Light of the Present Emergency," Dr. Thorne said the man who handles successfully our Eastern farms has to have a great deal more knowledge and skill than the man who handles a pick and shovel. We have got to have the young farmers on the farm if we are to produce the food. We owe it to the world to make this point so clear to the authorities of the country that they will see that it is necessary to leave the experienced farm hands and boys on the farms. If we are to send our sons to France, we must see that the production of food is not left to the whims of men who will throw down their tools if they do not get what they want.

In regard to soils, Dr. Thorne said it is possible for the farmers to more than double the crops of New York state by methods which are practicable and yield a profit. He pointed out the need of lime and the intelligent use of commercial fertilizers. In view of the labor situation he doubted if it would be advisable for the New York and Ohio farmers to increase the acreage of corn, as small grain crops can be taken care of to better advantage with machinery.

State Conventions

In addition to the regular program there were many conventions of state societies and conferences held during the week. Thursday was Bean Day. A Conservation conference began on Tuesday and continued thru the week. Among the topics discussed were the preservation of next summer's food, health conservation as a war measure, fuel saving, the food supply, and the preparation of New York State housekeepers for voting. At the annual meeting of the Cornell Dairy Students' Association the outlook for dairying in New York State was reviewed by Professor W. A. Stocking.

The Drainage conference interested quite a number of farmers. Professor W. W. Warsaw spoke on the "Ditching Machines and Their Operation," giving some valuable information in regard to the work performed by the state-owned ditchers that were used in several counties last season. One machine turned out 4040 rods of tile drain in ten weeks. He gave figures showing that a practical operator with one of the standard ditchers could make good wages and a fair profit at the price which farmers are willing to pay for the work.

The annual meeting of the New York State Federation of Horticultural Societies and Floral Clubs was held in the college greenhouse, and addresses were made by Dr. A. C. Beal, Dr. L. M. Massey, Dr. E. M. Mills and several other flower experts.

Rural Community Organization and Planning included several lectures on planning and planting the farm landscape, farm roads, rural sanitation, rural recreation and the rural church and school.

Sheep and swine breeders and feeders held roundtables and conferences, which will no doubt result in increased interest being taken in these now very profitable farm industries.

The Federation of Farm Bureaus held several large and important sessions at which Dr. Charles E. Thorne spoke on the value, conservation and use of barnyard manure for soil improvement and other fertilizer problems.—E. E. Reynolds.

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SIR INKA PRILLY SEGIS

Who is a son of King Segis out of a 30-lb. granddaughter of the noted foundation cow Prilly. We have 65 of his young daughters born at Winterthur, the first of which will freshen in 1918:

No. 1—Born October 26, 1917. He is a splendid individual, about even in color. His dam is a large, typy heifer of great conformation and recently made 22.80-lbs. butter, 425-lbs. milk, (7 days), 97.90-lbs. butter, 1741.7 lbs. milk (30 days). She is on yearly test.

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Full particulars including pedigrees and photographs will be furnished on request to

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Quarts of Milk a year	Quarts of Milk a year

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either sex $15 to $20 each express prepaid in lots of 5. 45 high grade 2 year olds close springers $65 to $80 each. 40 yearlings not bred. 30 registered heifers ready to breed $125 each. 28 registered bulls, registered and high grade cows at Farmers' prices.

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Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.

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"NO HORNS" Naturally Polled Holstein-Friesian bull calves, sired by a son of the World's Record senior 1 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp. GEO. E. STEVENSON & SONS, Clarks Summit, Pa.

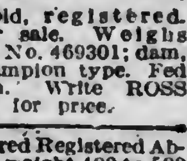
MILL HILL FARM offers Guernseys; bulls ready for service and calves. Tuberculin tested. Oscar Bolick, McKeansburg, Pa.

Beau Rio seventeen months old, registered Hereford Bull for sale. Weighs 1,290 lbs. Sire, Beau Donald 37th, No. 469301; dam, Lady Geneve 2nd, No. 352467. Champion type. Fed by my twelve-year-old son, Edson. Write ROSS F. STOUT, Clarksburg, W. Va., for price.

$400 will purchase three finely bred Registered Aberdeen Angus heifer calves, weight 400 to 500 lbs. each and a 14 mon reg. Angus bull by Black Woodlawn; Sire of Champion and Prince It. 50006. N.B. MILLARD, 48 Beethoven St., Binghampton, N.Y.

Jersey Bull ready for service. Dam's record over 500 lbs. butter in 1 year, Sire's Dam 22 lbs. in 7 days, Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us. J. M. MAIN & SONS, SHIPPENSBURG, PA.

BERKSHIRES Booking orders now for large Berkshire pigs. Prices satisfactory. DAVID WIANT, HUNTINGTON MILLS, PA.



"HAMPSHIRES" have large litters. Free circular. Also registered Guernsey Bulls. LOCUST LAWN FARM, Box 2, Bird-in-Hand, Pa.

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees. WALTER M. CRUTTENDEN Wilkes-Barre, Pa.

Reg. & Grade Holsteins 30 head reg. heifers, $250 each—cash or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Holstein Bull Calf six months old; 24 lb. dam, 31 lb. sire. George M. Carpenter, 41 S. Main St., Wilkes-Barre, Pa.

Penns Valley Berkshires are the large prolific kind. Write for our price list of young boars and open gilts. W. F. RISHEL, CENTRE HALL, PA.

Holstein bull calf, grandams have average record of 31 lbs. age 15 months. Price $80.00. Oaks Dairy Farm, Wyalusing, Pa.

Holstein Bulls from A. R. O. dams. Write your wants: they are priced to sell. M. E. Baschoar, Crystal Spring Stock Farm, Littlestown, Pa.

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd. SUNNYMEADS FARMS, R. D. 1, Harrisburg, Pa.

Milking Shorthorns Bull calves bred from the best blood lines, reasonable prices. Write for full particulars. C.M. Kennedy & Sons, Ulster, Pa.

Ayrshires young A.R. cows, bull and heifer calves, selection invited. Robert Templeton & Son, Ulster, Pa.

COUNTY NOTES

Crawford Co., Pa., (N.W.) Feb. 13.—Weather mild; thaw and rain for one week. Live stock is wintering well. The severe winter gave them good appetites. Hay sells from $15 to $18 in barn; eggs, 50c; butter, 50c; poultry, 23c live; apples, $2; potatoes, $1.35 to $1.50. Many potatoes were frosted in cellars. Snow too deep to do any work. Some manure hauled. Roads bad since it has thawed. A few public sales.—J. F. Seavy.

McKean Co., Pa., (N.) Feb. 12.—Very cold up to week ago. February 4 was the worst day we ever saw; high wind and 6 degrees below zero. Farmers are planning to raise all cultivated crops possible with available help. Dairies have been reduced so one or two men can handle them. Oats, $1.04 per bu; corn, $78 ton; bran, $48; cottonseed and oil meal, $62; gluten, $60; fresh butter, 60c; eggs, 70c. No farm work can be done yet except to haul out manure and keep things in readiness for spring.—R. C. Fuller.

Venango Co., Pa., (N.W.) Feb. 9.—January was extremely cold, storming today. Live stock not doing well because of extreme cold weather. Two feet of snow on the fields leaves crop reports only guess work. Eggs, 60c; butter, 50c; potatoes, $1.50; pork (dressed), 22c; veal, 17c; beef, 14c; hay, $25; straw, $20; stove wood per cord, $15. Farm work consists of shoveling snow to keep the roads open and doing chores. General conditions not as good as we would like.—W. J. Pringle.

Mifflin Co., Pa., (C.) Feb. 14.—Weather since January 14 has been below freezing all the time, many times near zero; several times from 4 to 6 and 10 below, the lowest being 20. February 7 the first warm day, since then getting warmer. Snow has melted, fields and roads bare in places. Ice is broken on the river and moving off nicely so far. Farmers could not haul their wood supply and fence material from the mountain on account of the deep snow in the woods and the extreme cold. Heavy beeves, 9c; cows, $50 to $100, according to kind. Wheat, $2; corn, $1.50; oats, 75c; apples, $1; potatoes, $1.25; butter, 50c; eggs, 50c. Some farmers preparing for public sales, others for moving.—J. H. Byler.

FARM DIARY

Farm Diary.—A Business Record and Account Book.—This is the title of a blank record book arranged by E. H. Thomson, of the U. S. Department of Agriculture, and published by the World Book Company, Yonkers, N. Y. The forms for diary and farm records are the most simple and common sense that we have ever seen. In an introductory note by W. J. Spillman, Chief of the Office of Farm Management, it is explained that the book is planned from systems of accounts found to have been invented by farmers and in use by farmers. In other words, they present a system based on farm experience. The book contains ruled pages for daily diary and records for one year; also summary pages covering all crops sold, live stock sales, live stock products sold, farm expenses, live stock records, list of machinery and equipment, crop records, current expenses, depreciation on equipment and buildings, etc. It is a common sense system of records requiring no book-keeping knowledge and requiring little time. It provides for records that will tell you what you want to know and permits of as complete records as you care to keep. The book sells for $1.50 per single volume and $1 each in lots of ten or more. For sale thru Pennsylvania Farmer.

NATION'S CANDY BILL

According to the U. S. Food Administration the annual expenditure of the United States for candy is, roughly, $400,000,000. This amount is about double to that used to keep Belgium supplied with food for the same period. With the same sum, 234,000,000 bushels of corn at the average price of $1.70 a bushel could be bought. This corn eaten by us would release the same amount of wheat, to go to Europe.

Early hatched pullets are likely to produce more winter eggs and consequently profits.

Poultry

$300 in 6 months

From $40 invested in HILLPOT QUALITY CHICKS

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Leghorns, Rocks, Reds and other profitable strains. Our FREE book tells how and why. *Write today* for your copy.

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Eggs White Leghorns Chicks

Do you want the best for your foundation stock, or new blood for your flock? Then order from an Old Established Breeder. We are not a Hatchery.

Single Comb White Leghorns Only

Our prices are as low as can consistently be named under present conditions.

SPRING WATER POULTRY FARM R. F. D. No. 1 Stockton, N. J.

DAY-OLD CHICKS

of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.

GOSHEN POULTRY FARMS, R 23 Goshen, Indiana

WILD TURKEYS

are hardier, healthier, more beautiful and easier to raise than common turkeys. Book your order now for immediate shipment. Write for free information. Stamp appreciated.

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Baby Chicks S. C. White Leghorns. $12.50 per 100. Circular. R. S. GOOD, PEACH BOTTOM, PA.

Reg. P. Chinas, Berkshires, C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry. P. F. HAMILTON, COCHRANVILLE, PA.

Hampton's Black Leghorns Day old chicks and eggs. Get my free circular before you order chicks; tells why the Black Leghorn is the greatest laying and most profitable breed on earth. Write today. Also White Leghorn Chicks. A. E. Hampton, Box F, Pittstown, N.J.

PARADISE POULTRY FARM Breeding of heavy laying Poultry. Trap Nested S.C. White Leghorns, Rhode Island Reds. Buff Ply. Rocks, 200-Egg Strain. Day-old chicks, Hatching Eggs and Stock for Sale. Our 1918 Circular Free. Box B, PARADISE, PA.

Tiffany's Superior Chicks Silver Laced, White and Columbian Wyandottes, S. C. R. I. Reds. Barron's Leghorns, Pekin, Rouen and Indian Runner Ducklings. ALDHAM POULTRY FARM, R. 39, Phoenixville, Pa.

S. C. White Leghorns Tom Barron Strain of heavy layers. Send for catalog giving prices and description of choice breeding stock, baby chicks and eggs. Ivywood Poultry Farm, Box 71A, Avondale, Chester Co., Pa.

Eggs—Baby Chicks Single comb white Leghorns, trap-nested stock, heavy laying strain. Cat. on inquiry. Book orders early because big demands and shortage of stock. Riverdale Poultry Farm, F. E. McAllister, Prop., Cortland, N. Y.

EGGS Black and White Langshans, Light & Dark Brahmas, Barred Columbian and Partridge Plymouth Rock, Partridge and Columbian Wyandottes, Pekin Ducks. 15 for $1.50 prepaid. M. H. MYERS, EDOM, VA.

CHICKS S. C. W. Leghorns from vigorous business bred hens that have lop combs, long bodies, deep egg baskets. The profitable kind. Get our prices. GUY A. LEADER, Rt. 2 York, Pa.

Selby Service Satisfies Ship us your produce, poultry and eggs, Penna. Potatoes a specialty. Returns day goods are sold. Ask for our market letter. SELBY PRODUCE CO., PHILADELPHIA

Look—Chicks $9 per 100 and up, for April delivery. 200,000 for 1918—8 best varieties. Our ninth year. Order early. Catalog free. KEYSTONE HATCHERY, Dept. 19, Richfield, Pa.

Baby Chicks English Leghorns $15.00 per 100. From trap nested stock. Remember we don't run a "Hatchery." GLENDALE POULTRY FARM, Dillsburg, Pa.

Baby Chicks Our famous winter laying varieties. White and Bar-Rocks, Reds, Leghorns, Anconas. Get prices before buying chicks. E. R. HUMMER & CO., Frenchtown, N.J. R.D.y

S. C. R. I. Reds Eggs $8 per 100; $1.50—15. Healthy vigorous utility hens—no pullets. E. R. JOHNSON, Center Bridge, Pa.

60 Breeds chickens, ducks, geese, turkeys, guineas, bantams, Hares, Collie and Fox-terrier puppies. Stock and Eggs. Exceptional fine cat. free. Write for yours now. Edwin A. Souder, Telford, Pa.

For Sale Chicks, 20 varieties. Write Desk E, 529 Hamilton Street. NORTH SIDE POULTRY CO., Allentown, Pa.

Baby Chicks S.C. White Leghorns, price right. Order now for spring and summer delivery. Howard G. Allen, New Park, Pa.

Thoroughbred Poultry Best 20 varieties. Eggs 15, $1.00; 40, $2.50 up. Cat. free. H. K. Mohr, Quakertown, Pa.

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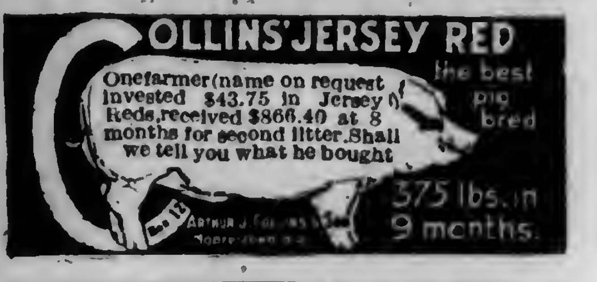

One farmer (name on request) invested $43.75 in Jersey Reds, received $866.40 at 8 months for second litter. Shall we tell you what he bought

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Three extra fine litters, brood sows to farrow in April and May. 2 boars ready for service. Overstocked, they must move quickly. *Write at once.*

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C. H. Carter, Whitguern Farm, West Chester, Pa.

O. I. C. SWINE Big Type, Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants. CRANDELL & SON, Box 53, Cass City, Mich.

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O. I. C. & C. W. pigs, shipped C. O. D. Sired by and out of champions. Mischief 2d weight 500 lbs. at 12 mos. S. L. RHODES, VERSAILLES, OHIO.

Durocs A choice 2 yr. old service boar; also Spring boars. Gilts will be bred for Mar. Apr. & May. Write your wants. Ira D. Jackson, R.10, Vanwert, O.

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Miscellaneous

2 REGISTERED PERCHERON MARES FOR SALE

Emma: Dark gray, 3 years old in May: weight about 1425 pounds.

Flossy; a Sorrel, weight 1300 lbs; 2 years old in May.

Sired by Carnot 52811. Both perfectly sound and have been driven. Good chance to start breeding.

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PERCHERON STALLION

No. 125175, for sale. Foaled April 19, 1916.

ELIZABETH FARMS, R. F. D. Lititz, Lancaster Co., Pa.

Hinman Milking Machine for sale. Hinman 3 unit milking machine for sale. Used only 3 months. 1 extra bucket, 2 sets No. 3 and 2 sets No. 4 test cups, all in first-class condition. L. P. Satterthwaite. Fallsington, Pa.

Railroad Traffic Inspectors Wanted.

$125 a month and expenses to start; short hours; travel; three months home study, under guarantee; we arrange for position. No age limit. Ask for booklet L29 FRONTIER PREP. SCHOOL, BUFFALO, N. Y.

365 Acre Farm in Buckingham Co., Va., 200 acres tillable. Ready to plant apple trees. 80 acre acorn orchard, fenced for hogs. 6,500 (half cash). 200 acres Central New York, $4000; 30 acres Connecticut, $3500; other smaller farms. HARRY VAIL, Owner. WARWICK, N. Y.

Wanted Tenant for 342 acre grain farm. Over 200 acres fertile river bottom land. Situated along Delaware River. A good proposition to the right man. For particulars write F B. HARDEN, Allamuchy, N. J.

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Hampshire Ram Lambs Registered. Excellent breeding. Vigorous and stocky. Mansotte Hill Farm, Hicksville, L.I.

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Two Registered Guernsey Bull Calves with A.R. backing. Write for pedigree and price. J. I. HERETER, Gettysburg, Pa.

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Weakness.—I have a mare, 8 years old, that is fed 4 ears of corn, 3 quarts of oats and 1 quart bran at a feed, 3 times a day. She also has plenty of good mixed hay. Some 8 months ago she commenced to stumble, would occasionally fall and was unable to get up without help. I am told that most of her trouble is in the back. S. B., Reynoldsville, Pa.—Give her one dram fluid extract nux vomica, ½ dram acetate potash, and 3 drams Fowler's solution of arsenic at a dose in feed or drinking water, 2 or 3 times a day until she recovers. Mix equal parts turpentine, aqua ammonia and raw linseed oil and apply to back thoroly, three times a week.

Bruised Arm — Abscess. — One of my horses kicked the other, bruising the arm some six inches below body. A bunch formed, which I bathed with warm water, then it opened and discharged yellow fluid, which later on became thicker. He holds up his leg. Our local veterinarian applied blister, stating that this was about all he could do for him. J. L. H., Lawrenceville, N. J.—I suspect that you may have a case of open joint. If so, he will perhaps not recover. Paint the bunch with tincture iodine, also swab out the sore with the same remedy, once daily. Are you sure that there is no foreign body lodged in the arm? Have your veterinarian keep watch of the case.

Garget.—My best cow freshened last July. She has a lump in bag which I thought might be result of being out too much in cold weather. But this cow seems tender and was kept in stable more than others of herd. I have applied olive oil but it failed to help her. A. P., Equinunk, Pa. — Apply one part iodine and twelve parts fresh lard to bunch, 3 or 4 times a week. Thoro hand rubbing will prove very beneficial in this case.

Dehorning.—What time in the year would you consider the best for dehorning cattle? Is there any special time so that after-growth does not ensue? W. E. K., Lafayette, N. J.—Dehorning should not be done when the weather is either too hot or too cold. Spring and Fall are the best seasons. Growth of the stump is not affected by season, but from leaving too much horn when the work is done.

Barren Cow.—I have a healthy 4-year-old cow that had a calf last June. Since then she has not been in heat. W. R. B., Somerset, Pa.—Give her one dram ground nux vomica, two drams ginger and two drams ground capsicum in feed, twice a day until she comes in heat. Remember that she may be barren and will never again come in heat. If carefully examined by competent veterinarian he can tell you if she will breed.

Infectious Abortion.—Instead of my cow carrying her calf until June next she dropped it January 20th. The calf was dead, but the cow has shown no symptoms of sickness. I have never seen any afterbirth, but notice patches of it in the dung. Is her milk fit for human use? S. E. V., Alderson, Pa.—Doubtless her milk is now fit for domestic use, but she should not be bred until some time in April, 1918. If she has vaginal discharge, dissolve one dram permanganate potash in one gallon of clean, boiled water and wash out vagina, using fountain syringe made of ½-inch rubber tube and tin funnel. Treat her 3 or 4 times a week.

Congested Udder.—Some time ago I milked a cow up to the morning that she had her second calf. Now she has a hard bunch in bag and of course is not giving as much milk as I wish she did. H. A. C., Spring Mills, Pa.—Give her one dram potassium iodide in feed or drinking water, 3 times a day. Apply one part iodine and ten parts fresh lard, four times a week, and bunch will absorb. Hand rubbing will help.

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NO ONE looks for milk from a starving cow; yet thousands of farmers pile stable manure month after month till the "regular yearly hauling time" comes, and then they wonder why their corn is poor and their grass thin.

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Pruning Peach and Apple Orchards

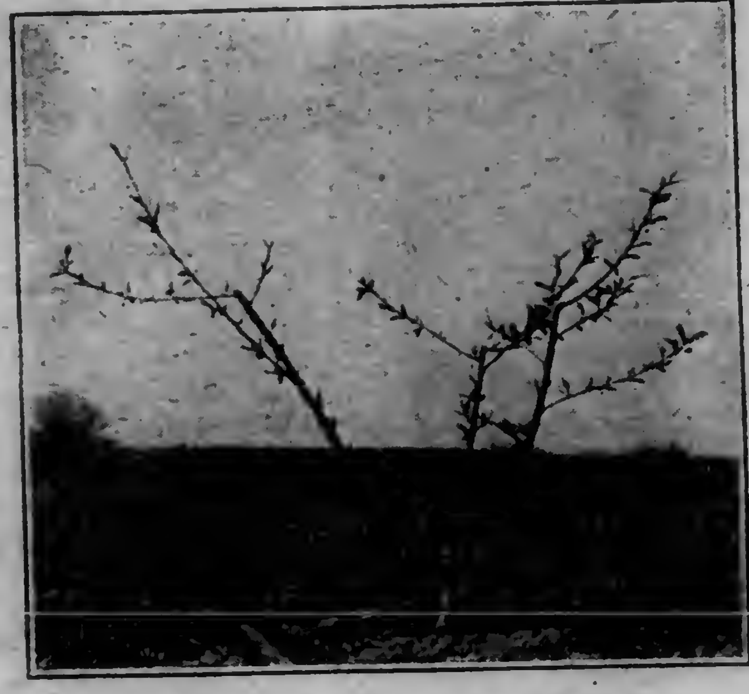
Principles and Practise of Pruning For Best Returns

By SHELDON W. FUNK
BERKS COUNTY, PENNA.

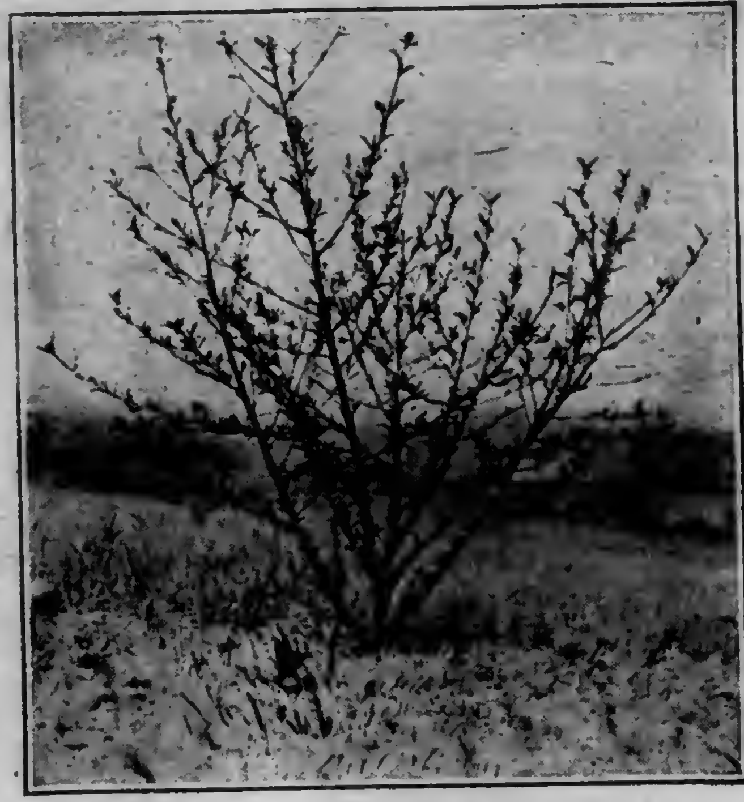
There are a great many reasons why it is necessary to prune our fruit trees: To keep the tree in its proper shape; to straighten the limbs so that they are better able to support their load of fruit; to allow the air and sunshine to circulate thru the tree and thus secure better and more perfect fruit; to change the habit of the tree, by causing it to produce more wood or more fruit, and to facilitate the operations of spraying, cultivation and harvesting.

There is always more than one method of pruning, and the one you should adopt will depend upon your personal preferences, the location of the orchard and the variety of the tree with which you are working. One very important principle is that the pruning should be made as simple as possible. By that I mean that the tree should be pruned from time to time in such manner that even an amateur will have no trouble in determining which branches should be removed. In order to do this, it is highly essential that the tree be started right. The picture of the tree in full bearing must be firmly imbedded in the mind. The proper number of leaders must be used so as to form the framework of the old tree. This is especially important in the commercial orchard, because in no other way can good pruning be done in an economical manner.

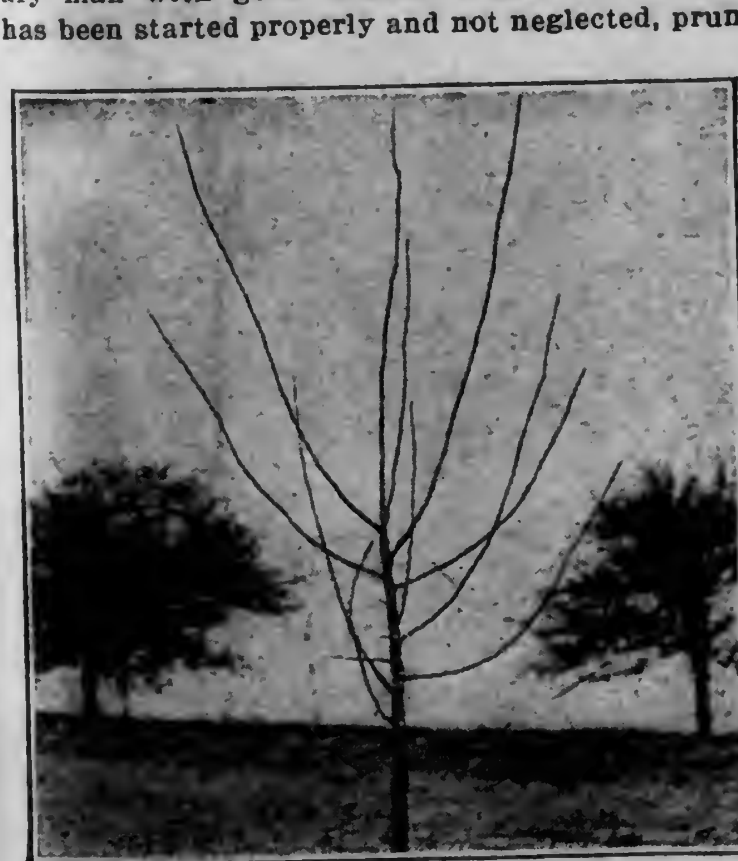
My experience has been that the ordinary pruner spends twice as much time considering what should come out as he does in the actual cutting. This is where nine out of every ten growers get into trouble. They cut away at their young trees for several years without any fixed idea as to what the tree should look like, and all at once they are simply up against a stone wall and do not know how to proceed. In other words, they have a tree that the ordinary man can no longer handle and an expert is required to start it over again. We do not want trees that require an expert, but trees that can be pruned by any ordinary man with good common sense. If the tree has been started properly and not neglected, pruning is one of the easiest operations in the orchard; if not, it becomes one of the most difficult of all operations. Expert pruners are born and not made and the supply will always be short.



One-Year Peach Tree After Pruning



One-Year Peach Tree Before Pruning



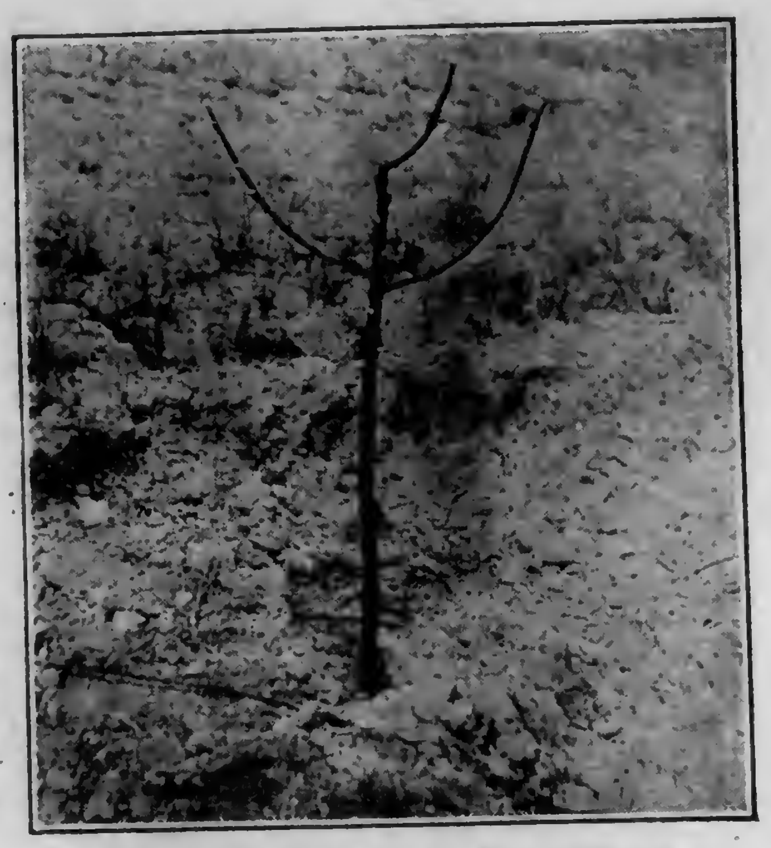
One-Year Apple Tree Before Pruning

Amount of Pruning.—Do not over-prune a tree. Nothing is gained while much time and money are lost. This is too common a practice in Pennsylvania. Most men know that it is highly important to prune a tree and a great many of them, fearing that they will neglect something, keep on cutting year after year, regardless of why they are cutting. One of the most pernicious habits is the continual cutting of apple and pear trees to buds until the trees get to be eight or ten years old. The result is that the grower, after wasting a lot of time and money, has a splendid shade tree but a mighty poor fruit tree. On the other hand, I believe in doing as much pruning as can be done economically. I want to do all the pruning necessary to make a good, strong, well-shaped tree without wasting time or money. To do this, a man must have a certain adaptation to the work and a lot of experience.

Time of Pruning.—The time of pruning depends largely upon the age of the trees and upon local conditions. The best time of all is during March or April, because the wounds seem to heal better at that time and we have no trouble with the limbs "freezing back" as we say. Where we have a large number of trees, however, it is impossible to do the work economically at this period. My practice has been to prune the older trees, both peach and apple, on favorable days during the fall and winter and to prune the young trees in the spring of the year. I also practice summer pruning on peaches if possible.

Painting Wounds.—I am satisfied that a great many growers waste both time and money painting the wounds on young trees. My experience has been that painting wounds on young, vigorous, growing trees is worse than useless because the paint has a tendency to dry out the bark at the edge of the wound and thereby cause it to heal more slowly than if it were not painted. Always be careful to make your cut close to the collar, and the wounds will heal rapidly. On old trees that are not growing rapidly, it is a good idea to paint all wounds over 2½ or 3 inches in diameter, as in this case there is a tendency to decay before the wound is healed over. In painting these wounds do not cover the entire surface but simply the inside area. This is the part that heals over last, and here is where the paint is needed. Keep the paint at least three-eighths of an inch away from the bark. Raw linseed oil and white lead is the best material to use. If you do not like the white color, a little lamp black may be added to make the wounds less conspicuous.

Pruning Tools.—Be sure that your tools are

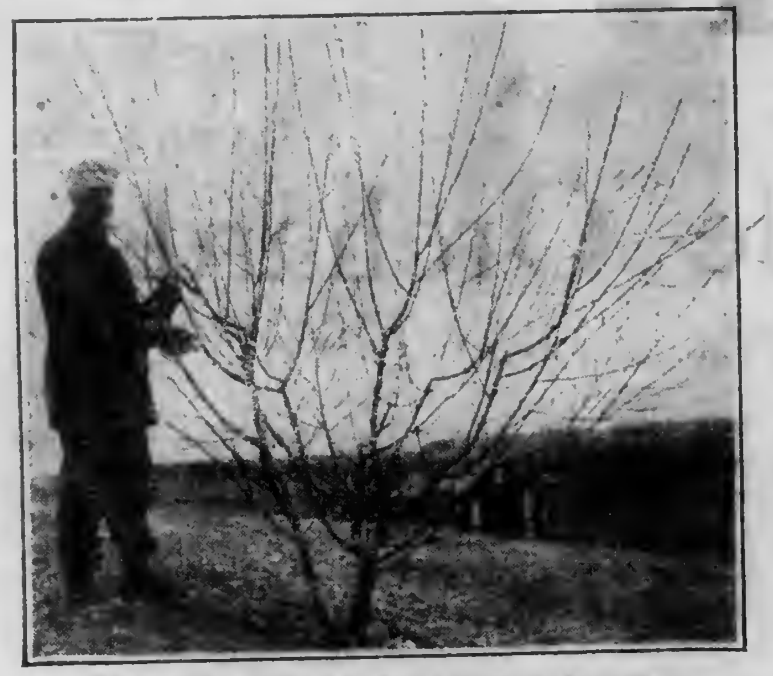


One-Year Apple Tree After Pruning

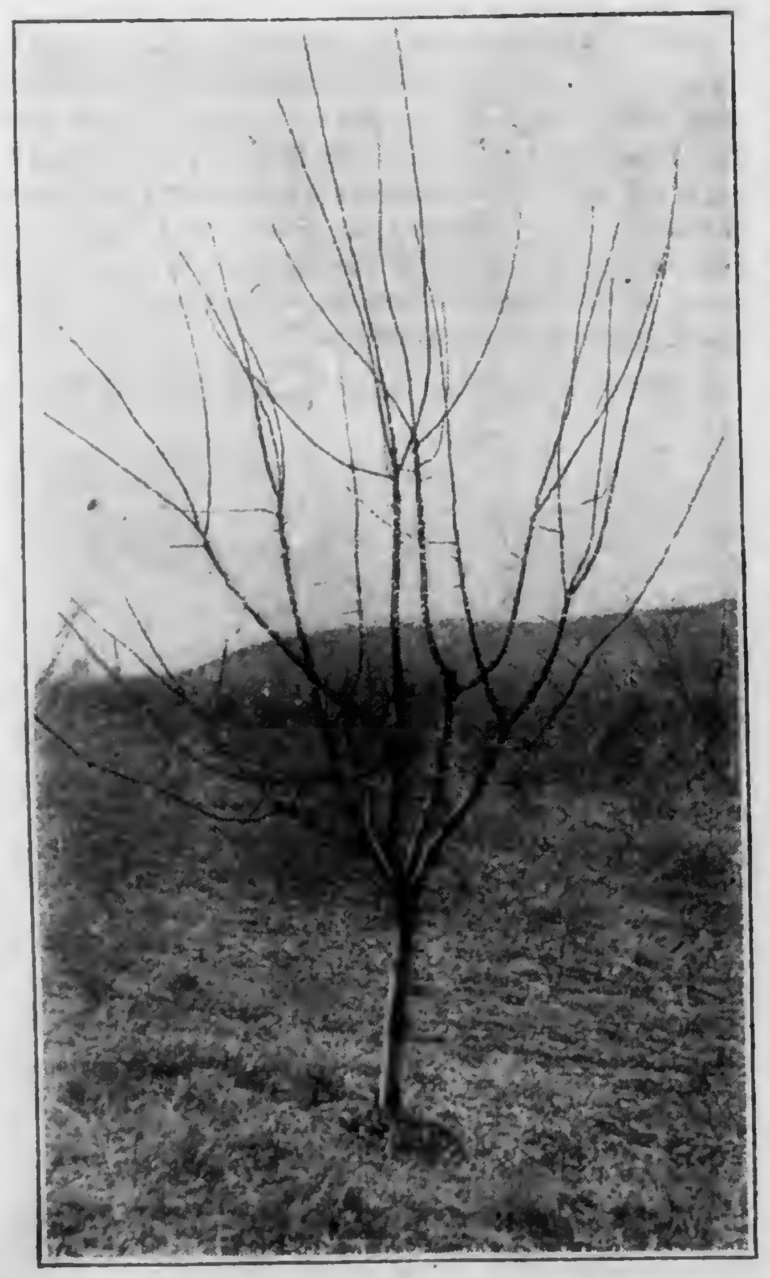
in good shape before you start pruning. Dull tools are not only a source of annoyance to you and mean laborious work, but they injure the trees and it is impossible to make clean, smooth wounds. On young trees, good hand pruning shears and a sharp saw are the only tools necessary. On old trees a long-handled pruner frequently comes in very handy and should be carried. Under all conditions avoid shears that do not make a clean, smooth cut, and those with a thick guard which naturally leave a stub at each cut.

Pruning the Young Apple Tree

Just as no two trees can be pruned alike, so no two men prune alike. Very often you might prune a tree in a certain way today and if you were to do the same work tomorrow, you would do it a little differently. Naturally, therefore, we have quite a number of methods of pruning an apple tree. There is more than one way of getting the same result and it is not well to criticize a man simply because he does not prune as we do. There are certain principles, however, which must be borne in mind if the best results are to be secured, and if a man will keep these principles before him he cannot go far wrong.


Three-Year Peach Tree Before Pruning

At present we hear quite a number of growers advocating no pruning on apple trees until they are ready to come into bearing. The claim is made that it cuts down on the cost of growing the tree and at the same time brings it into bearing a little earlier. There is a little truth in both of these claims but I have never been able to see that the end justified the means. My experience teaches me to see that the end justified the means. My experience teaches me that the earliest bearing tree is not always the most profitable one.


Three-Year Apple Tree Before Pruning

When a tree starts bearing at four or five years of age, it produces from a peck to a half bushel of apples and does it at the expense of wood growth. The quantity is so small that it amounts to very little and I prefer to wait until my trees are seven or eight years of age before bearing. Then they are large enough to bear several bushels without stunting the wood growth of the tree. As far as reducing the cost of growing the tree is concerned it is so trifling that it is scarcely worth while. For instance, the cost of pruning a young apple tree for the first four years is a trifle over two cents. And this work is done during the winter and spring when there is practically no other work for our help to do.

The delayed pruning system is used quite frequently by large growers and because of the large amount of work and the scarcity of help; I can readily see how they drift into this practice; but I believe it is false economy and not good orcharding. I tried that method on one bunch of trees and it was not a success. There is also another side of the case. A great many men overprune, which is just as bad as no pruning at all. I believe in pruning a young tree a little each season or rather training it from year to year. In this way we make a better tree with a minimum of pruning and at the same time do it with the regular help employed on our place.

In starting my young trees, I want a low head but not one that is too low. Therefore, the first year, if I am setting a one-year tree, I cut it back from 3 to 3½ feet above the level of the ground. I have the upper bud pointed in the direction of the prevailing wind and then, a little later, when the buds have started, rub off the buds below this one for a distance of about six inches, leaving a bud pointing in another direction. Continue this operation until you have removed all of the buds with the exception of about four, all of which are about six inches apart. These four buds will form the framework of the old tree and by having them well spaced, there is less danger of the tree breaking apart.

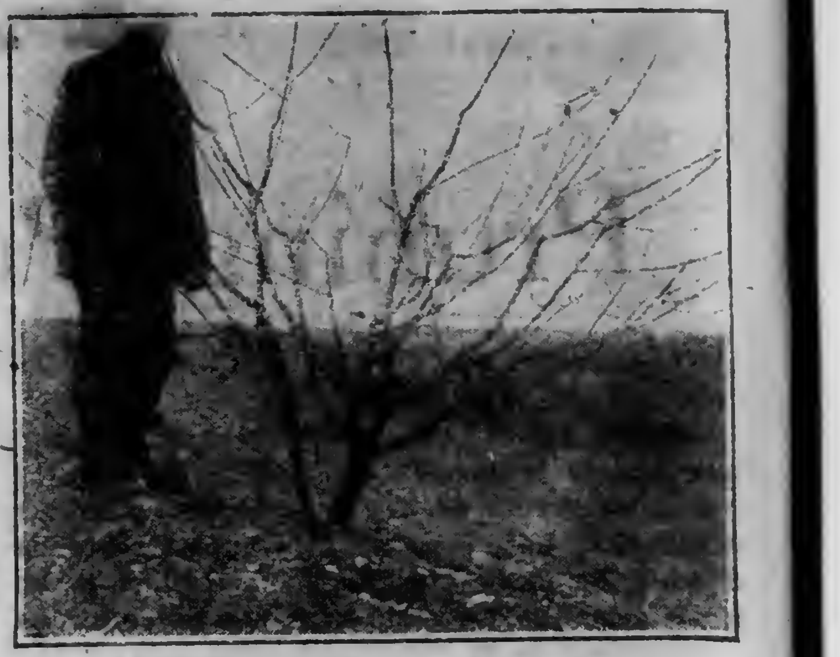
The next spring these four branches are cut back to outside buds at a distance of from eight to ten inches from the trunk. During the summer these small buds will each send out three or four branches which must be removed the second spring after planting, with the exception of about one branch on each limb. These branches are also cut back to within 12 or 14 inches of last year's growth. The same plan is followed the third year, excepting that the leaders are not cut back this year. Simply take out the surplus branches but do no cutting back, the object being to allow the leaders to develop lateral branches because the apple tree starts to develop branches on two-year limbs. Beginning the fourth spring, we therefore cut back only to outside limbs and continue this practice ever afterward. This plan necessitates less pruning and also spreads the tree more rapidly than if we continued cutting back to outside buds. Our object in cutting to buds the first two years is to form strong, stocky limbs, then by changing to outside limbs, we prevent the tree from becoming too tall and at the same time spread it very rapidly.

You will understand that this plan can not be carried out to the letter on all varieties of apple trees because of the great difference in the habits of growing, but it is as near any set plan as can be given. If the fundamental principles are understood by the pruner, his own judgment will readily enable him to decide how much pruning should be done. Have a reason for every cut that you make, and if you can find no reason for taking out a limb leave it. No one can become an expert pruner in a year or two. He must necessarily make some mistakes at first and then by watching his trees carefully from year to year, he will see where he could have made an improvement in the shape of the tree or a saving in labor.

After pruning thousands of young apple trees in my own orchards and in practically every county in this state, and after trying out the various systems advocated by different men, I have determined upon the above plan because I find that for me it is the simplest, most economical and most satisfactory method of training a young apple tree into a large, fine, open headed tree, a tree which is capable of bearing an immense crop of well-colored apples, distributed over the entire tree without breaking to pieces under its own weight of fruit.

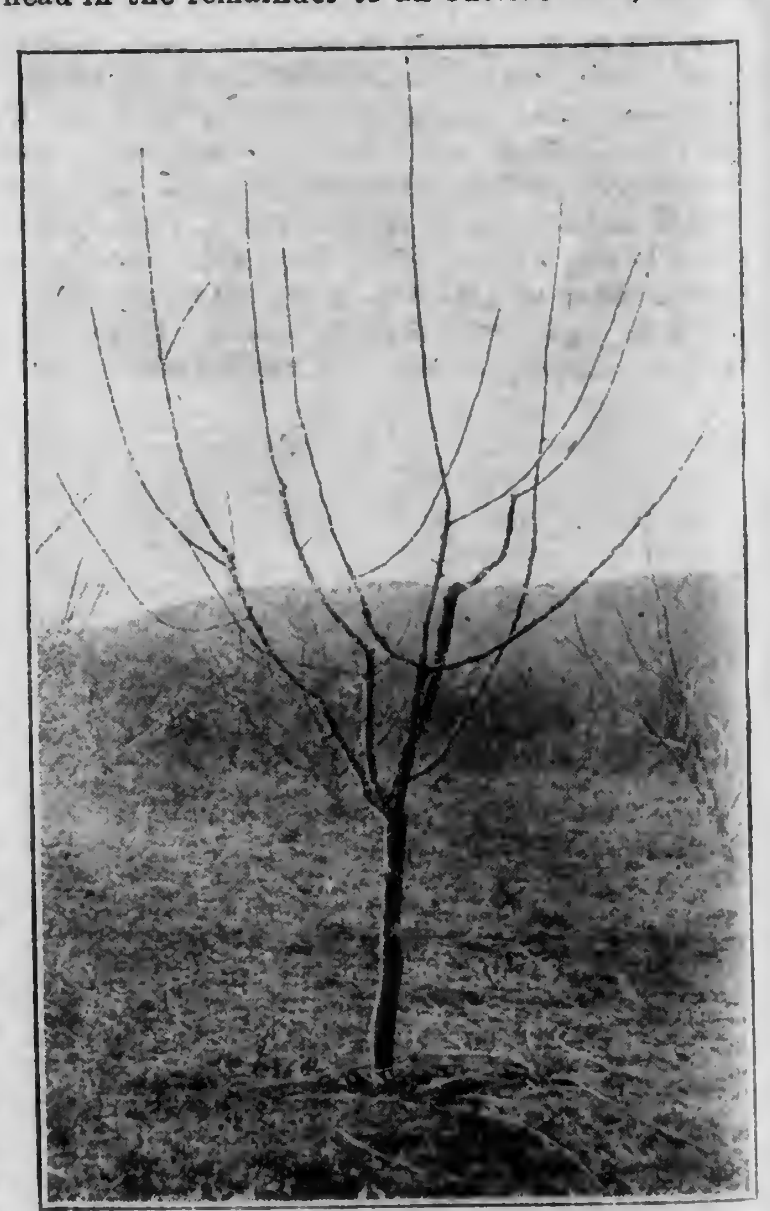
Pruning the Peach Tree

Just as we find many systems of pruning in the apple orchard, so we have various plans of pruning the peach tree. The pruning of the latter is somewhat different because of the difference in habits of growth. Many peach growers do not prune very heavily because they say the peach is a short lived tree and does not justify it. I cannot agree with this. I believe in rather severe pruning when the tree is young because I find that I get a much heavier yield and at the same time the tree seems to live longer. By pruning rather severely at first, we secure a very large, wide spreading tree that will carry from 10 to 12 bushels of fruit in a single year, and the increase in yield over the poorly pruned tree more than pays for the extra cost in labor. I realize that pruning is also carried to an extreme here, and I have visited a great many orchards where the trees have been pruned entirely too hard from the standpoint of both fruit and economy in labor. The majority of peach orchards are inclined to be underpruned rather than over-pruned.


Three-Year Peach Tree After Pruning

I like a medium sized, one-year peach tree for planting and prefer to cut off the top about 18 inches from the ground. I want the lower limbs at least six inches above the level of the ground, which gives me about 12 inches in which to form the head of either three or four limbs (never more than four). It is very important that the trees be started this low, not only from the standpoint of economy of labor in pruning, thinning and picking, but also because such trees suffer much less from windstorms. I not only want a low tree but I want the limbs strong and stocky, so they will carry their immense load without breaking.

After the tree has been in the orchard one year, we cut out the surplus leaders and then head in the remainder to an outside limb, cutting off from one-third to one-half of the growth made during the past season. The next spring we follow the same plan but do not cut back more than one-third of the new growth. The following spring, which is the beginning of the third summer's growth, we do no pruning but wait until June and then start summer pruning. (That is, unless labor conditions are such that it is impossible to get help in the summer, in which case we must necessarily do our pruning in the spring.)


Three-Year Apple Tree After Pruning

I am a great believer in summer pruning at this age and always try to get it done if possible. At first, I always pruned the trees in the spring of the third summer and then again in June, but I have found that the spring pruning at this age is simply wasting time if you intend pruning again in June. My reason for June pruning at this age is to change the habit of the tree from the development of wood to the development of fruit buds. Spring pruning, we know, promotes wood growth, while summer, or June pruning, being a robbing process, promotes early bearing. I want a good crop of peaches the fourth summer and I find that by summer pruning my trees quite severely the third summer, I get a heavier crop the fourth season than if I practiced nothing but the spring cutting.

The summer pruning is done in the same manner as spring pruning, the only difference being that the trees are covered with leaves instead of being dormant. Thin out the surplus wood and cut back the leaders to outside limbs just as tho they were dormant. I think the best results are secured if the work is done sometime between June first and July fifteenth. If the trees are making a heavy growth they should be pruned again the fourth summer but after that, return to the spring pruning, as the tree is now bearing heavily and needs wood stimulation. The conduct of the tree must determine extent of pruning.

Under this system of peach pruning, quite a lot of work is required during the first five years of the trees' life but after that time very little pruning is required unless the fruit crop is lost several years in succession.

The greatest menace to the peach business in Pennsylvania today is the disease known as Peach Yellows. How this disease is spread from tree to tree is not known, but I feel certain that quite frequently it is spread by pruning. For that reason, it is always well to disinfect your shears after pruning each tree. I always carry a kettle of concentrated lime and sulphur solution for this purpose when pruning peaches, and feel that it is a good form of insurance against this dreaded disease.

Selecting and Testing Seed Corn

An Important Duty This Year---A. D. Cromwell, Chester Co., Pa.

There is more soft corn this year than usual, hence there is more need of careful seed testing. There are more farmers without seed corn and it may pay to test considerably more than one intends to plant for there may be a good demand for all seed corn.

If one must buy, the best seed will probably come from a Corn Club boy who lives in the district. There is danger of getting a low yield from corn which is shipped in from a distance. The Corn Club boy should use the 4H Brand label. This they can secure from their Farm Bureau Agent and it should mean enough to a buyer to induce him to pay a reasonably advanced price over ordinary seed corn.

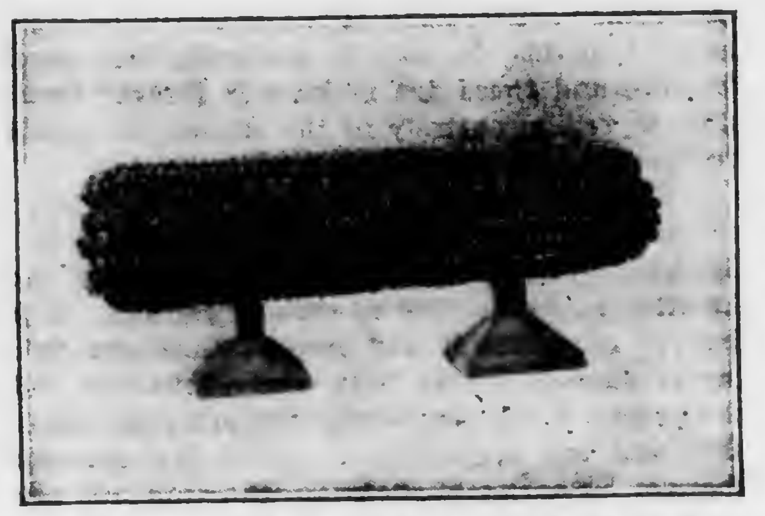
If one has his own seed corn, he should sort it and grade the ears before he tests. This means that he should go over it and pick out the poorest ears and place them in a pile by themselves. Then he should make three piles of the good ears. In one place the large kerneled ears; the medium kerneled ears in the second, and the third box should be for the small kerneled ears. If one must plant the large kernels and the small kernels, he certainly should not try to plant them with the same planter plates. If large and small kernels are planted together, there will be an uneven stand, some hills will have five stalks and hence one or two barren stalks and some will have but one stalk.

The man who fails to grade his corn gets an uneven stand and he must thin or suffer loss. But by grading and by testing the planter plates and, if necessary, filing them so as to make them plant the medium sized kernels accurately, one may get a fairly accurate and even stand with but little work.

Again if one must plant the large or the small kernels, he should plant them in a field by themselves. If all of his medium sized kernels are planted in a field from which he may gather seed, he may, in a short time, get a fairly uniform type of kernel.

After placing the ears having large kernels in one box, those with medium in another box and those with small in another box and those with small kernels in a third box, one should test each ear.

There are two kinds of testers that are easily made and highly satisfactory. One is the sawdust or sand box tester. Take a box about fifteen to twenty inches wide, from twenty to thirty inches long and about six inches deep. Into the bottom of the box put about two to three inches of sawdust. Level it down solidly with a brick or chunk of wood. Be sure to pack the sawdust into the corners and around the edge. Then rule a piece of cloth that has been cut the size of the box into blocks, preferably two by two and one-half inches. Place the checkered cloth over the top of the sawdust or sand and wet thoroly. Then take each ear and label it or put it in a rack, or on a table where it may be kept separate. This is very important for there are about 800 kernels on each ear and if we should get ears mixed so as to throw away a good ear and save a dead ear, we lose 1600 kernels, and we may have 800 less ears of corn next year. One hundred average ears makes a bushel, and 800 ears at $1.50 per hundred are worth $12. Twelve dollars per ear for seed corn makes it worth testing accurately.


Pennsylvania State Champion Ear in 1917

After the ears are racked or labeled, take from each ear six kernels, two from opposite sides near the tip, two from opposie sides near the center and two from opposite sides near the butt. Place the kernels on a check numbered and lettered the same as the ear. After ali of the checks are filled, cover with a piece of cloth and wet again thoroly, then cover with a sack, rug or heavy blanket and leave for three days, lift blanket and wet again and leave for four days. Then examine to learn from which ears kernels do not germinate.

Another approved tester is the rag doll. The rag doll tester is much like the sawdust box except that a cloth only is used and after the cloth is wet and the kernel placed on the wet cloth, the ends and sides of the cloth are folded over the kernels and all is rolled into a bundle and tied. Then the "doll" is wrapped in a heavy, damp cloth or placed in a pail and covered. The danger of the rag doll is that one will let the outside of the doll dry out. Keep damp, even wet, is a very necessary caution for one using the rag doll.

After the corn is tested, it may be shelled. If we have a mechanical kernel grader, we may shell by an ordinary hand sheller. Butt and tip kernels yield as well as average kernels. The objections to butt and tip kernels are their irregular shapes and sizes. If mechanically graded, the regular sized tip kernels grow corn that we believe yields slightly more and the butt kernel corn that yields slightly less than average center kernels.

Herewith is a picture of the ear that won State Championship at the recent state corn show at Harrisburg. The ear was grown by Andrew McCue, of Chester Co., Pa. The corn is the famous Cloud corn which the corn breeders of Chester County are growing so well. The ear is nine and one-half inches long and seven and one-half inches in circumference about one-third way down from the tip. The kernels run six and one-half to an inch and are five-sixteenths of an inch wide. The kernels are thick, wedge shaped and are five-eighths of an inch long and have a wide, long, deep germ. The ear was well matured; there was little crown starch and an abundance of horny starchy. The crown starch measured about one-sixteenth of an inch on the back of the kernel. Tip and butt were well filled. The ear was faulty for having some irregularly shaped kernels and a slightly swelled butt.

This state champion ear gives us a good ideal to go by when we are selecting seed corn to plant. The best ears should be planted at one side of the field and seed saved so far as possible from the select ears. A better way is to plant a small field by the ear-row method and hence actually breed up the corn. Mr. McCue and a number of other Chester County farmers are actually breeding corn as carefully as others breed cattle. That such work pays in increased yields is abundantly proved by experience.

Putting Kernels of Corn in "Rag Doll" Seed Tester

The danger in plowing under a heavy coat of manure is that the manure tends to break the capillary connection of the soil with the subsoil causing the surface to dry out, resulting in the "burning out" of the crop in a dry season.

Pennsylvania Farmer

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PHILADELPHIA, PA., MARCH 9, 1918.

Farm Labor Program

On page 13 of this issue we publish a condensed statement of a plan for distributing farm labor, announced by the U. S. Department of Labor. The plan is ideal for covering the country and should be most effective in distributing the men wanting jobs to the sections needing help. Operating thru the rural mail carriers and the rural postoffices, it should reach and cover farm sections as well as the towns and cities. It should bring out all of the farm help available. The question of greatest interest to the farmers is how much of that kind of help is available. There are indications that a considerable proportion of the experienced farm laborers that left the country last year to take up work in the cities is now tired of the exacting conditions under which they have to work, or are disappointed in the returns from city work. Some of this labor is now ready and anxious to return to farm work. In the vicinity of several large eastern cities the applications by experienced farm laborers for work on farms have been much more numerous this spring than last year. The new plans for getting in touch with all available labor should help bring these cases out. The opportunity for the individual farmer lies in getting his application in early.

* * *

Substitute Feeds

A readers says: "The various food and feed regulations have put us farmers between the devil and the deep sea. We poultrymen cannot dispose of our birds. And we cannot get feed now that the mills are to shut down. Surely the farmers of today must make bricks without straw; at least, eggs without bran".

Just so the dairyman must make milk without bran and without many of the other mill and commercial feeds that he has previously used. But so must the housewife make bread and cakes and puddings without her full allowance of wheat flour. The multitude of wheat flour substitutes that the housekeepers are finding would be most startling if the foods they are turning out from these substitutes were not so appetizing and so satisfying. Being both appetizing and satisfying they suggest the possibilities of similar substitution in our dairy, poultry and general livestock feeding. There has been need of producing more of the dairy feeds on the eastern farms for many years. The need is greater now than ever before. The northern counties can grow more oats and much more barley. Southern counties can grow more soy beans and cow peas. Both can grow more leguminous forage crops. The more general use of these home-grown feeds will go a long way in solving the feed problem next winter, in making the growers less dependent on feed regulations and traffic troubles—in providing straw for making the bricks now so badly needed.

* * *

THE SIGNS OF THE TIMES

On page 17 we publish a report of an interesting meeting of agricultural people in New York State. This meeting was composed of representatives from many of the different agricultural bodies of the state. A reading of the report will show the purpose of the meeting which might well serve as a suggestion to the farmers of other states.

Those who keep tab on the trend of events will notice some important developments now going on in the social and economic worlds. One effect of the Great War has been to shake the people loose from their accustomed and traditional moorings in the realms of thought, and set the mind afloat to find new and, perhaps, better harbors. Because of the war men have found it necessary to change old customs, to revise previous standards, to form new ideals and to break away from many former practices. New and higher conceptions of the individual's rights as well as his duties are gradually but surely forming and these are making it forever impossible to return entirely to the status quo ante in business, politics or government.

This war within a war is not confined to any one country. It is in progress, not only in Russia, Germany and Austria, but in England and America as well. The so-called "captains of industry" recognize it and most of them are fighting it surreptitiously thru their influence with the press. A few are wisely accepting the inevitable and are preparing to make the necessary changes. Charles M. Schwab, the iron and steel magnate, recently expressed himself as follows:

> "The man who labors with his hands, who does not possess property, is the man who is going to dominate the affairs of this world, not merely in Russia, Germany and the United States, but in the whole world. This great change is going to be a social adjustment . . . . but perhaps in the end it will work inestimably to the good of all. I am not anxious to give away my wealth. The more wealth and power a man acquires the more he wants. . . . . But changes in social conditions do not come by man alone, but because God decrees them."

Two English statesmen, Arthur Gleason and Graham Wallace, have prophesied a more democratic control of industry. Sir John Hodge says that "labor must be called into councils of directors of every great firm. One of the lessons which the war has taught English industry is that labor must have a voice in the direction of corporations." Labor will never be willing to return to pre-war conditions, says Sir Edward Carson.

Walter Gordon Merrit, Counsel of the American Anti-Boycott Association, in an address before the New York State bankers, said:

> "Great Britain will never return to its pre-war condition of industrial strife, and our beloved country, which now in some respects is the most conservative of nations, will not be far behind. Everywhere thruout our own land is the pervading thought that the day of the working people is at hand and that democracy is coming into its own. . . . . This feeling of change, precipitated and crystallized by the war, is but the inevitable harvest of disturbed and disordered industrial conditions, and the collapse of Government in dealing with them. . . . . A nation divided against itself by the labor question as this nation was and will be again after the war, must find some way of overcoming that division."

Mr. Merrit proposes co-operation as the remedy; that instead of each side meeting by itself and denouncing the other, they should meet in joint session for the mutual consideration of the business relating to either and both. Mr. Merrit fails to realize that the "collapse of government" is largely due to laws granting special privilege to one side or the other, and which were not based upon democratic principles.

Business co-operation is good and necessary but it is not all that is needed. Business as well as all other institutions rest upon law, and laws are the formal enactment of the sentiment or desires of those having sufficient numbers, influence or wealth to bring about their enactment. Those interested in obtaining special privileges have contributed most of the funds necessary to finance the political parties, and for this reason political leaders and most law makers have given attentive ears to those who furnish the sinews of political warfare. By these means government has been administered, and our economic institutions developed in such a way as to gather from the mass and deposit with the few.

To change this condition is the meaning of the rise of the new democracy. It means equal responsibility and the equitable distribution of the fruits of productive effort. The farmer may ask, "Where do I come in in the above considerations? Are they not chiefly in relation to industrial workers?"

What is the farmer but an industrial worker? Surely he can not or would not pose as a capitalist. The returns from his efforts, his past small influence in economic and political affairs and the burdensome share of labor and taxes he bears place him squarely in the class with the other hand-and-brain laborers of the world, and his problems, with theirs, are inextricably bound up in political as well as economic questions. For these reasons he must join hands with the rest of the world's workers in the work of establishing real democracy and economic justice.

Next week we shall attempt to discuss the mutual interests and the need for coalition between farmers and other producers.

M. LYMAN LAWRENCE DEAD

M. Lyman Lawrence, vice-president of the Lawrence Publishing Company, eldest son of our president, M. J. Lawrence, died at his late home, Cleveland Ohio, February 12, at the age of forty-eight.

M. Lyman Lawrence

Lyman—as he was fondly known to his host of friends—was born in Cleveland and received his education in the Cleveland schools. At various times he was in charge of his father's interest, acting as manager of The Michigan Farmer for a time and of the Ohio Farmer. Ill-health compelled him to discontinue an active career.

Lyman Lawrence was a big-hearted, kindly, red-blooded man. He had a host of friends and acquaintances. Surviving him are his wife, his father and his mother, two brothers—Lieut. Paul T. Lawrence, of the Quartermaster's Department, U. S. A., and Marcus J. Lawrence.

HARRISBURG NOTES

Starving Schools.—The last fortnight has brought rather unpleasantly to the attention of people at the State Capitol the situation in regard to the finances of many of the rural school districts of Pennsylvania, one of the conspicuous instances of failure to enact remedial legislation during the last two sessions. A series of reports has come here showing that between the weather conditions which made it impossible for children to get to the country schools, even where means of transportation were afforded them, and the demands for salaries, fuel and supplies, some of the districts of one of the wealthiest states of the union will be unable to furnish all of the educational facilities required by law. In some districts terms will be curtained and in others the inability to pay teachers what they could obtain for work in other fields caused interruptions. Old teachers have come out of retirement in a patriotic effort to help, but the situation is one which is deplorable when one considers the millions of dollars Pennsylvania has to spend and the way it is spent.

Special Session Talk.—At this writing signs of an extra session of the legislature are not more valuable for forecasting purposes than they were two weeks ago. Except among a few men zealous for enactment of the prohibition amendment and anxious to get some people on record, the governor's idea has not found favor thruout the state and even some advocates of the amendment fear that the 1917 legislature, which would have to be reconvened, might run the amendment thru a corn sheller and hurt its chances with the 1919 general assembly, 235 of whose 257 members will be elected in November. The amendment can be taken up at the sessions of 1919, 1921 and 1923 and a special session would cost almost half a million dollars, first and last. Frankly, it does not look as tho the governor would take the responsibility for an extra session unless he could get a program that would be of state wide benefit.

Out for O'Neil.—The state administration has formally attached itself to the boom of Highway Commissioner J. Denny O'Neil for governor and petitions for the commissioner have been put into the hands of men connected with the state government to get signatures. The commissioner plans to make an energetic campaign and the state administration to seek vindication at the hands of the voters thru his candidacy.

Road Repairs Start.—A vigorous start in repairing state highways to meet the demands of army truck traffic and the increased motor vehicle travel has been made by Commissioner O'Neil. The men in charge of roads in every county have been told to put the roads into shape and to keep them that way and that no excuses will be taken. The highway department has more funds in hand to meet the road repairs than ever known before and proposes to make a record, especially on the main travelled highways, while construction work will be pushed where authorized.

Dorsett Leaves.—E. B. Dorsett, whose experience as chief of the state bureau of markets furnished a fine example of what happens between millstones, has severed his connection with the department and has not been paid a cent for his services or expenses. It is probable that when the supreme court settles the controversy over the right of the governor to appoint officials rejected by the Senate, Mr. Dorsett will be paid, along with others. The battle will now start again. The governor will naturally name some one of value from a political standpoint, and it is assumed that he will get him confirmed by the Commission of Agriculture, or get a new commission.

The Wheat Situation.—According to people at the Department of Agriculture there is at least twenty-five percent of the wheat in the hands of the growers at this time. The offerings have not been what has been expected and the Capitol folks express disappointment because more potatoes are not offered for sale by growers.

Institutes Close.—State farmers' institutes have about reached their end and the weather is held responsible for the attendance running below the 150,000 mark of last year. Some of the counties had notable crowds, especially those in the southern tier and if weather is good it is hoped that the northern list will show similar attendance worth while.

Tractors not Bought.—In spite of all the fuss and feathers for the last six or eight weeks it turns out that the state authorities have not yet bought the forty tractors which were to be turned loose for the benefit of farmers whose fields must be ploughed and whose hands have gone to the industries or entered the national defence service.

Smallpox Spreads. — There has been a rather uncomfortable spread of smallpox in the state, largely due to camps of negroes which have come from other states. The contagion now exists in over a dozen counties and some rural communities have been afflicted. Vaccination is now being ordered generally.—Hamilton, Harrisburg, Mar. 4.

NEW YORK LETTER

Great Victory for Farmers.—After several weeks' vigorous concerted opposition on the part of farmers' organizations to the appointments made by the Governor for membership in the State Farms and Markets Council the Governor, in a special message to the Senate withdraws his appointments. These included John Mitchell as chairman, altho Chas. Betts, secretary, the chief official whose removal was desired, still holds his office. This is regarded as a most significant concession to the farmers. The Governor had publicly pledged himself to place a fair representation of farmers on this council, but had ignored a large number of suggested appointments of representative farmers, not one being included in the personnel of the council. The political parties of the state have in vain for weeks past tried to stem the tide of popular disapproval. Further developments and new appointments are awaited with great interest. Political appointments to agricultural positions are not going to be tolerated by an aroused public, and it is hoped this will be a precedent of value.

State Agricultural Census.—According to the state census just completed some interesting stories are told. The number of men enlisted from the farms in the past year is 3,772. Of those drafted from farms, 11,427. The number who have left the farms for other kinds of work is 19,459, a larger number than that taken by military service, and a significant commentary on the necessity of giving the farmer prices that will allow him to compete with city wages for his needed labor.

New York Apples Exhausted.—The holdings in apples are very light, all but Baldwins and Russets being gone. Dried apples are, if possible, slower. The government may buy up remaining holdings in dried stocks.

Send Farm Boys from Camps.—W. S. Clemens of the State Employment Bureau says the only possible solution of the farm help situation is to send farm boys in training home to aid in planting and early cultivation. The farmers insist that they want men who understand farming.

Poultry Feeds Still Further Restricted.—Poultry owners feel that they have decided "white elephants" on their hands in the form of laying, or should-be-laying hens that they may not sell or kill, and for which they can not buy a laying ration. Hens are laying far under the normal amount of eggs, because corn or corn products, bran or other wheat products are both practically out of the market. Since the government order that 95 percent of the wheat shall go into flour there is no bran or middlings to be had in most sections.

New Federal Land Bank Branch.—Fifteen members of a new branch of the Federal Land Bank at Cortland have subscribed $43,000. The new branch is to be known as the Lioughnioga Farm Loan Association. Its president is R. G. Cole, and Secretary W. T. Merida, of Cortland.

State Police to Teach Children.—In view of the fact that last year 1,200 lives were crushed out by automobiles in this state, Secretary of State Hugo and the state department of education have arranged that New York state school children shall be taught the rules of the road by the state constabulary. Mr. Hugo pledges that intoxicated and unlicensed chauffeurs shall be driven from the road.

New Slogan.—"Fifty farmers in the next New York Legislature", is proving a very popular slogan since the three recent great farmers' meets State Grange, Farmers' Week and meeting of State Federation of Farm Organizations. Former Commissioner of Agriculture, Huson, advises the farmers to take care that the fifty are real farmers, not parlor farmers, or farm agitators. The aroused sentiments of the people at the present time would seem to guarantee this, and the deference they are awarded just at present in political matters.

No Maple Sugar or Bean Restrictions.—Farmers are informed there is no limit to the amount of maple sugar anyone may make or own. Bean growers have received similar instructions, tho repeated reports to the contrary have been circulated. The maple sugar season now promises to open early.

Market News.—With improvement in country roads, potatoes have been shipped rapidly this week at 80 cents per bushel ungraded, or 85 cents graded, a decided slump. Cabbage has also declined materially, bringing $40 at present. Eggs also continue to drop. Hay holds at good prices; also beans, onions and apples.—F.

NEW JERSEY FARM NOTES

May Kill Deer.—Farmers of the state may now kill deer which run on cleared or cultivated land, in the closed season for this game, and destroy crops and other property. The farmers suffered considerably last year from the depredations upon their crops by the deer which left their accustomed haunts. Governor Edge at the time advised the farmers to shoot the animals, and he has signed the bill authorizing those affected to adopt this course.

Select Farm Help.—The farmers of the state are advised by the Department of Conservation and Development to begin selecting their help for the spring work now and engage them in putting up firewood until they are needed in the fields. The State Commissioner of Labor reports that there is plenty of good farm help now seeking employment. The State Forester has pointed out that a great quantity of firewood is going to waste and the Fuel Administration has intimated that people who can get wood may be refused coal next winter.

Vocational Education.—Lewis H. Carris, Assistant State Commissioner of Education, who has been in charge of industrial education in the Department of Public Instruction, and has supervised the agricultural instruction of the state has resigned and State Commissioner Kendall has appointed Wesley O'Leary, who has been in charge of the Essex County Vocational Schools. Mr. Carris has been on leave of absence from New Jersey for some months assisting the Federal Board for Vocational Education in arranging with the different states for the putting into operation of the new so-called Smith-Hughes Law.

State Police Bill Fails.—Among the propositions which failed of enactment at the Legislature was the State Police Bill over which the biggest fight of the session was waged. It was advocated in the interest of the rural sections on the ground that they need the protection, but this was characterized as "camouflage" and it was charged that the real purpose behind the measure was to get a constabulary force at the expense of the state to quell strikes. About the only thing which prevented it becoming a law was the fact that the $200,000 which would have been appropriated for the work was needed for greater accommodations in the state institutions.

Favor Potato Grading.—The potato growers of Monmouth County have gone on record, by a two-thirds vote, in favor of the compulsory grading of potatoes. The meeting was outcome of recent organization of the State Potato Growers' Association and was attended by seventy-five farmers. Some men thought it would be best to have the tubers sorted as they picked them up, others that the only way to sort potatoes for market was by running them thru a mechanical sorter on the farm, and another group of men said they believed the mechanical sorter was the solution, but that the sorting should be at the loading cars.—L.

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Burpee's Annual for 1918 lists some thirteen varieties of early, mid-season and late potatoes. We have been most fortunate in securing a very select stock of Green Mountain, which is probably the best known and most popular mid-season to late potato. An excellent variety for storage.

Last year many of our customers failed to get potatoes, by reason of late ordering. We advise everyone who contemplates planting potatoes to order at once to avoid disappointment. All varieties have been grown and stored under the most favorable conditions.

Seed Corn

Seed Corn of all varieties is short crop and extremely scarce. We have a fair stock of all varieties that we catalog, but can particularly recommend our select strain of Cloud's Yellow Dent, Improved Leaming; Reid's Yellow Dent and White Cap Dent.

CORN like the potatoes should be ordered at once to avoid disappointment. Write today for Burpee's Annual, The Leading American Seed Catalog. Just ask on a postal card for the Burpee Book No. 44

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These tools do the work of 3 to 6 men

One man can cultivate 3 to 6 times the usual acreage with Planet Jr implements. They are so designed and constructed that with greatest ease they do thorough, rapid cultivation. You save time, labor, money, cut down living expenses, and increase the food supply.

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New 72-page Catalog, free! Illustrates Planet Jrs in action and describes over 55 tools, including Seeders, Wheel-Hoe, Horse-Hoes, Harrows, Orchard-, Beet- and Pivot-Wheel Riding Cultivators. *Write for it today!*

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We pay for sound or mendable 100 lbs. Feed Bags, 10c each; 150 and 200 lbs. Bran, 15c each; Phosphate bags (not rotten), 8c each. We can use any size, any quantity. We pay freight and send returns promptly. Try us. Write to-day for tags and shipping instructions.
BUFFALO BURLAP CO., BUFFALO, N. Y.

Fertilizing The Orchard—I

Some Reasons for Intelligent Feeding of Trees

By SHELDON W. FUNK, BERKS COUNTY, PENNA.

Fertilizing is one of the most important of orchard operations, and still it is usually neglected except by the big commercial growers. For some reason or other a great many people seem to think that a fruit tree does not need to be fed. Apparently they think that the tree has a lot of soil in which to gather up its own fertility and does not need any additional manure or fertilizer. They forget, however, that this tree remains in the same place for a number of years, and that a heavy crop of apples, for instance, requires as much fertility, with the exception of phosphoric acid, as does a good, average crop of wheat. We would not think of trying to grow wheat in the same soil year after year without feeding it, but we try to make our fruit trees bear year after year without being fed. The result is that our yields decrease and instead of getting a crop of fruit every year, we get a crop every other year or every third year.

From a financial standpoint the purchase of manure or a good commercial fertilizer for the orchard is one of the best investments we can make. Good feeding in the bearing orchard is absolutely essential if we would have a crop of fruit every year. The bearing tree must not only have sufficient fertility to develop its crop of fruit, but it must also have sufficient energy left to develop fruit buds for the following year, or there can be no fruit.

The exact amount of nitrogen, phosphoric acid and potash which will produce the most economical gains can only be determined by experimenting, and the good orchardist is constantly experimenting with the idea of determining what amount of the different elements will give him the largest net returns. Altho the most accurate results can only be secured by long years of experimenting, much can be determined by the general appearance and condition of the trees. In other words, the man who understands the language of his trees can determine pretty definitely what his trees require to give him the best results. Unless he does understand this language, he can never expect to receive the highest returns.

Fertilizing the Apple Orchard

The apple is our most important fruit in Pennsylvania, and it usually gives the largest returns from proper fertilization. You will understand that no two apple orchards will respond in the same manner to like applications of either manure or commercial fertilizer. The kind of fertilizer will depend almost entirely upon the nature of your soil, the general condition of the orchard, the age of the trees and the size of the crop for that particular year.

We know that to secure the largest yield we must have a certain amount of new growth each year, and this new growth is usually our best indication as to the amount and kind of fertilizer to be used. In my own orchard, I want from eight to fifteen inches of new growth each year over the tops of my bearing trees. With the trees making that much new growth each year, I know that I am supplying sufficient fertilizer to not only develop the current crop of fruit but also the fruit buds to furnish the crop for next year. If my trees are making less than eight inches, it shows pretty plainly that there is something lacking, and it is up to me to find the cause. If, on the other hand, they are making much over 15 inches of new growth, I know that I am using too much nitrogen and my crop is likely to be not only smaller but also poorer in quality and color because of an excessive amount of wood growth. Under these conditions, my trees are also far more susceptible to the attack of fire blight than if they had not been growing so vigorously.

Without carefully examining the bearing trees, you may easily be deceived. There are thousands of old apple trees in Pennsylvania which, instead of making eight inches every year, have not made that much growth in ten or twelve years. You may think that a rather strong statement, but it is true and I have seen them all over this state. If you have any old apple trees in your orchard that are not making more than from one-half inch to an inch of new growth each year, you should be ashamed "to look them in the face", because it is very evident that you are starving them to death; and still you expect a crop of apples every year. We simply can not afford to starve our apple trees, because it is uncommon, even under our present abnormal fertilizer conditions, for 25 to 40 cents' worth of fertilizer to give an increase of from 10 to 12 bushels of apples. You have probably been deploring the fact that you didn't have foresight enough to buy war stocks at the right time, and now you have an even better investment on your farm which you refuse to recognize.

Young apple trees not yet in bearing can not, of course, show the net return from the use of fertilizer that the bearing trees do. In fact, where the soil is very fertile, frequently no fertilizer at all is needed for them. On the other hand, where the soil is very thin, they will respond very well and here they should be fed each year as it is economical to grow the trees as rapidly as we dare.

Manure or Fertilizer

Whether manure or commercial fertilizer is to be used as the carrier of fertility will, of course, depend almost entirely upon local conditions. It has been proved pretty definitely by experiments that, excepting under certain conditions, there is very little difference between the results secured from the use of manure and those secured from the application of commercial fertilizer. Where the fertilizer is not turned under or cultivated into the soil, but allowed to remain on top until carried down by rain, we would naturally expect slightly better results from the manure because of the organic matter present which would act as a mulch. Ordinarily the price is an important consideration in determining what fertilizer to be used. If you have plenty of manure on your farm, use it; you cannot get anything better. If you must buy your fertilizer, then buy commercial fertilizer because you can supply the fertility in the form of commercial fertilizer for about one-half of what it would cost in the form of manure.

This is a point infrequently considered. Occasionally we hear a man claim that he receives better results from an application of manure than from an equal number of pounds of fertility in the form of commercial fertilizer. This may be true, but you will find that the manure has cost him more money and usually, if the same amount of money was applied in form of fertilizer, the results would be turned around. The majority of farmers have considerable manure, but still not enough for all of their farm operations. In this case, I think it is always best to use the manure on the general farm crops and the commercial fertilizer in the apple orchard. The organic matter secured from the manure seems to be more essential for the field crops than for the orchard.

Commercial Fertilizers

Where the fertility is to be secured from commercial fertilizer, the best analysis to be used, as well as the amount, will depend upon the general condition of the soil and the trees. This can only be determined by experimenting, but in most sections in Pennsylvania. nitrogen and phosphorus are the elements of fertility which give the largest returns. This is rather fortunate, especially at the present time. because of our shortage in potash. Therefore, when discussing fertilizers this year, we can omit the potash because at the present price of $6.25 per unit, it would not pay to use it in the orchard, even if it were possible to get as much as you wanted.

Because of a general deficiency of phosphorus in practically all of our Pennsylvania soils, I think it well to carry at least 10 percent of phosphoric acid in your fertilizer for the apple orchard. The nitrogen content will, of course, vary more with soil conditions, but ordinarily you should carry from 5 to 7 percent, depending upon the growth the trees are making.

The amount to be used is largely dependent upon the age and size of the trees. If they are in full bearing, from 300 to 500 pounds of manure per tree should be sufficient. Care should be taken not to use too much manure because of the increased danger of fire blight. I use the above commercial fertilizer at the rate of from 400 to 600 pounds per acre on bearing trees. In a matter of this kind it is impossible to give the exact number of pounds, but a rule that will act as a guide is one pound of the mixture per tree, per year in age. In other words, a fifteen-year-old tree should receive in the neighborhood of fifteen pounds.

The time of application will depend very largely upon the carriers used in making the commercial fertilizer and my carriers are determined largely by the price of the various materials. In years when there is very little difference in price between the cost of a unit of nitrogen in the organic form and a unit in the nitrate form, (a unit being one percent or 20 pounds), I usually take half of my nitrogen from animal tankage and the other half from nitrate of soda, because it becomes available over a longer period of time. However, under present conditions, with organic nitrogen costing about $9 per unit (and almost impossible to get at that) and nitrogen in the form of nitrate costing from $5.50 to $6.50 per unit, I am going to carry almost all of my nitrogen in the form of nitrate of soda, and by applying it a little later in

FOOD SUPPLY

The Link Between Your Farm and the Battle Front

Every farmer in the country plays a part in winning the war against autocracy and tyranny. How vital, how important a part he plays depends upon himself.

The link between your farm and the battle front is the food supply. Upon the strength of this link depends victory.

Your war service consists in operating your farm in the most efficient manner—increasing its output in every way possible.

If yours is an average farm, worked under average conditions, one way in which you can increase production and decrease cost is by using

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During the past few years dynamite has proved its worth on thousands of farms. Its use has resulted in bigger crops of wheat, corn, and other food staples to say nothing of the time and money it has saved in connection with drainage and land clearing work.

If You Are Short of Fertilizer The shortage of fertilizer may be met by clearing new land which has not become sterile through constant working. This virgin soil is often the richest land that can be obtained and will grow certain crops without fertilizer for a number of years.

If You Are Short of Labor Shortage of labor may be a serious difficulty with you, so much so that the clearing of new land seems impossible. In this connection, however, remember that the use of dynamite for stumping, drainage work, etc., means a great saving in labor. You can accomplish with dynamite what you could not with hand power alone.

The use of Hercules Dynamite on the farm means more efficient and less expensive farming from many standpoints. Our book, "Progressive Cultivation", goes into the question thoroughly. You will find it interesting reading. A copy will be sent free on request if you will fill out and mail the coupon below.

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Gentlemen:—Please send me a copy of "Progressive Cultivation". I am interested in dynamite for______

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Pedigreed Yellow Dent Seed Corn

OUR yellow dent corn is pedigreed and the finished product of careful selection and continuous beeding and has yielded as high as 102 bushels dry shelled corn per acre. Write for prices and descriptive pamphlet. Order early. Write NOW. Supply is limited.

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Pennsylvania Farmer 261 S. 3rd St., Phila.

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For our "land's sake," it is not enough to conserve food and fuel. We must *produce* food as well as produce fuel.

One way to increase production is to increase the crop acreage. Another way is to increase the crop per acre.

Most farmers will choose the latter method, for with the aid of good fertilizers the labor at hand will yield the greatest possible profit. Bowker's Fertilizers have been helping farmers in this way for forty-five years. *Join the army of farmers who are using Bowker's Fertilizers for their "land's sake."*

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Hoffman's Seed Oats

Unstained—not sprouted—sound—white—clean—SIX VARIETIES—*both "side" and "tree" types*—all heavy yielders. List includes the famous "White Tartar"—"Bumper Crop"—also pure strain of "Swedish select." These Oats will increase your yields.

1918 Seed Book

Offers seeds for every farm crop and tells how to grow them. Specializes in Alfalfa, Soy Beans—Field Peas—Seed Potatoes—Seed Corn for silage and cribbing. Hoffman's Seed Book is sent free with oats and other samples if you mention this paper. Write today.

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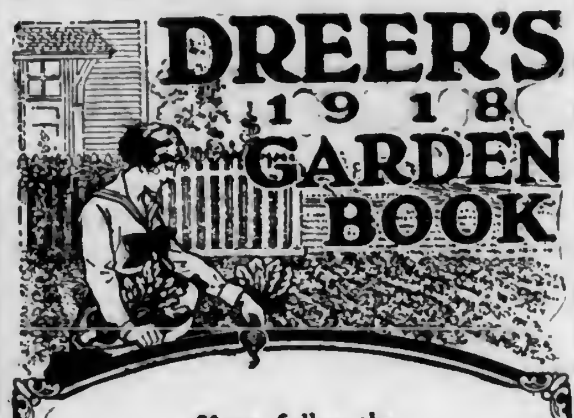

If you follow the instructions in our Garden Book your garden is almost sure to be a perfect success, while if cared for in a haphazard way the result is likely to be a failure. 256 pages; four full-page color plates and four full-page duotone plates; also hundreds of photographic illustrations.

A copy free if you mention this publication.

Dreer's Excelsior Beet
Rich blood red and fully as early as any of the turnip shape beet, beside retaining its tenderness and exquisite quality the entire season.
Packet 10 cts., oz. 30 cts.

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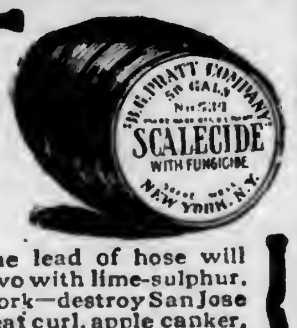

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Would it help you in the spring rush to save one man in putting on the dormant spray? Use "SCALECIDE"—one lead of hose will spray as many as two with lime-sulphur. And you do better work—destroy San Jose scale, also control leaf curl, apple canker, collar rot, bud moth, case bearer, leaf roller, pear psylla, etc.
"SCALECIDE" is pleasant to handle—will not injure hands or eyes nor remove hair from horses. Spraying pump runs in oil—lasts much longer. Sold on Money Back Basis. *Send at once for booklet No. 14.*

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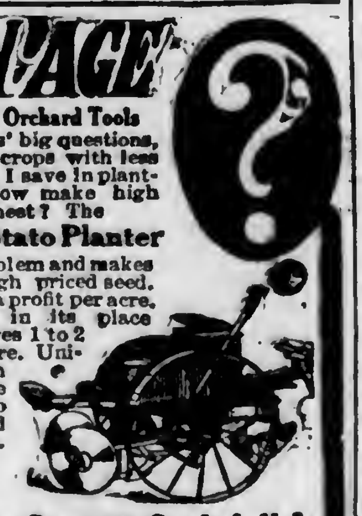

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Farm, Garden and Orchard Tools
Answer the farmers' big questions, How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The **IRON AGE Potato Planter** solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

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PLANT FINN'S TREES **FOR PROFIT**

Mr. Planter if you are going to plant out an orchard this spring be on the safe side by planting my Guaranteed Trees. True to name, free from disease and packed so as to reach you in perfect condition.

	Each	10	100
See 2 yr. 6 to 7 ft. x x x Apples. Plums, Pears	$.30	$2.50	$18.00
2 Medium size 5 to 6 ft.	.25	2.00	15.00
Sweet & sour cherries xxx 6 to 7 ft.	.35	3.00	24.00
Quinces xxx 4 to 6 ft.	.30	2.50	22.50
Medium size 3 to 4 ft.	.25	2.00	18.00
Peaches 1 yr. 5 to 6 ft.	.20	1.80	12.00
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Send for Free Price List of our leading varieties of small fruits and ornamentals.

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Tells how to cut living cost through productive gardens. Why our Pure, Tested Farm, Garden and Flower Seed grows the biggest crops—the finest flowers. A beautiful 112 page book in colors: Describes new 1918 varieties vegetables and flowers. Handsomely illustrated; beautiful home grounds, flower and vegetable gardens, landscaping, shrubbery, orchards, farms. Veritable dictionary on gardening! Flower lover's delight! Berry-growers' book! An orchardist's manual! Plan your 1918 garden from this valuable book.
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ONE MILLION
California Privet and Asparagus plants. Millions of trees and shrubs, etc. Healthy; true to name; quality high; price low. New Planters Price List ready.
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the spring, except to get practically as good results.

Heretofore 16 percent acid rock has been our cheapest carrier of phosphoric acid but this season phosphoric acid, in the form of bone, is about 25 cents per unit cheaper than in the form of acid rock and therefore I am carrying about 5 percent of phosphoric acid in the form of bone and the other 5 percent in the form of 16-percent acid rock. This makes a mixture that is a little more pleasant to apply than if we were to use bone entirely. I will not apply this material until the leaves on the apple trees are fully developed, so that they are in a condition to take up the available nitrogen at once.

If manure is to be used in the orchard it is best to apply it in the fall of the year or sometimes during the winter so that it becomes more readily available by next summer. A great many men make a serious mistake in applying the fertilizer too close to the tree. Remember there are no feeding roots close to the trunk, and fertilizers can do no good there. If the trees are large and in full bearing, stay away at least six feet on all sides from the trunk and be sure to spread the fertilizer from three to five feet beyond the spread of the branches. The feeding roots are far away from the trunk and that is where the fertilizer is needed. In fertilizing young trees, the fertilizer must necessarily be applied closer to the tree.

Cost of Fertilizers

In figuring the cost of this fertilizer under present conditions, we find that it costs from 40 to 50 cents to feed an old tree with commercial fertilizer and about 80 cents with stable manure. We can readily see that we simply cannot afford to neglect feeding the apple orchard. From 40 to 80 cents under the present conditions is the equivalent of from a peck to a half-bushel of apples. Therefore, if our increase in yield were only a half-bushel per tree, the fertilizer would be paid for; but as stated before, an increase of 8 to 10 bushels per year is nothing unusual.

According to very careful experiments, the additional yield secured by fertilization is due, not so much to an increase in size of fruit as it is to a stronger and better bud development which naturally produces a heavier set of fruit. The size of the fruit seems to be determined largely by the moisture conditions and the number of fruits on the tree. For that reason, manure, or any other material used as a mulch, has a tendency to give a larger increase in size than would be secured from the use of commercial fertilizer.

Fertilization does not seem to have any effect upon color except in an indirect way. We formerly believed that the use of potash was conducive to higher color on fruit, but now we know that color is mainly dependent upon sunshine. For that reason, the fruit on trees which have been fed very heavily on nitrogenous fertilizers tends to run low in color. First, because a heavier leaf and wood growth is secured, which naturally tends to shade the fruit more or less; second, this heavier growth causes the fruit to mature later in the season. This condition can be overcome by allowing the fruit to hang longer, or in other words, until it has fully matured, then it will have the color.

The question as to whether or not lime should be used in the apple orchard is very frequently asked. We must remember that lime is not ordinarily a fertilizer, and, as we always have sufficient lime in the soil, as far as the needs of the trees are concerned, it gives no direct results in the orchard. If, however, we are anxious to get a legume started in the orchard, which is always advisable, and the soil is too acid to grow leguminous crops, then lime should be used to correct the acidity in the soil and in that way it will prove very beneficial.

SAVE OLD SEEDS

Garden seeds for the coming season are scarce. A recent Dept. of Agriculture report showed an average shortage of about 40 percent in the common varieties of garden vegetables, and the price is advanced over last season's price about 60 percent. Many gardeners were foresighted enough to save their own seed of some kinds of vegetables last summer, and these growers are indeed fortunate. A great many gardeners bought more seed than they needed last year, and had a considerable amount left over. J. T. Rosa, Jr., of the Missouri College of Agriculture, suggests that such left-over seeds be carefully taken care of, for with the scarcity of new seeds, the left-overs may be very useful. Altho it is usually advised to get fresh seeds each year, this is not at all necessary with many garden vegetables, which retain viability for several years if stored under good conditions.

The following list shows the number of years which seed of some vegetables will retain their vitality: Beans, 3; beet, 6; cabbage, 5; carrot, 5; celery, 8; cucumber, 10; egg-plant, 6; lettuce, 5; melons of all kinds, 5; okra, 5; parsley, 3; pea, 3; pepper, 4; pumpkin, 4; radish, 5; spinach, 5; squash, 6; tomato, 4; turnip, 5. Seed of other vegetables not mentioned here are short-lived, and should never be carried over more than two years. Since seedsmen often carry their seedstocks over one or two seasons, it may not always be safe to count on the full life of seeds as mentioned. Then, too, older seeds may be somewhat weaker, and, therefore, should be sowed thicker and more carefully than fresh seeds. However, old ones are valuable this year, and every one who has any should plant them. In some cases such as cucumbers, older seed are thought even better than new stock.

EFFECT OF POTATO GRADING REGULATION

I was much interested in Waid's recent article on the Michigan potato situation. I have often discussed it with him. I believe that he misses the most important point of the whole trouble. I have carefully watched the potato quotations and notice that both in Michigan and in Wisconsin the adoption of the new grading was not followed by any increase in prices to the growers for the new No. 1 grade. The result of this was that the grower formerly had as follows:

100 bushels at 75c bu	$75.00
Under the new grading:	
75 bushels at 75c for No. 1 ..	$56.25
15 bushels at 45c for No. 2 ..	6.75
10 bushels at 30c for culls, if he could use them	3.00
Total under new grading ...	$66.00

This shows a loss of $9 in consequence of grading. — Daniel Dean, Tioga Co., N. Y.

WHICH PAYS BEST?

More Potatoes And Better Ones

It was discovered long ago that potatoes produce more heavily when sprayed with a suitable fungicide.

The New York Experiment Station says—"It does not pay to spray for bugs alone." Their ten years' experiments with fungicides show an average yearly gain of 97½ bushels of potatoes per acre. A nineteen-year test at the Vermont Station shows an average yearly gain of 109 bushels per acre.

Spray to prevent blight—it pays.

Bugs are bad, but blight is worse although the spores that cause it can be seen only under a powerful microscope.

When you spray only with poison you are not getting the return you should for your work. You need a fungicide also.

PYROX is both a poison and a fungicide. It kills the bugs and flea beetles, prevents blight, invigorates the vines, imparts a rich green color to the leaves, and gives the little potatoes a chance to become big ones.

Spray with **Pyrox** It Pays
REG. U. S. PAT. OFF.
TRADE MARK REGISTERED

Pyrox is a smooth, creamy paste, ***all ready to use by mixing with cold water.*** Just measure it out, it mixes easily and saves time and labor at the busiest time of the year. In a letter to a friend, the Editor of "The Fruit Belt" says: "I have made up many thousands of barrels of spray mixtures on the farm, and I can say to you I have mixed my last barrel. I now use Pyrox."

Pyrox is as good for apples, tomatoes and other fruits and vegetables as it is for potatoes.

Most good agricultural supply dealers sell Pyrox. Last year the demand for Pyrox exhausted the dealers' supplies. Why not see your dealer at once about your supply? If he does not handle Pyrox be sure to fill in his name when mailing the coupon below.

BOWKER INSECTICIDE COMPANY
BOSTON AND BALTIMORE

"IRON AGE" MANUFACTURER USES PYROX

Mr. Fred H. Bateman, who is at the head of the company manufacturing the well-known "Iron Age" tools, is a real farmer. October 25, 1916, he wrote: "I investigated the merits of your Pyrox and this season have used four tons or more. I used it on potatoes, cucumbers, strawberries, cantaloupe, grapes and watermelons, with very satisfactory success."

BIG YIELD DUE TO PYROX

J. C. Carver & Co., Marumsco, Md., write: "We used Pyrox on our potato crop and got a big crop—110 barrels to the acre. They kept green all the time, although we had a long drouth. We attribute our large yield to Pyrox."

Avoid Blight and Bugs! USE THE COUPON! ☛

Please send me the Pyrox Crop Book. 28 D 15
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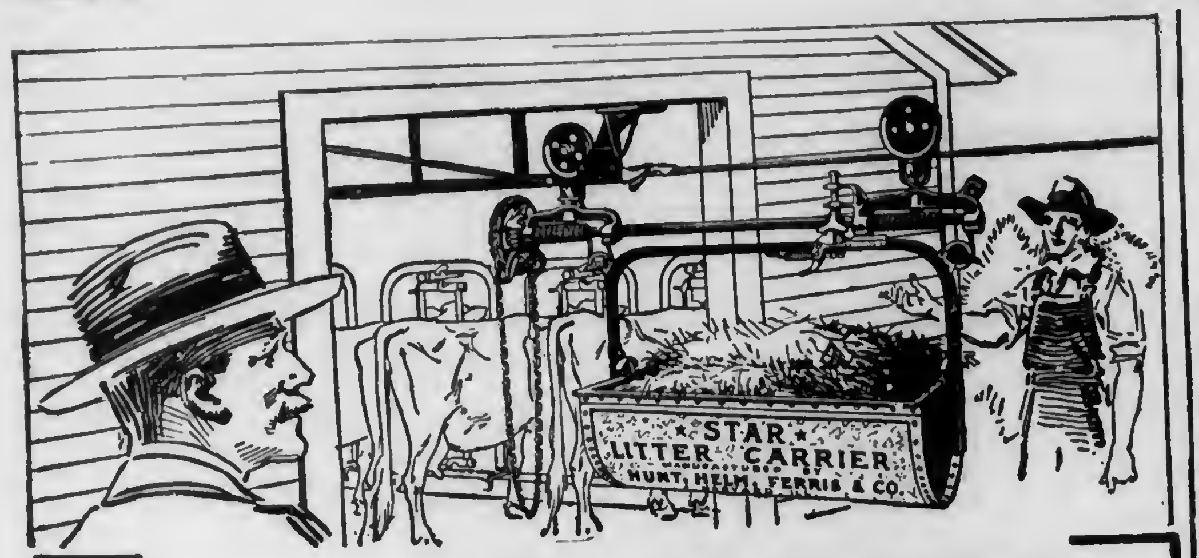

Compare The STAR With Other Litter Carriers

We know what will happen when you compare STAR Litter Carrier outfits point by point with other makes. And on that knowledge of the advantages found only in STAR goods, we invite and welcome competitive inspection.

You're probably considering putting in a Litter Carrier outfit right now. You realize that it takes the place of two men and does away with side straining, back-breaking drudgery.

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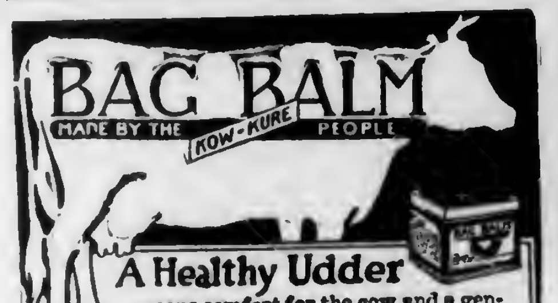
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LACTANT
TRADE MARK

Selecting A Grain Ration

Points That The Dairy Cow Will Pay On

By CHAS M. COMMINGS, PENNSYLVANIA

In making a suitable grain mixture for a dairy cow several factors need to be taken into account. We cannot mix together several grain products having a small cost per ton, and say that we have an economical grain ration, without considering carefully several factors all of which are important.

Palatability

As the proportion of feed available for milk production is dependent upon the quantity consumed it is obvious that palatability is of prime importance. Unless the grain ration is relished, the cow will not eat enough to reach or maintain a maximum flow of milk, consequently unpalatable feeds should be mixed with those which are appetizing. Concentrated feeds may be classified as follows:

(a) Palatable Feeds. — Wheat bran, corn meal, corn-and-cob meal, gluten meal, gluten feed, hominy, dried beet pulp, oil meal, ground oats.

(b) Unpalatable Feeds. — Cottonseed meal, dried distillers' grains, malt sprouts.

First Cutting of Grim Alfalfa on Bradford County Farm

Bulk

The digestive system of the dairy cow is of such a nature as to require ample distention for its proper functioning. Such a ration then should be fed as will bring about this condition in order to keep the animal in good health and insure efficiency in the digestive process. As a matter of fact, however, when plenty of good hay and corn silage is available it is not absolutely essential to have a grain ration carrying much bulk, especially if, in feeding, the concentrates are placed on top of the silage. A good rule to follow is to have one-third of the concentrates by weight comprised of bulky feeds. Concentrates may be classified as follows as to bulk:

(a) Concentrates Which Have Bulk.—Wheat bran, corn-and-cob meal, gluten feed (slight), ground oats, dried distillers' grains, dried beet pulp.

(b) Concentrates Lacking in Bulk.—Cottonseed meal, gluten meal, corn meal, oil meal, peanut meal, flour wheat middlings.

Variety

Variety implies both factors just mentioned and is very important because adequate mineral matter and variety of protein must be provided if production is to be maintained at a high level. Mineral matter is vital in bone repair and bone building and to the supply of the mineral constituents of milk. The safe plan, therefore, is to use three or more feeds in the grain mixture which come from different plants as, for example, wheat bran, linseed meal, cottonseed meal, and corn-and-cob meal.

Effect on Health

A few feeds are highly prized for their tonic effect; that is, their cooling laxative action on the digestive system. Wheat bran and oil meal are particularly desirable components of a dairy ration because of their palatability and beneficial physiological effect. A concentrate which is constipating and should be fed in limited amounts, especially when the only roughages employed are timothy and corn stover, is cottonseed meal, altho this concentrate is usually a very economical source of protein.

The Nutritive Ratio

The constituents of feeds may be divided into two general classes according to their function in the animal body.

Proteins.—These substances serve their purpose in building muscle, bone and hair and in supplying the material from which is made the proteins contained in milk; collectively they are spoken of simply as protein.

Fats and Carbohydrates. — This class of substances supplies heat to keep the body warm, fat which is stored in the tissues as body fat, material which goes into milk as butter fat, and energy to support the vital functions. They are the so-called fuel foods.

The dairy cow in order to be kept in thrifty condition and at the same time have a sufficient amount, without excess, of materials from which to manufacture the protein, milk sugar, and butter fat of milk, must receive the two classes of substances just named, in a certain ratio. The required ratio of nutrients may be easily ascertained by referring to any one of the three more widely used feeding standards: Hecker, Savage, or Armsby.

It should be remembered that the cow can not change the composition of her milk at will and that if either of the above-mentioned classes of feed constituents is deficient in amount, a reduced yield of milk becomes a certainty. On the other hand, any excess of protein or fuel food is an absolute waste so far as milk production is concerned.

Cost

Too many dairymen buy dairy feeds on the sole basis of the price per hundred or the price per ton, giving little attention to the actual food value. For example, cottonseed meal might be rejected because of the high price per ton altho it is almost always a cheap source of protein. The cost of a hundred pounds of protein in cottonseed meal at $60 per ton is less than the cost of the same amount of protein in dried brewers' grains at $33 per ton. This is used simply as an illustration to show that the composition and not the price per ton should be the deciding factor unless a feed is desired especially for its palatability, bulk, tonic effect, or to add variety to the ration. Choose the protein feeds which furnish protein at the smallest cost and the fuel feeds, fats and carbohydrates which supply net energy at the lowest cost per therm—always taking into consideration the other five factors named above.

In the present crisis, the slogan is increased production and conservation of food. The dairyman can comply with these demands as well as increase his profits by selecting the grain ration which embraces palatability, balance of nutrients, bulk, variety, beneficial physiological effect and economy.

Interstate Ass'n Notes

Feed Supplies

The Interstate Milk Producers' Association has been interesting itself in helping members to secure dairy feeds. Many of the staple feeds are very scarce, and in sections are off the market entirely. Co-operative ordering thru the Association has been developed to some extent, and there have been some good results from the introduction of new or substitute feeds. Considerable quantities of unground linseed meal and cocoanut meal are manufactured thruout the East, and these feeds can be utilized by eastern dairymen at a saving of heavy freight charges. The Interstate officers have given some assistance in the introduction of these feeds into local dairy centers, and stand ready to extend the service.

There is general disappointment that the new food regulations, announced by the Federal Food Administration, have not resulted in reduced prices to the farmers in the East. Local regulation is necessary to control the numerous operations in the normal market between the manufacturer and the consumer. Prof. Rasmussen, as agent of the State Food Administration, is now working on such local regulation. It is understood that he has the authority to enforce specific regulation of charges on bagging, brokerage, retailing, etc. It is expected that an early announcement will be made of such regulations. In view of this fact it may be well for farmers to defer heavy purchases until it may be determined if lower local prices may be obtained.

Increasing Consumption

The federal and local Food Administrators are advocating increased consumption of milk as a conservation measure. The Interstate Association is assisting this work thru the services of a paid demonstrator and speaker on uses of milk. Miss Elenor

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365 Acre Farm in Buckingham Co., Va., 200 acres tillable. Ready to plant apple trees. 80 acre acorn orchard, fenced for hogs, 6,500 (half cash). 200 acres Central New York, $4000; 30 acres Connecticut, $3500; other smaller farms.
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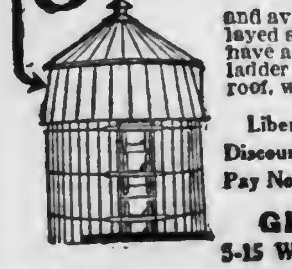

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Also get our offer on Climax Silo Fillers and Bidwell Threshers.

S. Brinton, of Chester County, is employed by the Association, and is giving talks and demonstrations before the schools and civic clubs of the city. This is a new line of work that promises to yield very satisfactory returns. Other interests connected with the milk and general dairy business are co-operating in an extensive milk consumption campaign in Philadelphia, and it is likely that the effort will be extended to other sections of the state. The value of milk as a food has never been fully appreciated, and the present campaign should do much to give it the place in the diet that its food value justifies.

CO-OPERATIVE BUYING OF FEED

Dairymen must learn to co-operate more in the purchase of feeds if they are to cut production costs. Feeds can be bought much cheaper by the carload and it is entirely possible to order in this way in any section where dairying is an important industry.

Having secured orders to the amount of a carload, let someone in the neighborhood send for it, taking care always to deal with a reliable company. The company will send a sight draft to the bank but will grant inspection of the contents of the car before payment is made. Arrangements can easily be made with the bank so that the unloading can begin at any time. Purchasers should pay at the bank, take a receipt for the amount and present it at the car when the feed is delivered. In making change at the car, losses are liable to occur, and when they do occur the burden is likely to rest upon someone who has given a lot of time and labor already in promoting the welfare of his neighbors.

There are no large dairymen in this section. Nevertheless we feed concentrates liberally. Last year we wanted some cottonseed meal. Being unable to use a carload we combined with a party living 10 miles south of us. We ordered a carload delivered at a station between the two points and unloaded it without the least difficulty. In many localities there are local creamery companies that might conveniently order the feed for their patrons. Two points would be gained by an enterprise of this kind. First, they would get the feed at the lowest market price, and, second, they would find the interest in their creamery increasing.—J. P. Fletcher, Montgomery Co., N. Y.

GET RID OF THE BRIERS

In many fields, pasture lots, and along fences we find clumps of briers and scattering bushes that start up each year. Unless we keep them destroyed we are bound to spend much more costly labor later on when we are forced to get rid of them. It appears as if a portion of the original wildness of the soil were yet unconquered, for if we leave such growths undisturbed we will have a growth in a few seasons that will be an eye-sore to the farm.

The only best time to deal with briers and bushes is when they start. They are then easy to conquer. Very many can be pulled by hand at this stage if the ground is wet. By using the mattock we can grub them out at one stroke, while if left until a year or two later they will be difficult to cut and we allow more opportunity for them to sprout again and make more trouble.

When March comes and the frost leaves the ground and the ground becomes just a little too wet to do anything else, then is an ideal time to shoulder the mattock and get busy. The blade will sink easily and much less effort is required to grub, or even pull briers and bushes than when the ground becomes settled. Here is my way. I simply bend the bush over, place my foot on it and one stroke with a sharp mattock does the rest. We generally carry a fork to pile the brush out of the way to be burned when dry enough. One is agreeably surprised how soon the grass takes possession of the space thus cleaned. Much space can be utilized as pasture in this way that would otherwise be of no use.

We find that one hand can clean up an acre of land per day if the brush grows only sparsely. Suppose the pasture were seriously impaired thru the growth of brush, and the clearing of it would restore it to normal conditions. How much would a day's clearing be worth? Pasture here is worth not less than $2 to $2.50 per month for an acre. Counting 6 months pasture we get $12 to $15. Not bad for a day's work on the farm.—W. E. Farver, Holmes Co., O.

MILK YIELD KEPT UP BY FEEDING LEGUMES

Cows may be expected to maintain their milk yields in winter as well when fed legumes, like clover, alfalfa or soybean hay, along with some grain, as when given a different kind of roughage with comparatively large quantities of grain. Such home-grown feeds make milk production cheaper than when grains must be bought. The legumes fit in well in farm practices; they increase soil fertility, and they supply protein and mineral matter, essentials to growth and milk production, in larger quantity than any other class of roughages.

Cows fed soybean hay with a little grain and corn silage in two feeding tests conducted at the Ohio Experiment Station kept up their milk flow as well as other cows fed mainly grain along with some corn silage and stover. Twenty cows were fed in the two tests extending over 137 days. The same conclusion was drawn from another test with six cows fed mainly alfalfa hay in one lot and largely grain the second. The legumes were able to replace such high-priced concentrates as cottonseed meal and bran and the cost of the milk was thus reduced.

Where legumes are not available this winter, such concentrates must be fed along with the poorer roughages if maximum milk yield is obtained. Plans can be made now, however, for growing legumes next season. Clover has proved practically as valuable as alfalfa hay for dairy cows when fed in equal quantities and with home-grown grains. Either crop started next spring will produce hay in 1919. Soybeans planted in May or June can yield a hay crop or two to two and a half tons per acre next summer. Some home-grown feeds, such as corn and oats, when fed with the legume hay will tend to lower the cost of milk production.

Under new food regulations, the Swiss people are allowed only one pound of sugar per month per person. The butter ration is one-fifth of a pound per month.

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$5.00 per bu. in lots not less than five bu. Sacks 45 cents extra. Potatoes, $5.50 per sack 165 lbs.

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Spray with an "EVER-READY, JR." (Power Sprayer)

Leading fruit growers have sworn by it for years High quality 2 H. P. engine, 100-gallon steel-bound tank, 2 cylinder high pressure spray pump, and a mighty good engine for other work.
Write to-day for descriptive booklet and prices.

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Apple, Peach, Pear, Cherry and all kinds of Fruit Trees and berry plants, of the very best varieties. All kinds of Shrubs, Roses, Climbing vines, and our famous everbearing Strawberry plants, bear till frost, a dozen plants free with your order. Money back if not as represented. Seeds, 2c package. Catalogue Free.

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GOVERNMENT SEEKING FARM LABOR

Extensive Labor Employment Service

The U. S. Department of Labor has just announced extensive plans for helping supply laborers for the farms for the coming season. The Department has made arrangements to utilize the Post Office Department of the country, together with the rural mail carriers, and will thus have a system of 100,000 government employes acting as labor agents. A simple plan is announced which, if labor is available as the Department says it is, should be of great assistance. The plan is briefly as follows:

Each rural carrier and every postmaster will be supplied with application blanks which farmers needing help can fill out. The farmers are asked to fill out such blank stating wages offered, length of employment offered, character of farm work to be performed and the living conditions offered. These blanks need only be dropped into the rural mail box. The carrier will take them to the local post office where the local postmaster, being an agent of the local farm labor office, will endeavor to fill the calls from the available local supply. If he is unable to do so he sends the application to the nearest larger postoffice that has been designated as a district office, which will draw on the surplus workers in the nearest towns and cities. As applications are received, the postmasters will display a notice in the office, stating the number of men wanted and the wages offered but omitting the name of the farmer desiring the help.

In addition to the blanks for farmers, each postmaster and carrier will have blanks for applicants for farm work. These will be handled in a similar way. The extent of the system can be appreciated when it is remembered that there are about 55,000 fourth-class post offices in the country, each of which will act as branches of the Employment Service. In addition, there are nearly 44,000 rural carriers. The county agents of the country will also act with the postal officials in this work. The Department says of its plan:

"The success of the farm labor supply system depends almost entirely upon the co-operation which the farmer himself gives. He must notify the local postmaster of his labor requirements in time."

LITTLE HOPE IN GERMAN STRIKES

Your editorial, "The Outlook", in Feb. 2 issue is very good except the third paragraph. I want to protest against hoping for benefits from German labor troubles. When you state that there are labor troubles, strikes and peace talk in the Central Empires, you tend to lull us into a feeling of security that we should not have. The people of this country should realize that we are facing a real crisis, and if the Central Empires have labor troubles, so have we.

Look at the wage controversy at Washington between trainmen and the Government. Don't you suppose that the German papers display that controversy? And yet we must meet that situation. W. G. Lee tries to put it onto the railroads, but he is not showing very patriotic himself just now.—A. R. S., Tompkins Co., N. Y.

Cheaper Labor and More Live Stock

The only way to reduce the cost of labor is to help the hired man produce larger crops. Experiment Stations have demonstrated that on corn, wheat and oats, as well as on sugar beets, labor can produce 50 to 125% more on fertilized land than it can on unfertilized land.

Fertilizers make it possible to increase the farm stock. Top-dress the meadows and pastures, fertilize your corn, and see for yourself how many more head the increased crops will carry;—how much you can save on your grain bill and how much more manure will be produced.

A. A. C. Fertilizers

pay for themselves in the big crops they produce; and the larger crops leave a larger amount of humus material in the soil to lighten it up, make it more friable and more retentive of moisture.

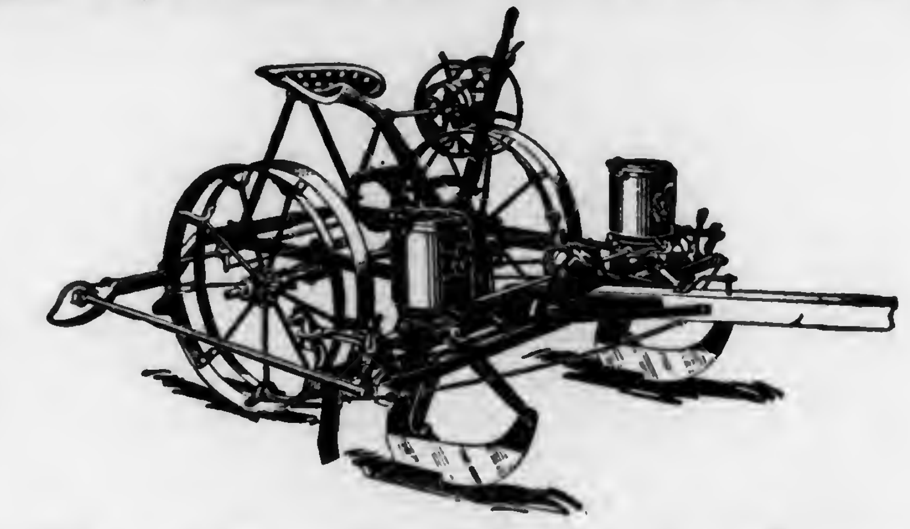
The rapid and steady increase in the use of A. A. C. Fertilizers has been because of their actual merit and demonstrated ability to produce profitable crops. They represent the accumulated manufacturing experience of more than fifty years.

They are compounded of organic and inorganic materials of recognized crop-producing power in such forms and proportions that they are capable of feeding the plant continuously. They cause a quick start, vigorous growth and early crop maturity.

If we have no agent in your town, we want one. Write us for our nearest agent's address or ask for an agency yourself.

The Company maintains an Agricultural Service Bureau conducted by Dr. H. J. Wheeler, for many years Director of the Rhode Island State Experiment Station, whose Crop Bulletins, services and advice are free to all farmers.

The American Agricultural Chemical Co.
2 Rector Street, New York, N. Y.
We serve our trade from 60 points. 41



Your Cornfield Tells the Story

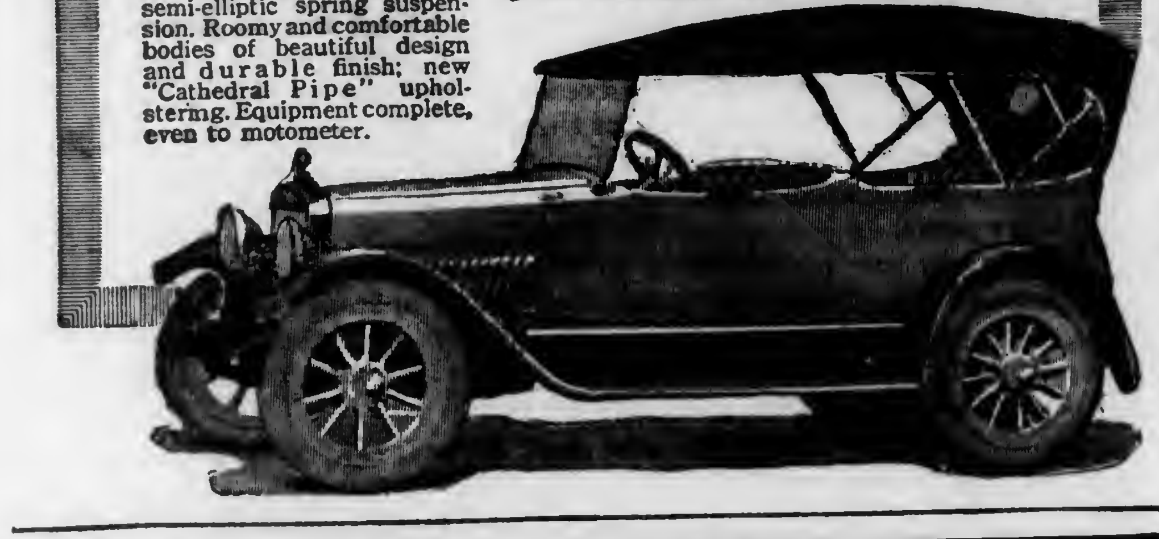
WHAT greater satisfaction is there than to look over a field of sprouting corn and see 2, 3 or 4 sturdy plants in every hill, just as you planted them? That is the kind of a start your corn crop gets when you use an **International** or **C. B. & Q. Corn Planter.**

These machines plant corn accurately, whether used with edge drop, flat drop, or full hill drop plates; whether the corn is checked or drilled. The drop clutch can be changed, while the planter is working, to drop 2, 3, or 4 kernels to a hill. The tongue is easily adjustable to the height of the horses. A handy foot drop lever makes head-row planting easy.

When you look over the **International** or **C. B. & Q.** planter, don't miss the automatic marker, a handy feature that saves a lot of work and time. There are fertilizer attachments if you want them, combination pea and corn-planting hoppers, open wheels or closed—your planter will be equipped just as you want it. You can plant rows 28 to 48 inches wide by 2-inch adjustments, with four distances between hills.

These planters are so good you will want to know all about them. Drop us a line and let us send you full information.

International Harvester Company of America
(Incorporated)
CHICAGO USA
Champion Deering McCormick Milwaukee Osborne



Stylish—Roomy—Easy Riding
With Fine Driving Qualities

You will like the look of the new Elcar models. The designs are original, different and strikingly graceful. The high-class paint work insures lasting beauty. Comfort and roominess are given special attention. Drive all day and you won't be cramped. Easy riding whether fully or partially loaded. Plenty of speed—abundant power for the hard pulls. The steering is the easiest—the control the simplest—the motor responsive and flexible.

ELCAR

Reliable quality is a certainty in the Elcar. We learned to put in quality years ago, when building cars selling up to and above $3,000. We give exceptional value in these quality cars at popular prices — each model large and good enough to fulfill any motor car requirement.

Don't think of choosing until you have seen the Elcar. Ask for nearest dealer's name, if you don't know him.

Brief Mention of Elcar Points
Four-cylinder models, 37½ horsepower at 2,100 r. p. m. Six-cylinder models, 40 horsepower at 2,100 r. p. m. Two unit electrical system. Long wheel base, 116 inches; road clearance 10½ inches. Full floating rear axle with spiral bevel driving gears. Timken Roller Bearings front and rear. Double universal drive; tubular propeller shaft. A wonderfully easy riding semi-elliptic spring suspension. Roomy and comfortable bodies of beautiful design and durable finish; new "Cathedral Pipe" upholstering. Equipment complete, even to motometer.

Catalog on Request
Write for catalog illustrating and describing the Six New Elcar Models — gladly mailed to all interested.

Elkhart Carriage & Motor Car Company
C-803 Beardsley Avenue Elkhart, Ind.

Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

Work in Joint Effort the Soil of the U. S. and Canada--Co-operative Farming in Man Power Necessary to Win the Battle for Liberty

The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do; farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service, Dept. of Labor

ASK YOUR DEALER BERG'S ANIMAL Bone & Meat Fertilizer BOOKLET BERG CO. PHILA.

You can get bumper crops without potash, like your father and grandfather did, if you use the same high grade bone and tankage fertilizer they used— Berg's Bone and Meat
Its high ammonia content, 4 per cent, produces better root growth. Its 17 per cent phosphoric acid makes it ideal for earlier, bigger yields on potatoes, corn and vegetables of all sorts.

Results prove it. Order through your dealer now—get the biggest yield from your acreage, at least cost.

The Berg Co., Ontario St. near Delaware River, Philadelphia

Poultry

WINTER POULTRY POINTERS

If good quality cockerels have not been produced for next year's breeding pens it is not too late to buy them now. A large part of the success with poultry this year will depend on the vigor and laying ability of the breeding stock. It is a discouraging business trying to raise large flocks of poultry with poor breeding stock.

Frozen mangels are not good feed for poultry. If any are frozen they can be sliced and boiled and then the fowls will eat them readily. In the winter boiled vegetables of all kinds are fine to keep the birds in condition. Some breeders use large iron kettles in their feed rooms for boiling waste vegetables, cull beans or oats and they find that it helps to keep down the feed bills.

Empty the water pails every night in freezing weather. Hardware is expensive now and if ice must be pounded out of pails every morning they are soon leaking and of no value.

The use of oyster shells, charcoal and grit is constantly recommended for keeping hens in the best of condition and on many farms they are seldom supplied. It is one of the reasons for poultry coming thru the winter in poor condition. They need oyster shells, charcoal and grit and it is profitable to keep the hoppers in the poultry houses well filled.

The open-front hen house is now considered the poultryman's best ally in fighting colds and roup. Hens that have fresh air seem to develop an immunity to colds. The open-front house protects the birds from both draughts and bad air.—R. G. Kirby.

SELLING THE LIVE ROASTER

In the fall of the year many poultry raisers find that they have on hand a large number of fine roasters with no particular market. The commission markets are usually overcrowded at this time and prices rather disappointing because of the large number of persons who dispose of excess stock at this time.

However, most of the suburbs of our towns and cities offer a special market which the poultryman can profitably develop at the cost of just a little advertising or personal solicitation. Many suburban dwellers like to have a small flock of roasters on hand from which to pick a bird as needed. Such customers usually have a small poultry house and yard, but not sufficient space or time to permit the raising of young stock and are frequently glad to buy from six to a dozen birds for the winter use.

One of the best ways of reaching such trade is to advertise in the papers of the locality in which it is desired to do business, stating that live young roasters are had for sale in lots of half a dozen or over, delivered by express prepaid at a given price per pound. It is also well to give some space to the desirability of having one's own fowls to kill as wanted, and mention the saving to be made by purchasing the poultry live and in quantities instead of dressed, one at a time.

This plan will give the poultryman a ready market for his surplus cockerels and at a price much better than could be obtained in the open market at the season of the year. Of course, the success of the plan all depends upon the producer asking a reasonable price and giving the customer a fair deal. — J. Raymond Kessler, Chester Co., Pa.

THE COCKEREL WORTHWHILE

Where the majority of the males are disposed of as broilers when reaching the pound and a half or two pound size care must be taken not to pick the wrong ones to leave to mature for breeders. The experienced poultryman is not likely to make any great mistake when selecting his male birds at this age, but the inexperienced man will very frequently pick the wrong birds.

The type of male to pick at this age is the one with the largest frame and with little noticeable development of the comb and wattles or any of the sexual qualities. In other words, select birds that look as tho they would do nothing but grow for the next 4 or 5 months and which give assurance of developing little of their sexual qualities prematurely. Such birds will grow into fine big males before they develop the sexual attributes, and when they do mature they will be worthy breeders of good size and vigor.

The mistake that so many beginners make in selecting males for breeders when so young, is picking the little cocky premature birds with premature comb and wattle development. This type, found in every brooder flock, attract attention by their cocky manner and comb and wattle development, and seem to the inexperienced just the ones to keep by reason of their apparent vigor and development of the distinctive male points. The fact is, they are just the ones to avoid because they have developed the male characteristics prematurely and while apparently the best at the particular time they rarely develop very much afterwards, usually resulting in useless runts.

The male worthwhile is the one that does nothing but grow until at least six months old before developing the distinctive characteristics of his kind, and the poultryman will do well to remember this in selecting future sires.—J. Raymond Kessler, Chester Co., Pa.

WHAT THE HEN CAN DO

Uncle Sam says, "Hens must help win the war". Now, Biddy didn't raise her chicks to feed a soldier, but when duty calls, she's game. What can she do? Statistics gleaned from census reports, departmental and official estimates, show what she has done. From these it is easy to deduce what she is capable of doing on the laying line this year.

She is not near maximum production when she turns out 2,000,000,000 dozen eggs a year, equivalent to that many pounds of meat. What would that much meat look like on the hoof? Imagine 3,000,000 head of cattle, and you can come near it. That may be worth crowing over, but Biddy does not crow. Neither does she rest. Instead she devotes time to production of poultry meat weighing 2,500,000,000 pounds, equivalent to 12,500,000 squealing pigs dressing 200 pounds each.

The civil population can eat this enormous mass of food and save beef and pork to nourish the fighting men to go over the top. Meat, not talk, will help win the war. The

American eagle may scream at the front, but the American hen adding to the meat supply is capable of doing a big bit in winning the fight. Why not encourage her?

Reliable Poultry Journal says that in more ways than one the well-bred healthy and vigorous domestic hen is a marvel. Times without number Leghorns and other "egg breeds" have reproduced in fresh eggs their own body weight seven to ten times within a year, and the heavier weight "general purpose" breeds very often lay eggs in one year that equal four or five times their body weight, which weight is nearly twice that of the average "egg breed" pullet hen.

What other meat-producing animal can do this? The worthy hog is the hen's only rival—and there are at least six things to be said in this connection about him: First, our farmers, in response to Government appeal, are now hard at work increasing the hog production of the country as much as they can for 1918; second, hogs can not be bred in cities, in suburbs, or in many other places where fowls can be kept; third, hogs are ravenous feeders; fourth, cholera is a dreaded hog scourge; fifth, hogs do not lay eggs; sixth, the average housewife would be bothered in killing and dressing a hog for Sunday dinner.

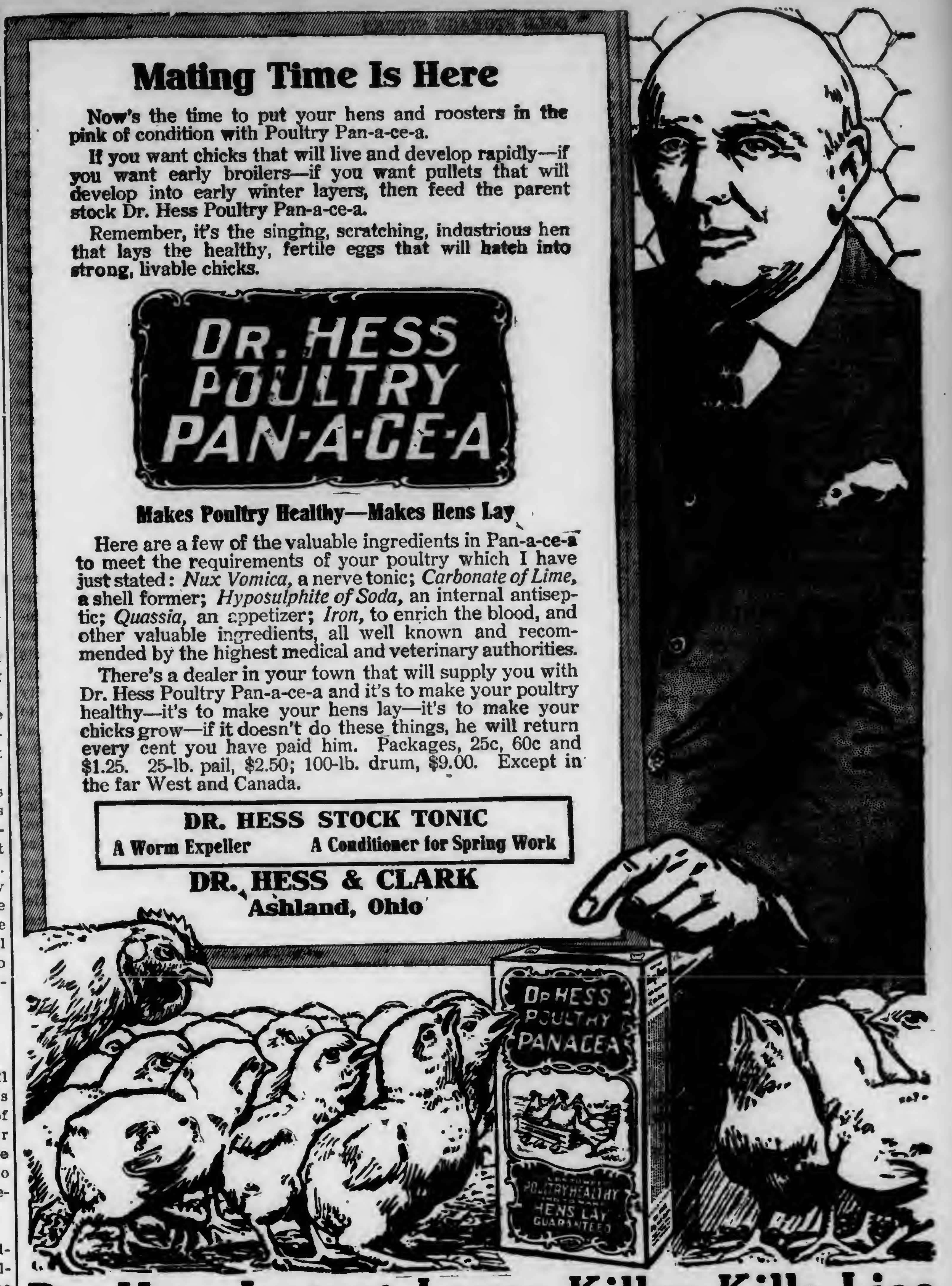
All due credit to the hog, but the American hen (well-bred, fully domesticated and ready to eat almost any waste material that hogs will) is without an equal when it comes to the "quickest and cheapest" means of increasing our meat supply—increasing it for everybody, and that is why our Government, thru the U. S. Department of Agriculture, is now telling us these truths and urging the great common public not only to be patriotic in this time of National need, of military necessity, but to do these things in their own personal best interests.

SPRING BREEDING NOTES

Do not attempt to breed from all the birds in the farm flock if it is possible to isolate a small flock of the best and most profitable hens for breeding purposes. This is quite necessary if the farmer desires to make a rapid and marked improvement in the quality of his poultry.

The farmer buying purebred breeding stock will frequently select pullets with the idea that they will be of value for a longer time and lay more eggs. In many cases it is better to buy year-old hens and then have eggs the first year which will be satisfactory for hatching and increasing the size of the purebred flock. In our experience it is easier to purchase year-old hens of quality than it is to obtain first-class pullets. Many of the experienced breeders will have fine year-old hens to sell every year while they will always keep the best of their pullets.

A cockerel mated with year-old hens seems to give the best results according to our experience. A cock bird of good quality will frequently be satisfactory until the third year when it is wise to make a change. We have mated a cock bird to pullets with fair results but the results have been better when the same cock bird has been mated to year-old hens. Generally speaking, the use of pullets as breeders is bad judgment even if they are mated with cock birds of fine vigor and known breeding value.



Mating Time Is Here

Now's the time to put your hens and roosters in the pink of condition with Poultry Pan-a-ce-a.

If you want chicks that will live and develop rapidly—if you want early broilers—if you want pullets that will develop into early winter layers, then feed the parent stock Dr. Hess Poultry Pan-a-ce-a.

Remember, it's the singing, scratching, industrious hen that lays the healthy, fertile eggs that will hatch into strong, livable chicks.

DR. HESS POULTRY PAN-A-CE-A

Makes Poultry Healthy—Makes Hens Lay

Here are a few of the valuable ingredients in Pan-a-ce-a to meet the requirements of your poultry which I have just stated: *Nux Vomica,* a nerve tonic; *Carbonate of Lime,* a shell former; *Hyposulphite of Soda,* an internal antiseptic; *Quassia,* an appetizer; *Iron,* to enrich the blood, and other valuable ingredients, all well known and recommended by the highest medical and veterinary authorities.

There's a dealer in your town that will supply you with Dr. Hess Poultry Pan-a-ce-a and it's to make your poultry healthy—it's to make your hens lay—it's to make your chicks grow—if it doesn't do these things, he will return every cent you have paid him. Packages, 25c, 60c and $1.25. 25-lb. pail, $2.50; 100-lb. drum, $9.00. Except in the far West and Canada.

DR. HESS STOCK TONIC
A Worm Expeller A Conditioner for Spring Work

DR. HESS & CLARK
Ashland, Ohio

Dr. Hess Instant Louse Killer Kills Lice

What's on the Fertilizer Bag?

Does your manufacturer print on the fertilizer bag the per cent of immediately available nitrogen (viz., Nitrates) in it?

Many do not.

Home mixing is the safe method. Mix your own fertilizers and know what you get.

My book "Home Mixing" free. Send post card for it.

DR. WILLIAM S. MYERS
25 Madison Ave. New York

Ranger Electric Lighted Motorbike

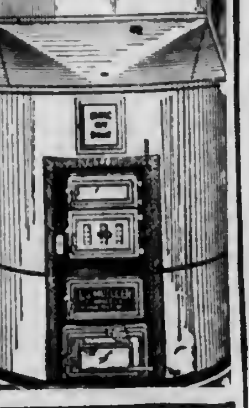
30 DAYS FREE TRIAL and freight prepaid on a new 1918 "RANGER" bicycle. Write at once for our *big catalog* and *special offers.* Take your choice from 44 styles, colors and sizes in the famous "RANGER" line. Marvelous improvements. Extraordinary values in our 1918 price offers. *You cannot afford to buy* without getting our *latest propositions* and Factory-Direct-to-Rider prices and terms. Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our *liberal terms* on a sample to introduce the new "RANGER". TIRES, equipment, sundries and everything in the bicycle line at *half usual prices.* *Write Today.*

MEAD Cycle Company Dept. [illegible] Chicago

THE SELF-OILING WINDMILL has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.
We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
Write AERMOTOR CO., 2500 Twelfth St., Chicago

HILLPOT QUALITY CHICKS

$600. IN 10 MONTHS
from $40 Invested in Hillpot Quality Chicks
is the record of one of our customers. Only one of many cases which prove that it pays to get our sturdy, strong, well hatched chicks from heaviest egg-laying strains.
Leghorns - Barred Rocks - R. I. Reds - Wyandottes
Prices right. Full count and safe arrival guaranteed.
Valuable book FREE
W. F. Hillpot, Box 28, Frenchtown, N.J.



Heats Your Whole House Comfortably From One Register –

THE Mueller Pipeless Furnace frees you from the disadvantages of stoves—gives you all the comfort and satisfaction of real furnace heat—without having to tear up your walls for pipes or flues. Saves 35% in fuel—burns hard or soft coal, coke or wood.

A real furnace, solid cast iron, with triple jacket, substantial firepot and radiator, triangular duplex grate. Does not heat cellar.

MUELLER PIPELESS FURNACE

You can depend on the Mueller—its efficiency and economy have been proved for you. It is exactly the same construction as the old reliable Mueller line, but without pipes or flues. Easy to install in old or new homes.

Guaranteed for five years. Write for interesting free booklet "Heating Your Home" and name of nearest dealer.

L. J. Mueller Furnace Co.
Makers of Heating Systems of all Kinds since 1857
222 Reed Street
Milwaukee, Wis.

Reading Chemical Co.

Our products are the best of their kind.

Hennesy's Scientific Formula Fertilizers are dependable at all times and will surely increase your yield, besides improving your soil for future use.

Our Peerless Brand Hydrated Lime will correct soil acidity at low cost. It is practically 100 per cent pure.

Our Peerless Brand Poultry Meat is a real egg producer. It makes hens lay and pay.

Digester Tankage—Builds big frames to carry fattening. Pure and guaranteed.

Calicide—The best spray material for trees, potatoes and other vegetable crops. Write and get our prices and literature covering all our products. See for yourself how you can save. Write the

READING CHEMICAL CO, Reading, Pa.

Greater Profit In Hogs and Cattle

Every dollar cut from your feeding bill adds to your profit.

DOLD QUALITY FOODS have added to the profits of thousands of farmers. Feed Digester Tankage and watch your hogs thrive. It's 60 per cent protein and high in phosphates. Meat Meal is similar and costs less. Soluble Blood Flour is concentrated nourishment for calves. Steam Bone Meal is a fertilizer that will fatten your fields.

Ask your Dealer for Dold's Quality Foods. Write for booklet. Jacob Dold Pkg. Co., Buffalo, N. Y. Reliable ag'ts wanted

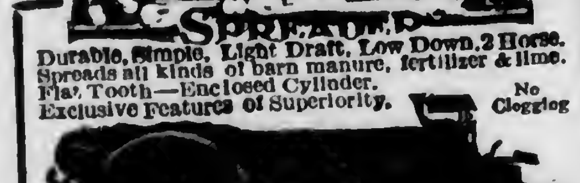
SILO PRICES SMASHED

YOU CAN BUY DIRECT from our mills a better Silo for less money than from anywhere else, because we eliminate dealers' profits and agents' commission. Our Silos are made right in the World's Largest Lumber market where lumber prices are lowest.

Send For Full Particulars regarding the many exclusive features of Bennett Silos and our rock bottom prices. Ask also for Bennett Price Regulator Catalog of Building Materials.

RAY H. BENNETT LUMBER CO.
Bennett Wharves N. Tonawanda, N.Y.

SEND FOR PRICE LIST NOW



KEMP CLIMAX SPREADER

Durable, Simple, Light Draft, Low Down, 2 Horse. Spreads all kinds of barn manure, fertilizer & lime. Flat Tooth—Enclosed Cylinder. Exclusive Features of Superiority.

No Clogging

Catalog Free. Write for "Saving and Application of Manure" Dealers write for prices

N. J. KEMP CO., 46 Swan St., Batavia, N. Y.

CHEESE, EGGS AND POULTRY COLD STORAGE STOCKS

Larger stocks of American cheese and frozen eggs and smaller stocks of case eggs and frozen poultry were held on February 1, 1918, than on the same date in 1917, according to the monthly cold storage reports of the Bureau of Markets, United States Department of Agriculture.

Altho there were 11,173,000 lbs. of American cheese moved out of storage during January, there were 56,000,000 pounds remaining on hand February 1, 1918, which is about 116 percent more cheese than was held at the same time last year.

There were 12,025,000 pounds of frozen eggs in cold storages on February 1, 1918, which is about 475 percent more than on the same date last year. During January, 2,318,586 pounds moved into consumption. Slower movement of frozen eggs is reported this year, because of the difficulty of obtaining sugar and the consequent curtailment of the use of eggs by confectioners and bakers. Stocks have been increased also by the importation of frozen eggs from China.

AGRICULTURAL CENSUS

Thru the New York State Food Commission

In spite of adverse weather conditions with the extraordinary good co-operation of district school superintendents, teachers, pupils and others, the 1918 State Agricultural Census was completed on Feb. 9, for Cattaraugus County, N. Y. The summary of this county census reveals many startling facts, a few of which are:

Fewer people on farms than a year ago.

850 hands needed for 1918.

1735 additional farm hands needed for short periods during 1918.

35,000 bushels potatoes on hand above requirements.

3,500 bushels seed corn wanted.

9,000 bushels oats wanted.

1,200 bushels spring wheat wanted.

4,000 bushels buckwheat on hand above needs.

20 percent increase in use of fertilizers over last year.

45 percent increase in use of lime over last year.

100 percent increase in acreage of corn to be husked.

Eggs to be incubated normal.

40 percent increase in acreage of winter wheat.

50 percent increase in acreage of spring wheat.

Buckwheat and barley show a falling off from last year.

Other crops including corn for silo, oats, beans, potatoes, etc., are about equal with last year.

NEW JERSEY MARKET NEWS

Jersey Grown Seed Potatoes

Many growers in the central and northern parts of the state do not appreciate the second crop seed stock grown in the southern counties. The purchase of Maine and New York State seed has decreased greatly during the past five years in this section and many of the largest growers will use nothing but home-grown "Second Croppers" this season.

New Jersey Potato Association

A meeting which many think marks a new era in the New Jersey potato industry resulted from the call sent out from the State Department of Agriculture. Over two hundred growers responded and considered seriously timely matters pertaining to their business. A State Potato Association was organized and Earle Dilatush, of Robbinsville, Mercer County, was elected President; W. B. Duryee, Jr., of the State Department of Agriculture, Secretary; and Walter L. Minch, of Bridgeton, Treasurer. The Executive Committee is to be composed of the officers and one member from each county having fifteen or more members in the Association and one from each of the four potato selling associations.

The meeting voted to endorse the grading of all potatoes according to the standards recommended by the U. S. Department of Agriculture and the Food Administration. Mr. E. P. Miller, Chief of the Potato Division of the Food Administration, outlined the plans of that Institution and urged the hearty co-operation of every grower's organization and every grower.

The consumption of potatoes is retarded by high retail prices. The farm price is 95 cents, while consumers pay $2.40 per bushel. This is an old, old story but one which affects food distribution in a disastrous way. When the supplies of any commodity are plentiful the primary values to the producer weaken. Conditions at such a time favor the dealers and the longer he can delay a realization of this condition among his customers, the greater will be his profits. The results of following out such practices are: Consumption remains as usual because retail prices continue the same. Producers become panicky, fearing greater losses all the while. Frequently food stuffs spoil because supplies run ahead of consumption.

Right now wholesale and retail dealers have an opportunity to show loyalty in a most practical way. The supplies of potatoes are large. The first cost is about as usual. Potatoes are the one important food product with normal market value. A drive on potatoes by energetic retail stores, limiting their gross profits to 15 percent could not fail to secure very marked increases in sales and consumption.

Actual Prices on Farms and in Cities

In order to emphasize the opportunity for lower retail prices and increased sales, the Bureau of Markets of the State Department of Agriculture secured information at first hand in several parts of the state on February 20 and 21. Farmers in the commercial growing districts of the state were receiving from 90 cents to $1 per bushel delivered at loading stations. Taking one-half bushel as a unit for comparison of wholesale and retail prices this would mean 48 cents.

In some of the large cities wholesalers were found who were charging $4.50 per 150 lbs., or 90 cents per one-half bushel.

The retail prices found were as follows: Camden and Atlantic City, $1 per half bu.; Bridgeton and Millville, 60 cents; Paterson, $1; Passaic, $1.25.

There is no need for any worry regarding food necessities when a supply of such a product as potatoes is at hand. Where dealers refuse to recognize their opportunity and responsibility in regard to such a matter people should club together and buy in wholesale quantities.

FEDERAL FARM LOAN BANKS

During the month of January $11,787,517 were paid out to farmers of the United States by the Federal Land Banks on long time first mortgage loans according to a statement of the Federal Farm Loan Board. The Federal Land Bank of St. Paul closed loans during the month amounting to $2,737,100. The other banks made loans as follows: Spokane, $1,724,755; Berkeley, $1,143,000; Wichita, $1,118,800; Houston, $1,006,522; Omaha, $970,000; New Orleans, $778,770; St. Louis, $636,965; Louisville, $624,100; Springfield, $488,360; Columbia, $298,535 and Baltimore, $260,600.

On February 1, the total amount of money paid out to farmers since the establishment of the Federal Land Banks was $50,782,432 covering 24,020 loans closed. The total amount of loans applied for up to February 1, was $260,556,981 representing 112,146 applicants.

The grand total of loans closed is divided among the twelve Federal Land Bank Districts as follows:

St. Paul, $9,760,400; Spokane, $8,930,075; Wichita, $8,643,200; Berkeley, $3,666,600; Omaha, $3,210,190; Houston, $3,124,412; New Orleans, $3,025,255; Louisville, $2,927,900; St. Louis, $2,296,480; Baltimore, $2,114,200; Springfield, $1,614,665; Columbia, $1,469,055.

FARM PRICES

Comparison of the Averages for Principal Crops for the Years 1915 and 1917

The weighted average price of principal crops at the farm for 1915 was about the same as for 1914, or only 4 percent greater, but in 1916 the gain was 47 percent over 1915, and in 1917 it was 43 percent over 1916, while in 1917 the gain over 1915, two years previous, was 110 percent. The prices taken are for December.

Field Crops

This two-year gain of 110 percent is exceeded most of all by the kafirs, for which the increase of price at the farm was 258 percent. Next below in order are broom corn with 220 percent, hops with 189 percent, tobacco with 174 percent, and cotton lint with 152 percent. Other cereals now appear, and corn, the greatest of the cereals, had a gain of 123 percent in price at the farm, barley 120 percent, and wheat 119 percent.

Below the average advance of 110 percent in price in two years, the scale descends to 109 percent each for cotton seed and rice, 106 percent for dry edible beans, 103 percent for buckwheat, and 102 percent for wild hay. Every one of the crops so far mentioned more than doubled in price in two years; corn, barley, and wheat ore than doubled by one-fifth.

Five crops, none of which is of small importance, gained in price in the two years from 77 to 99 percent—rye, oats, potatoes sweet potatoes, and apples. Seven crops gained from 55 to 75 percent, and these are cabbage, onions, flaxseed, peaches, peanuts, tame hay, and cranberries, the hay crop, of course, being of high importance. Gains of 29 to 44 percent in price were made by hemp, clover seed, sugar cane, peas, and sugar beets, and for oranges the gain was only 9 percent.

OBER FERTILIZERS Pay Better Than Ever

FERTILIZERS are high this year compared with average prices. But fertilizers are cheaper compared with the prices paid for the crops they produce. Every corn or cotton plant is a factory that converts cheap plant food into valuable human food. Feed the crops, so that the crops can feed the nation.

The Ober formulas for corn, cotton and trucks will help you get big yields to sell at high prices. Write for full information

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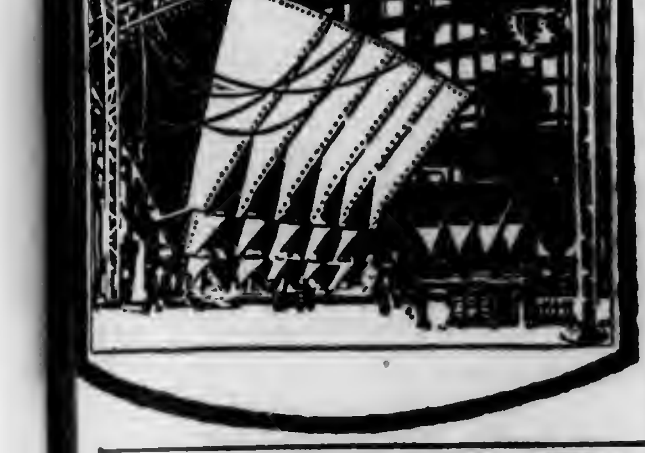

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Easy to push, fast, thorough, low in cost. Opens and covers furrow for seed and fertilizer. Cultivates wide or narrow rows. Turns soil and covers scratch foods in poultry yards. 30 other Iron Age Combinations. Send for free booklet today, and learn how to garden the modern, easy way.

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ANIMAL BONE FERTILIZER
ASK YOUR AGENT, OR ADDRESS US. LANCASTER PA.

Federation of Agriculture

New York Farmers Perfect Strong Organization

New York's newly organized State Federation of Agriculture held an enthusiastic meeting at Syracuse, February 20. There were 300 delegates from twenty-six state organizations in attendance, and all were unanimous in the opinion that the time is at hand when the organized farmers should take their rightful place in the affairs of the state and demand a complete reorganization of the state's machinery in its relation to agriculture.

Speeches were made by several men prominent in farmers' organizations, and all were of one mind in emphasizing the need of co-operative effort among these organizations for the protection of the farmers' interests and the promotion of agriculture. Silas L. Strivings, president of the State Farm Bureaus, said that the way agricultural affairs are now handled the legislators and politicians usually promulgate legislation and then consult the farmers. He believed that the reverse should be the rule and that the farmers should be counseled before hand. "You cannot enlist the farmer for any unworthy cause," he asserted. "He wants to be true to his government and he will be. The trouble has been that farmers have paid too much attention to the larger problems of life and let their own personal business suffer."

Purposes of Federation

Seth J. T. Bush, president of the New York State Horticultural Society, told of the efforts which had been made to bring the farmers of the state together in order to bring centralized pressure to bear in efforts to secure a fair deal for the farmer, and declared that no politician was interested in the formation of the federation and that the organization would adhere rigidly to the practice of excluding politicians from membership. Mr. Bush enumerated these objects for which the federation was formed:

1. To increase the efficiency of all farmers' organizations politically, commercially and educationally.
2. To enable farmers to speak with a unified voice on all matters of great public concern.
3. To protect the interests of the consumers as well as the producers, politically and commercially.
4. To develop improvements in rural life.

Government price fixing was vigorously opposed by Mr. Bush, who said that unless the food administration allows the farmer to get more for his wheat the supply is certain to diminish. "The farmer is tired of being misjudged and exploited," he declared. "They are tired of the politicians who have gone out of their way to browbeat them and insult them. If the farmers are to be regulated, then they want to be regulated by farmers. Farmers of the state are tired of being crucified on the altar of political expediency."

Leave Prices Alone

The leading feature of the meeting was an address by Liberty Hyde Bailey, former dean of the State College of Agriculture. He said, among other things: "There is great hope in this federation if it is properly constituted to be an expression of the will of the people. But you must shun aspiring politicians, you must shun demandatory action and mass force. Pass your resolutions, gentlemen, and let your protests be heard. But address them to the people, to the public, and not to the governor of the state."

Speaking of the demand for food, labor scarcity and other disadvantages under which farmers are operating this year, Dr. Bailey said: "We are trying many expedients, such as tractors, organized distribution of labor, distribution of fertilizers and of seed, and educational propaganda, but none of these expedients is fundamental. The tractor, for instance, can not displace the horse, and its usefulness under the plan in this state depends solely upon the extent to which the administration of them is to be part and parcel of political patronage." Opposing price fixing, he asked: "Why should the farmer be stopped by an arbitrary price, any more than any other industry? This idea of limiting the farmer's price is a survival of the old doctrine of taking toll out of the last man. War makes its own prices; it makes cheap money. We cannot keep prices in wartime where they were in peacetime. No business man estimates his profits by his sales; he estimates it by comparison of his sales and costs. We should not tinker with prices. We should regulate the processes of trade, should keep out self-seeking politicians, we should keep unversed people out of regulative offices and we should restrain meddlesome committees and commissions with scant knowledge of what they are called upon to do." All the farmer needs, continued Dr. Bailey, is conditions that allow him to operate naturally and then to be left alone.

Monopolized Distribution

Mr. Samuel Fraser made a strong address in which he told how the food distributors are organizing and gaining a monopoly. He said the great grocery companies were becoming so powerful that they can go to Washington and tell the Food Commission "where to get off". He declared that this nation is rapidly becoming one of landlords and tenants; that more than one-third of the farmers of the state rent their farms and only 26 percent own them outright.

Resolutions

A number of strong resolutions were adopted. The delegates voted to demand the immediate repeal of the Farms and Markets law of 1917, and also the law establishing the State Food Commission. A resolution condemning price fixing by the government was carried as was one requesting the government to aid in developing a vegetable evaporating industry. Several resolutions favoring the conscription of labor were voted down.

The officers of the State Federation of Agriculture are as follows: Silas L. Strivings, of Castille, president; Professor Samuel Fraser, of Geneseo, vice president; Seth J. T. Bush, of Morton, secretary; and Willis P. Rogers, of Williamson, treasurer.

Another conference will be called by the executive committee late in the spring, when the detailed campaign of the year will be planned.

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FARQUHAR Sawmill Machinery is the result of sixty-two years manufacturing progress. Practical in design, efficient and simple to operate.

Our Standard Mills are built in four sizes, 2,000 to 15,000 feet a day. Also 1-A Mill for heavy work, and the Pony for light sawing. Farquhar Double Belt Feed equals the flexibility of a variable friction feed in cutting, besides has speed for quick return of Carriage with big reduction in wear. Either Standard or Log Beam type of Carriage.

Economical power is furnished by Farquhar Portable Rigs. The Cornish as illustrated above is particularly adapted to sawmilling, because the offal lumber and sawdust can be used for fuel. Locomotive Rig burns coal or wood, and is in every sense a general purpose farm Engine. Farquhar Steam Tractors are also well suited for sawmilling.

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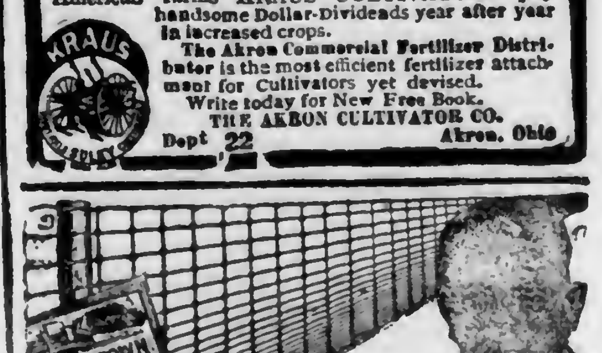

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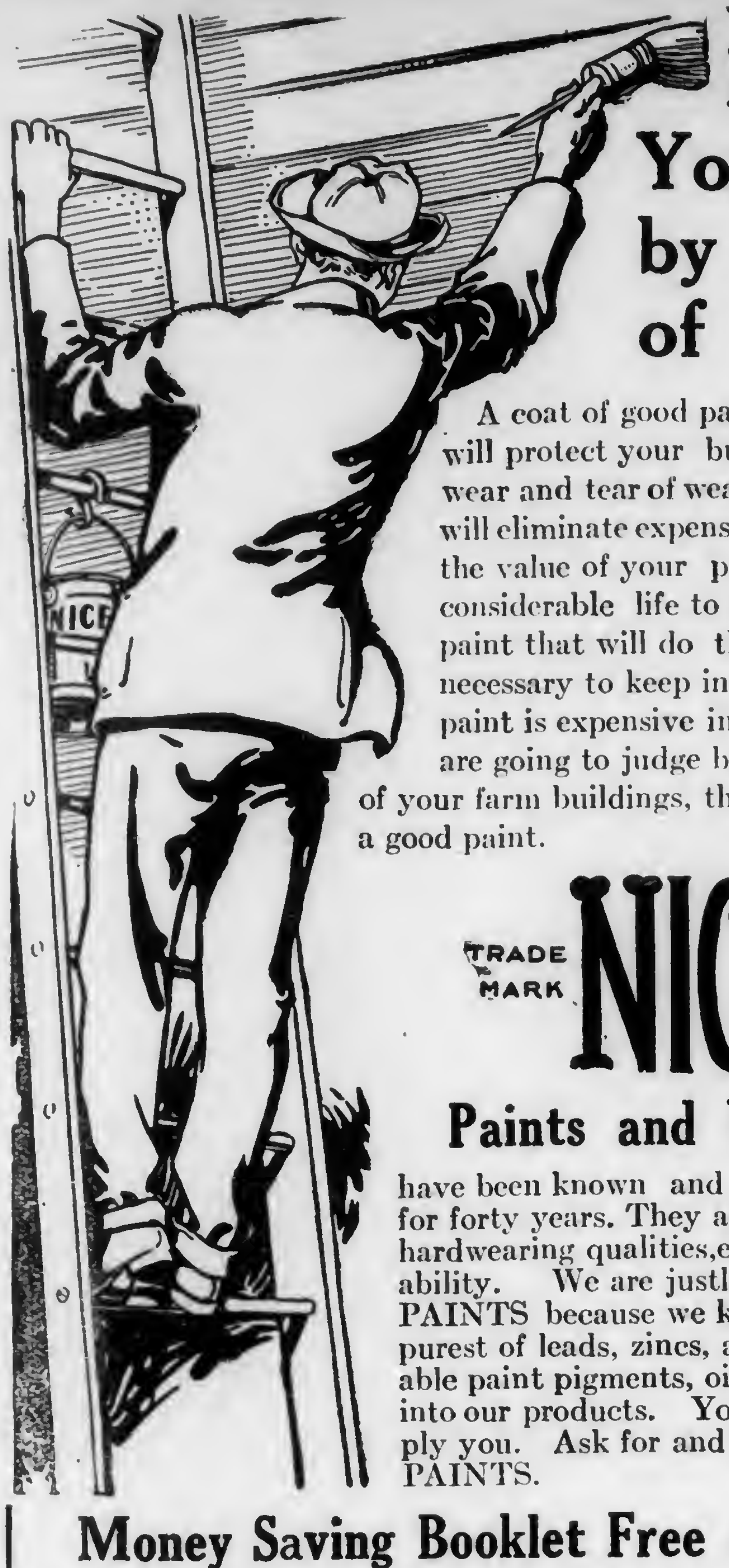

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The cheapest roofing is not necessarily the lowest priced. It costs no more to put on a good roofing than a poor one, and the additional years of wear more than pay for the difference in price. Pennies spent now on the roofing will be dollars saved later on repairs.

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Live Stock

WATCH THE SOWS AT FARROWING TIME

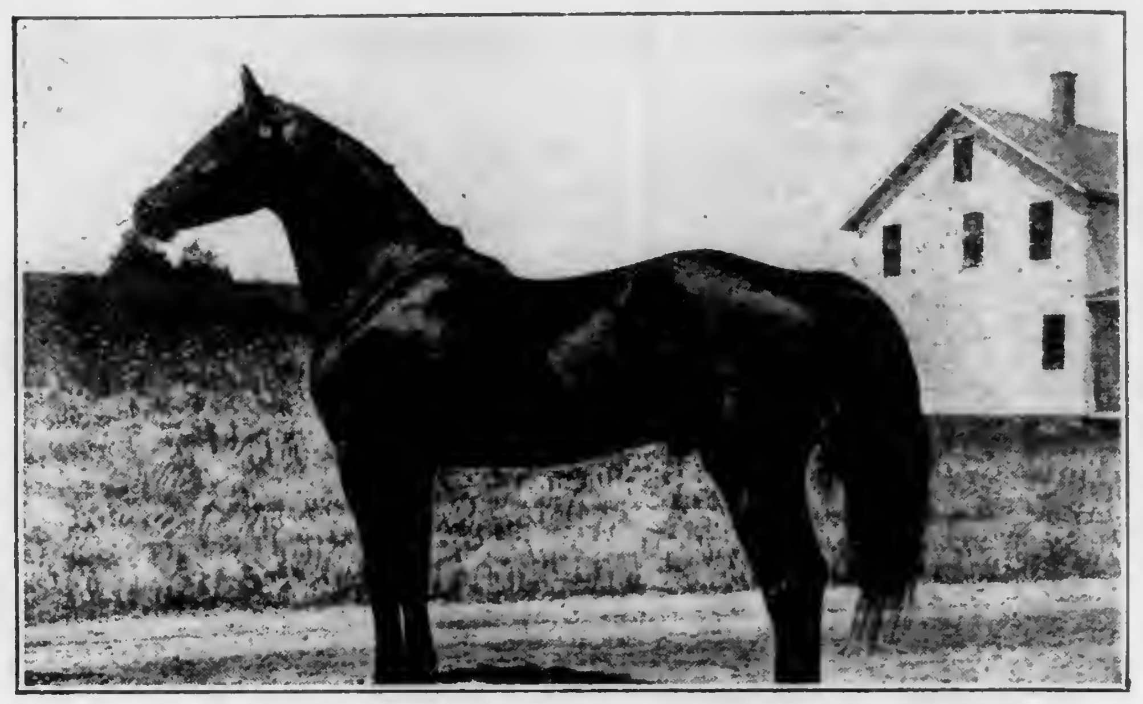
Farrowing time is the most critical season for the swine herd. At no other time will care and attention pay greater returns. The results of several months of labor and care may be lost by neglect at this period. Emphasis is justly placed on prolificacy of brood sows, but the number of pigs which they farrow is not the most important consideration. The number they raise determines whether the sow has been kept at a profit or loss. The sow which farrows five pigs and raises all of them is more profitable than the one which farrows fifteen and saves two or three. The disposition of the mother has much to do with the number of pigs she will raise. The way she is handled influences her disposition and, consequently, the results that may be expected. L. A. Weaver of the Missouri College of Agriculture offers the following suggestions on the care of sows at farrowing time:

Strict account should be kept of breeding dates and a week or so before a sow is due to farrow, she should be removed from the other sows to the quarters where she is to farrow. The feed just before farrowing should be the same kind that will be fed while the sow is suckling her pigs. This feed should contain plenty of protein and should also be laxative in nature. A ration of corn 50 percent, shorts, 25 percent, bran 15 percent, linseed oil meal 10 percent should give good results; and while it is not recommended as the best ration, it can be taken as an example and similar rations may be used successfully. A few days before the sow farrows the amount of the ration should be reduced somewhat. If this is done, and a laxative feed is fed, the sow will come up to farrowing time without fever and will, for this reason, not be likely to injure the pigs by her own restlessness.

The quarters should be warm enough that excessive bedding will not be required. If too much bedding is provided the pigs may become hidden in it and smothered or crushed. A bushel or more of wheat chaff or cut straw will be sufficient. After the sow farrows it may be necessary to change the bedding, but the amount need not be increased. Dry bedding is more important than the amount of bedding. It should be changed often enough to maintain a dry bed.

Individual cots will be found valuable for keeping the sows away from other hogs at farrowing time. Usually the less the sow is disturbed when she is farrowing, the better. It is important that one be on hand, but unless she needs assistance, keep away from her. If the sow needs assistance, be as quiet in giving it as possible. The pigs should not become chilled before they have dried and suckled. If the weather is very cold, a lantern hung in the top of the cot will be of service. At such times, if the sow is gentle, it is well to place each pig as soon as it is farrowed in a barrel or box containing some warm bricks covered with old sacks. The pigs may be left here until they are dry and lively enough to be returned to the sow. If pigs do become chilled, there is no better way to revive them than to dip them in warm water.

The sow should not be fed much for 24 hours after farrowing. The pigs are not able to take much milk, and the milk flow should not be stimulated for the first few days. The sow will be more or less feverish and should have all the water she will drink but will not need feed for a day or so. If the weather is cold, it is well to take the chill off the water before giving it to her. The first feed should be the same kind that she received before she farrowed and should be fed in small amounts as a thin slop. The feed may be gradually increased as the pigs become able to take the milk until the sow receives all she will eat of a good, laxative, milk-producing feed. After the pigs are old enough to take all the milk the sow can produce, she should be fed liberally since there is no better way of feeding pigs than thru the mother.

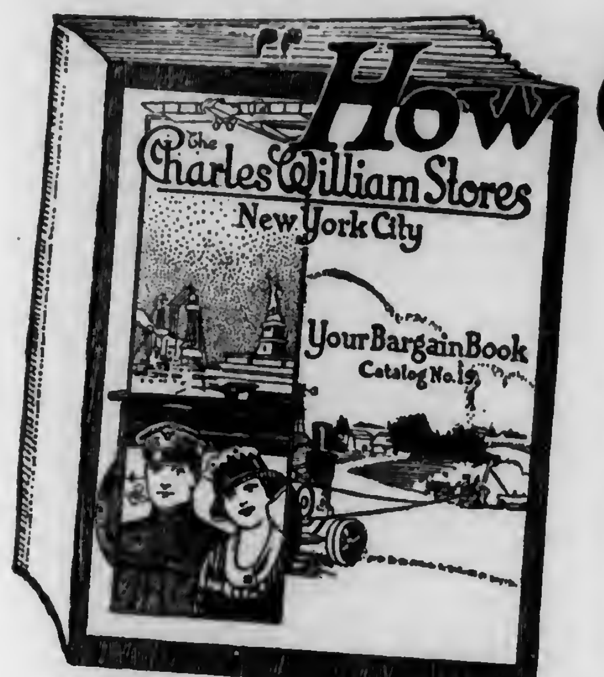


Morgan Sensation. Owned by Corydon R. Fitzwater, Bradford Co., Pa.

FINE MORGAN SPECIMEN

The accompanying illustration shows Morgan Sensation, nine-year-old Morgan stallion owned by Corydon R. Fitzwater, Bradford Co., Pa. On the sire's side this horse traces back thru Admiral Dewey 5025 to Highland Bay, Highland Gray, etc. On the dam's side he carries the blood of Allie Jewel, Ethan Allen and back to old Morgan. He is a fine specimen of one of the most remarkable breeds of horses that we have ever had.

Oat, corn, and rice products may be substituted wholly or in part for wheat breakfast foods, and for part of the wheat flour in all flour recipes. Every bit of corn, oats, and rice used instead of wheat helps us to win the war.



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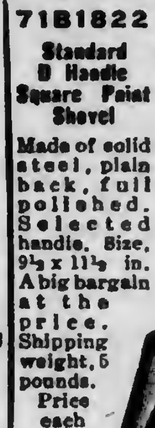
This harness will fit small sized horses weighing up to 900 pounds. No changes can be made except hames and traces instead of breast collar, as listed below. **Bridle**, ⅝ in. doubled and stitched checks, patent leather blinds, three buckle overcheck. **Lines**, ¾ in. wide, 12½ feet long. **Breast Collar**, Folded style, 1⅞ in. wide with ⅞ in. layer. **Traces**, 1 in. wide, doubled and stitched, two dart holes for adjustment. **Saddle**, 2½ in. wide. Patent leather skirts, lined with enamel drill. **Belly Band**, Griffith style, 1¼ in. single strap, with ¾ in. billets to wrap around shafts. Shaft tugs, ⅞ in. Shpg. wt., 20 lbs. 732810 Price with breast collar, as illustrated $13.95

71B1822 Standard D Handle Square Point Shovel



Made of solid steel, plain back, full polished. Selected handle. Size, 9½ x 11½ in. A big bargain at the price. Shipping weight, 5 pounds. Price each $1.21

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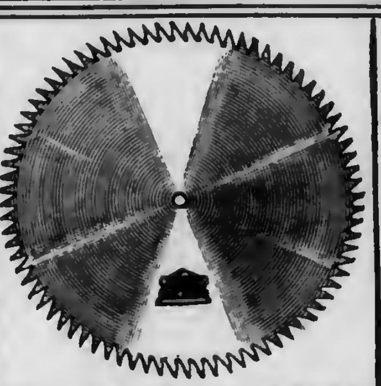
Reclining back and deep adjustable foot well. Makes bed 36 inches long and 13½ inches wide. Flat heavy gauge steel gear. 10-inch wheels, with ⅜ inch cushion rubber tires. Three-bow hood. Folds flat like small picture shows, except that wheels do not fold. Good grade imitation black leather. All steel frame. Finished black. 7681383 Shipping weight, about 33 pounds $6.40



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Good, deep hearth. Well braced legs. Will save its cost in a short time. The hearth is 19 in. in diameter. The fan case is 8 in. in diameter. Height to top of hearth, 32 in. 71B4826 Complete with half hood as illustrated. Shpg. wt., about 90 lbs. Price, each $9.60

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71B2056 Handy bush hook made of the best quality steel, sharpened and tempered, extra quality handle. Shipping weight, 4 pounds. Price, each $1.19

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Sizes 6 to 11; no half sizes.

$5.19

Black Tuff-Hide Leather Work Shoes, guaranteed to withstand hard wear and give service for at least six months with ordinary care. Two full overweight viscolized leather soles, grain leather insoles, full vamps to toe, not cut off under tip, gusset tongue. 7B2926. State size. Price $5.19

Top Buggy $54.90 With Shafts and Steel Tires

BODY—Piano style, 23x56 in. Hardwood sills and floor.
GEAR—15/16-inch long distance drop axles; 12-inch fifth wheel. Full clipped three-leaf front and four-leaf rear springs. Wrought Bailey body loops.
WHEELS—Sarven patent, best grade hickory, screwed rims; ⅞-in. tread with ¾-in. oval steel tires; 39-in. front, 43-in. rear wheels.
TOP—Three-bow top, leather quarters and stays, heavy rubber roof and side curtains, lined throughout with wool cloth.
TRACK—4 feet 8 in. or 5 feet 2 in. Be sure to state which is wanted.
Shipping weight, crated under 24 inches, about 500 pounds. Shipped from factory in Indiana.
931853 Price, with shafts and steel tires $54.90

Seat 21 x 18 inches

Roomy Rocker $2.45

7681166. Back 27¼ in. high above seat. Shpg. wgt., about 20 pounds. Made of selected hardwood, finished high gloss, golden color. Saddle seat. Top back slat neatly embossed. Full bent arms.

Shipped promptly from stock at factory in Indiana

A handsome Colonial design, made of selected, solid, plain oak with quartered plain oak panels in door, finished golden oak, high gloss. Base top is 1½ inches thick. One of two upper drawers is lined for silverware. Roomy linen drawer. Spacious cupboard fitted with two doors. Height over all, 55 in. 44 in. wide, 20 in. deep. French plate beveled mirror, 30 x 10. 9681095. $16.65

Numbered Leg Bands

Easily adjusted, absolutely secure. Will fit any size fowl. Do not corrode, rust or make the leg sore. Can be applied in an instant. Shipping weight, 2 ounces per hundred.
19B1117 Price per 25 bands, numbered 1 to 25 . . 14c

Look on this page first, then look in "Your Bargain Book." Everything that you need is there.

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Beds	" 694	Furniture	" 655	Phonographs and Records	" 614	Underwear	" 143
Chinaware	" 627	Hardware	" 820	Rugs and Carpets	" 741	Washing Machines	" 780
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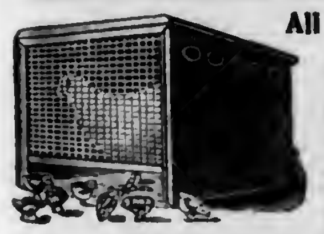
All Metal Rainproof Chicken Coop



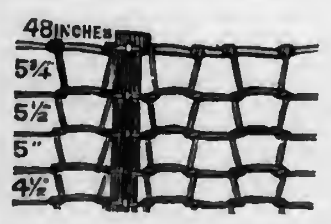
19B978 On hot nights you can lift off the netting front and slide it in upside down. Top of coop slides back, so that you can reach the hen and chicks without stooping. You can leave top back to let coop dry quickly after washing. Has storm-cover which slips into netting groove, giving complete protection in rough weather. Fully ventilated. Folds over for storing. Made of heavy galvanized iron throughout. Size, 21½ x 17 in. Shp. wt. 14 lbs. Price, each $1.90

"Ever Ready" Tool Grinders $1.95 UP

The most practical high-speed tool grinders made. Made from best materials, highly finished strong and substantial. Fitted with a tool rest and best quality emery wheel. The gears are accurately cut and are enclosed in dustproof containers. Quickly attached to the table or bench by thumbscrews.

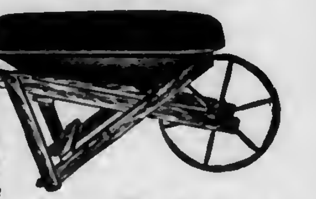
1B354 With 4 x ¾ inch rapid cutting emery wheel. Diameter of gear case, 4 inches; height over all, 7 inches. For grinding small tools and table cutlery. Shipping weight, 6 pounds. Price, each $1.95

Acme Poultry Fence



For Gardens, truck patches and young fruit orchards. The running wires are close enough to turn back all sizes of poultry. The top and bottom wires are Number 10 and the intermediate line and stay wires are Number 14. 20 rod bale of Poultry Wire 60 inches high, 19 bars, average weight, 185 pounds 728826. Price per bale $15.38

Steel Tray Wheelbarrow



7183484 A substantial and durable barrow with a heavy steel tray mounted on the frame and bolted in front and back. Size of tray: Length, 32 in.; width, 28½ in.; depth, 6 in. Tray is nicely painted. Has 16-in. steel wheel. Shipping weight, 48 lbs. Price, each $3.60

Hill and Drill Seeder

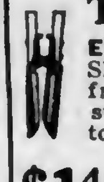
At New York $8.10

Plants any seed in hills 4 to 24 in. apart or will sow continuously

Separate seeding device for each sized seed

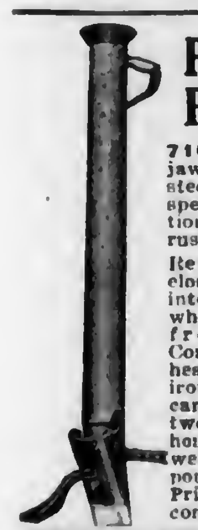
71982139 The seeding device is composed of but three moving parts—a disc, a shaft and a small star wheel—no cams, no gears, no bands, no springs, etc. No loss of seed or time in thinning out. Made entirely of steel and malleable iron except the handles. Wheel is 18 inches high. Ready for use. Shipping weight, 67 pounds. Price $8.10

The Rapid Digger



Extra strong Post Hole Digger. Shoulders and blades are formed from one piece of solid high carbon steel. No welds or malleable parts to break. Blades are 10 inches long, handles hardwood. Height over all, 5 feet. Weight, about 10 pounds. 71B2288. Price each, $1.44.

Potato Planter



7108633 The jaws are bright steel dipped in a special preparation to prevent rust. Remain tightly closed until thrust into the ground when they may be freely opened. Conveying tube is heavy galvanized iron. One man can easily plant two acres in ten hours. Shipping weight, about 6½ pounds. Price, complete $1.15

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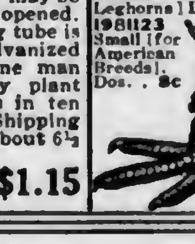
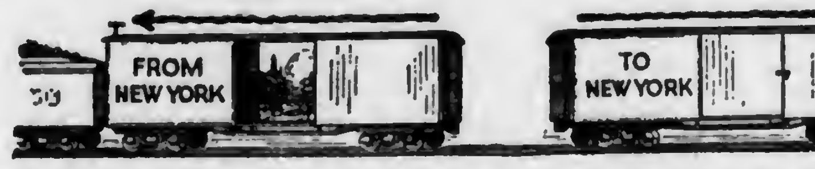
Made of Celluloid. Used for indicating the age of fowls and for many other purposes. Colors. Blue, White, Red, Yellow and Green. One dozen of one color and size in a package. We don't break packages. 19B1122 Small [for Leghorns] Dos. . 7c 19B1123 Small [for American Breeds]. Dos. . 8c





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71B1910 One Solid Steel Spring Tempered Spading Fork, 4 steel tines, selected D handle. Capped and strapped ferrule. One Socket Shovel, D handle of best crucible steel has socket shank. Size of blade, 9½x12 in. One 14-Tooth Garden Rake, of best steel. Teeth spring tempered, hardwood handle. One Solid Steel Socket Garden Hoe, tempered steel blade, 6 in. wide. One-piece steel socket. ⅝-in. steel shank. 4½-ft. selected hardwood handle. Shpg. wt., 15 lbs. Per set, ... $3.70

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A Quarter of Beef

What I Did With It This Past Winter

MRS. M. G. FEINT, TOMPKINS CO., N. Y.

A neighboring farmer always kills a fine beef every winter, keeping a quarter or half of it himself and selling the remainder to his neighbors. This year we took a forequarter, weighing about 135 pounds at 12 cents a pound. It was a young cow, well fattened and tender. The beef was dressed on Friday, and cut down and delivered on Saturday. My neighbor's daughter and I have owned a steam pressure canner in partnership for three years; she was to use it first this winter in caring for her beef, as it was at her home.

On Monday she canned her forequarter, cooked the meat from the bones that were left and used part of it for stews and part for mincemeat, both of which were made and canned the next morning. Then the machine was sent to me in the afternoon. She had 34 quart cans of pure beef with no bones, 22 quart cans of mincemeat, and 9 quart cans of vegetable soup. I quote this to show what can be accomplished with a home canner used over one hole of the ordinary kitchen range.

I did my canning more leisurely, as it is seldom that I can devote a whole day to one line of work only, and the beef would keep all right during any two or three weeks this winter.

After the chores were done Monday evening husband and I went down cellar with a handsaw and butcher knife. I held the light and he cut the beef into convenient-sized pieces, cutting about two ribs to a section, including the attached pieces of backbone and the bone at the other end of the ribs. Then each rib section was cut crosswise into about three pieces, with other sections cut as seemed easiest. Neither of us know anything about scientific meat cutting, but the results were entirely satisfactory.

What I Canned

I had previously scalded my cans and purchased new best grade rubbers. I usually make most of my cans do double service each year, using all those emptied during fall and early winter for my meats. But this time I purchased a dozen extra spring-top quart cans.

I brought a dishpan full of meat up to the kitchen and in one hour had removed the bones and packed 12 cans with cold raw meat, pushing the chunks down closely but leaving an inch or more of space at the top. I placed a piece of suet in the top of each quart can if the meat was pretty lean, and 1 teaspoon of salt in each can. I placed rubbers and tops in position and set all into a cold pantry until morning. After breakfast I put my canner on directly over the fire, set in the triangle that supports the crate of cans, and poured in about 3 quarts of cold water. Then I placed the empty crate or jar container inside and put in two layers of filled cans one on top of the other, with a circle of heavy wire netting between the layers. The water does not come up to the cans so the danger of too rapid heating and consequent breaking of cans is avoided. If I was refilling the canner and the water was hot I should set each can of the lower row in a dish of luke warm water for a few minutes to temper the glass in order to prevent breakage.

With tops of jars tightened part way down, I close the top of the canner, run the weight on the bar that operates the safety valve well out to the end of the bar, close the petcock and screw the top down to the last notch with the wrench made for the purpose.

In 40 minutes I had the pressure up to 15 pounds, the quickest I can secure this from a cold machine. I held it there 80 minutes, and very little fire will do this after the desired pressure is once secured. Then I turned the petcock about half way and let the steam off slowly, requiring about 30 or 40 minutes more. I could have cooled it off at once, but cooling down thus slowly prevents escape of juice from the cans.

Then I unscrewed and lifted off the top of canner, removed the cans to a pad of dry towels, and after a few minutes in order to let the boiling of contents subside a bit, I tightened down all tops without lifting the lids. Not a rubber was forced out of position, and every can sealed perfectly. By this cold-pack method every bit of the meat's natural flavor is retained, and the cans contain nothing but the meat's own juices. I have kept meat two years canned thus, and found it as perfect as the day it went into the cans.

While this lot was processing I filled another dozen cans, and they were then processed in the same way. That evening I washed off the 24 cans in hot suds, wiped and set them down cellar. This had used not quite two-thirds of the meat.

My Canned Stew

I had placed the bones, the forearm and a bit of the neck in a big kettle to cook while the last lot was processing, and the meat was soon all loosened from the bones. I then removed the meat from the bones and used about 2 quarts of the ground stew meat for use as follows the next day:

The next morning I peeled, washed and cut into dice nearly a peck of potatoes, sliced a small cabbage, a dozen medium onions and chopped two or three bunches of celery; I also diced a dozen carrots and a small turnip, and opened a quart can of tomatoes. The vegetables were put into big kettles, with the liquor from the meat bones, the two quarts of cold chopped beef, and 1 cup of rice which had been boiled in clear water, and 1 pound macaroni. A dash of paprika and 1 teaspoon of summer savory was given to each kettle. This was cooked until tender, stirring to prevent burning, then 10 quart cans were filled with the rich thick stew, and processed 50 minutes, then sealed as just directed.

My Mincemeat

I had left 3 more quarts of ground beef for mincemeat. To this I added 9 quarts of chopped apples, cored but not peeled. The skins cooked perfectly tender and added to the color and flavor. I added the juice and grated rind of 2 lemons, 1 orange, 2 big jelly glasses full of sour grape juice made of unripe grapes not sweetened much, but boiled until thick, much like boiled cider; I also put in 1 pint of canned red raspberries, 2 pounds raisins slightly chopped, 1 cup each of maple molasses and sugar, salt and spices to taste, with water to make of proper consistency. When cooked this filled 10 quart cans and left some for a few pies for immediate use. There was nearly enough fat in the beef to make the mincemeat sufficiently rich, but I chopped up 1 cup of suet and added to make sure it had enough. The cans were filled with the hot mincemeat, then placed in the steam canner and brouhgt to 5 pounds pressure and held there 20 minutes.

What Was Left

Besides all this, I had saved out the nicest cuts of steak or tender lean meat next the backbone to run thru the meat chopper for canned hamburg. I used pint cans for this, packing the cans moderately close to within an inch of the top, and adding a piece of suet and ½ teaspoon salt to each can. Then the cans, 10 in number, were processed for 1 hour under 15 pounds pressure. This makes fine hot dishes on quick notice, served as meat loaf or with a brown gravy or sauce, putting the meat right into the gravy, and serving with potatoes, rice or on slices of toast.

I put two or three layers of the remaining beef in a jar, for corned beef to be used or canned later in the winter as seems best, and the remaining cuts I use fresh.

The Saving

Thus we get our summer beef supiron, with heavy fittings of brass. It it would cost if bought at the retail markets, much of it at less than half the retail price. Besides, my cans do double service in a year, and my canner works for me in winter as well as in summer.

The amount of fuel needed to run the canner is surprisingly little, and there is no odor of cooking meat about the house, only when the cover is lifted for sealing the cans, and there is not half so much steam in the house during the operation as the weekly washing usually creates. The work can be rushed if desired so as to can an entire quarter of beef in a day or day and a half. Our canner cost $15 two years ago, and will last a lifetime or more, I am sure, as it is made of heavy boiler iron, with heavy fittings or brass. It is easily operated and is fool-proof because it has an efficient safety valve. If I did not have one today, it would be one of my first war-emergency purchases, as I consider it a great help in keeping down living expenses.

Giving a Pal a Lift

MOTHER'S BIT

Something for Boys to Read

One of our boys in service who was privileged to spend the Christmas holidays at home commented most favorably on the compulsory education in camp in what is known at home as "women's work". To me it was a thought-binder, and I pass it along for consideration of Pennsylvania Farmer folks.

"I've come to realize that there's no reason in the world," he remarked, "why we big, strong, healthy boys should at home be exempt from the many tasks we could so easily and so untiringly perform. Why should mother in the morning have to strip our beds for their daily airing? Why should we expect her to press and otherwise freshen our clothing, when a few minutes spent by us in wielding an iron or clothes brush would soon put them in a most satisfactory condition? Why should we fritter away the time on Sundays while Mother pares the potatoes and does the thousand-and-one things necessary in preparing a tempting and substantial dinner? At camp we find we can handle most any job.

"Why should Mother turn a fellow's socks to get them ready for the laundry? What's the matter with our doing it? Why should Mother pick up the odds and ends in our rooms? We surely see them, and we ought to know that they are unsightly. I tell you what it is, when we boys get into service that is dominated by men, we get the wide-awake call, and we find out we can do all of these little stunts and our own hustling in general, and we respect the power that demands it.

"This war is going to make a man of many a home-pampered son. But what is there to prevent our making men of ourselves in this respect at home? If custom is so strongly established that mothers dread to ask assistance of the very ones they have waited on hand and foot; or if we think it 'manly' for us strong muscular boys to sit idly by while tired mothers and wives uncomplainingly wait on our every demand, then it is, indeed, time Uncle Sam put in an oar and demanded every last one of us to pull a hearty stroke.

" 'Women first', is the heroic call when danger threatens life in many instances, but it seems to me, when it comes to sparing women in their daily losing struggle with unnumbered duties, too many of us rest on the oar and thoughtlessly act out 'women last' "

It was reassuring to listen to this confession and self-arraignment, but his remark—"and we respect the power that demands it", set me to wondering if over-worked mothers are not to blame in a measure. Are we not raising our boys to be dependents, and that, too, at a serious loss to themselves, and therefore, the home, and therefore, the nation? Some of us had better heed the "wide-awake call", and ask ourselves: "Have we been building the strongholds demanded of us? Have we given our best mental and physical strength to the nation by preserving our vitality, our mentality, our staying qualities that make for better homes, for stronger citizens? If the nation is a multiplicity of homes, then it is up to us to make the home in our keeping and those dwelling therein the strongest possible for our country.—Mrs. Louise White Watson, Bucks Co., Pa.

RETURN OF THE BOLERO

We are told that the short fancy jacket style known as the bolero will again be a feature of women's suits this spring and summer. It is universally becoming. This suit is made of marine blue corduroy, and the bolero has a striking design embroidered in white wool or silk on the tabs with which the fronts are finished. A white vest that laps under the wide belt that finishes the jacket affords a pleasing contrast. Many of us have one or two good bolero jacket suits from a former style period that we will thus be able to "trot out" this spring, renovate and bring up-to-date by remodeling the skirts. The last bolero period was that of the narrow hobble skirt, which tendency is apparently returning in a more sensible, comfortable degree; thus it may not be such a very difficult problem to adapt the old suit to the spring styles, and thus save money and wool.

Return of the Bolero
Underwood and Underwood

HOME-MADE GRAHAM FLOUR

We country folks find it difficult to purchase whole wheat and graham flour, as millers are not equipped to grind it, and the merchants do not keep it on account of the small demand for it. In a talk with our local miller I found that he could supply the bran and middlings in as clean a way as the flour, and would put it up in the same kind of paper sacks that he used for his white flour, and that consumer would have to pay about 4 cents a pound for his bran, and about 5 cents for his middlings.

Then I mixed up a batch of bread using 2 quarts of white flour, 1 of bran and 1 of middlings. I used 2 cups of warm mashed potatoes, and the water in which they had been cooked, and found that I had as much rolls and bread as if I had used over 4 quarts of wheat flour, and the quality of it was as good as any graham bread I have ever made or eaten. So I figure that I thus save 2 quarts of flour per week for France, and incidentally a few pennies for Red Cross, by thus using bread material near at hand—Mrs. Evelyn Harris, Kent Co., Md.

RED CROSS HENS

Walter J. Fairbanks, of Chautauqua Co., N. Y. last year induced fifty farmers and their wives to set a hen and devote the chickens produced to the benefit of the Red Cross. The result was 229 chickens, which produced that much extra food for the people and $175 for the Red Cross. "This year," Mr. Fairbanks writes, "my own endeavor will be to increase the output at least six times in numbers. I shall make $1,000 our goal this year.

REMEMBER THE DAYS

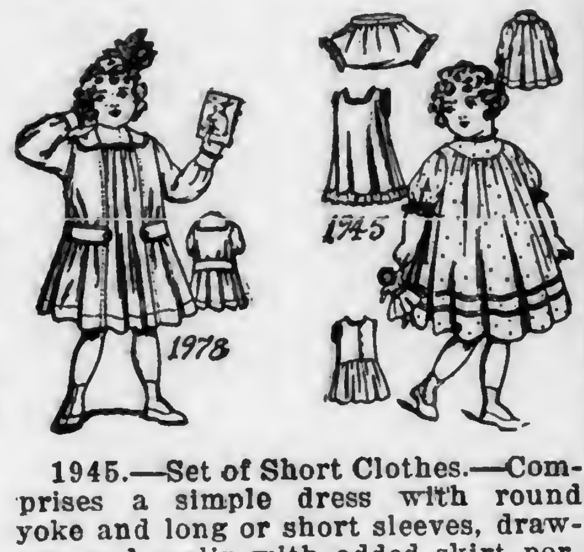
Sunday.—One meal wheatless; one meal meatless.
Monday.—All meals wheatless; one meal meatless.
Tuesday.—All meals meatless; one meal wheatless.
Wednesday.—All meals wheatless; one meal meatless.
Thursday.—One meal wheatless; one meal meatless.
Friday.—One meal wheatless; one meal meatless.
Saturday.—All meals porkless; one meal wheatless; one meal meatless.

On Wheatless Days.—Use no bread, crackers, pastry or breakfast foods containing wheat. Use no wheat flour in cooking except the smallest amount necessary for thickening soups and gravies, or as a binder in corn or other cereal breads. If you buy bread, pastry or cakes from baker or grocer, buy only wheatless products or Victory Bread (containing one-fifth other cereals than wheat) or Victory Pastry, etc. (containing at least one-third other cereals than wheat).

PENNSYLVANIA FARMER PATTERNS

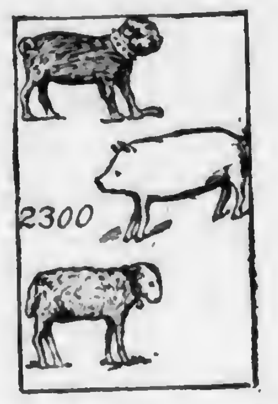
Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261-63 South Third Street, Philadelphia, Pa.

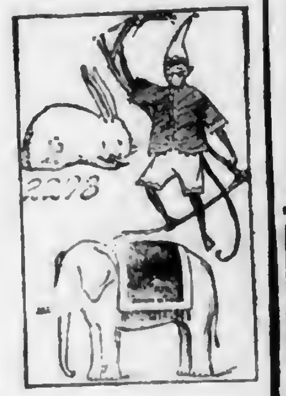
1978.—Child's Dress, with Sleeve in Two Lengths.—The front is full, in panel effect, and the fulness at the waistline is held by a belt. The pattern is cut in 4 sizes: 2, 4, 6 and 8 years. It requires 2½ yards of 36-inch material for a 4-year size. Price, 10 cents.



1945.—Set of Short Clothes.—Comprises a simple dress with round yoke and long or short sleeves, drawers, and a slip with added skirt portion at the back and with or without ruffle. The pattern is in 5 sizes: 6 months, 1 year, 2, 3, and 4 years. It will require for the dress 2⅝ yards of 36-inch material. For the drawers, ¾ yard. For the slip, 1½ yard, for a 2-year size. Price, 10 cents.

2300. — Homemade Animals. — Made of flannel, plush, toweling, eiderdown, or flannellette they are soft and unbreakable. The set includes a sheep, dog and pig. The patterns are cut in one size only. It will require ½ yards of flannel for the sheep, ¾ yard for the dog, and ⅜ yard for the pig. Price, 10 cents.





2298. — Homemade Menagerie. — This comprises a monkey, a rabbit and an elephant. Developed in flannel, canton or domet flannel and stuffed with cotton, down or sawdust, these animals are the delight of little children. The patterns are cut in one size only. It will require one yard of brown flannel for the monkey and ¼ yard of red flannel for his suit. The elephant requires one yard. The rabbit ½ yard. Price, 10 cents.

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2 — It not only floods the house and barns with cheerful light, but also supplies gas for a perfect cooking range — a double service — two city conveniences no home should be without.
3 — There are no noisy engines or exasperating batteries to give you trouble, no delicate parts to get out of order. Country home owners write us that they have enjoyed COLT service for fourteen years without spending a penny for repairs.
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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March 4, 1918.

''Downward,'' ''weak,'' ''easier feeling,'' ''lower,'' ''dull and draggy.'' One or the other of these terms will generally describe the condition of the market this week in practically every kind and variety of fruit and vegetables. Supplies of potatoes are being hauled in, in almost sufficient quantity by the nearby farmers to meet the entire requirements of this market. And the movement is very slow and draggy on potatoes from all sections, at lower prices. Many of the New Jersey potatoes are being sold at 45 to 60 cents per ⅝-bushel basket. New York State potatoes are drawing $1.75 to $1.90 per cwt., and Pennsylvania $1.75 to $2.10, mostly $1.90 to $2. Eastern Shore potatoes are moving slowly around $2.25 for No. 1's, with No. 2's bringing around $1.25. The first straight car of new potatoes from Florida has made its appearance on the market and sold at $8 a barrel for the No. 1 stock, with No. 2 at $7.

Sweet potatoes seem to be one of the few exceptions to the lower tendency as they are somewhat firmer than last week's report, especially the New Jersey stock which is selling at $1 to $1.50 per ⅝-bushel basket. Southern sweets in bushel hampers are selling at $1 to $1.50 for primes, and 75 cents to $1.25 for seconds and mediums.

Vegetables

Dried beans are a little easier, Marrows selling at $15 to $15.25; pea and medium, $13.50 to $14 and red kidneys $13.75 to $14. Florida green beans are gradually increasing in supply and while a few strictly fancy have sold as high as $6 per hamper, the bulk of the sales on choice stock have been at $5 to $5.50, with poorer quality at $4 to $4.50. Wax beans are selling all the way from $4 to $5.50 as to quality. There has been a big decline in the prices of new beets with sales now being made at $1.25 to $1.75 a crate, which is from 50 cents to $1 lower than the week previous. Old beets from Pennsylvania and New Jersey points have also made a big decline of at least $1 a barrel, and are now only drawing $2 to $2.50. Old cabbage shows the biggest decline of any commodity, prices now being from $30 to $33 a ton lower than last week. Sales are now being made at $25 to $30 a ton for best stock, with poor and heavily trimmed stock as low as $20. New cabbage is also much lower with best selling at $1 to $1.15 per hamper and yellow from 65 to 75 cents.

Carrots are very plentiful, many of them poor and the movement is slow and draggy mostly at $1 to $1.50 a barrel with a very few at $1.75. Cauliflower is about steady at $1.25 to $1.35 a crate for best, with poor and yellow at 50 to 75 cents. Celery is dull, weak and selling very low. Florida celery brings from 75 cents to $1.25 a crate; New York State from 50 cents to $2 a crate; California $2 to $3 a crate, and Pennsylvania 8 to 12 cents a bunch. Egg plants are in light supply and in fair demand at $4.50 to $5.50 per crate. Endive and escarol are much more plentiful and lower, sales averaging from $2.75 to $3 a barrel. Horse radish is about steady at $6 to $8 a barrel. Strictly fancy lettuce is scarce and bringing high prices, best selling readily at $2.50 to $2.75 per hamper. The majority of the supplies, however, are only poor to ordinary, selling from $1 to $2, mostly at $1.25 to $1.50. Quite a few cars of California iceberg are arriving on the market and selling all the way from $2.25 to $2.75 a box. Mushrooms are more plentiful and the market easier, most sales averaging from 40 to 50 cents a pound.

Onions are plentiful and with the demand slow the market is dull and draggy with best stock bringing $1.75 a cwt; and fom this on down to $1.25. No. 2's are selling at 75 cents to $1. After ruling extremely high for several weeks Pennsylvania parsnips have hit the toboggan and are from 75 cents to $1 a barrel lower than last week; prices now ranging from $2 to $2.50. The same grade of parsley that sold last week at $15 to $18 a barrel now only draws $5 to $6. While strictly fancy peas are scarce and would command good prices the majority of the arrivals are very poor, selling at the low prices of $2.50 to $3.50 per hamper. Radishes are steady and unchanged at $2 to $4 per 100. Peppers are in light supply and steady at $4 to $6.50 a crate. Altho spinach is in light supply the market has eased off and best is now selling at $2.50 a bushel. Shallots are selling at $3 to $4 a barrel. Tomatoes are the one great exception to the general decline. This vegetable is very scarce and bringing very high prices, fancy 144-size selling at $5 to $6.50 per crate and choice 180 size at $4 to $5.50. White tunips are showing a wide range, quality mostly poor and bringing from $1.50 to $3.00 a barrel. Rutabagas are in light supply, but easy at $1.75 to $2.25 per cwt. Watercress is selling slowly at 1½ to 2 cents a bunch.

Fruits

Apples are in line with the vegetable market and prices are generally lower than last week's quotations. Supplies have been quite liberal and much of the fruit only poor to ordinary in quality, which is moving very slowly and in the buyer's favor. Strictly fancy fruit is in light supply. Range of prices is about as follows: Baldwins, $3 to $5.50; Ben Davis, $3 to $4.25 with extra fancy $4.75; Black Twigs, $3 to $5; Ganos, $3 to $4.25; Greenings, $3 to $6; Kings, $3.50 to $6; Hubbardsons, $3 to $5; Spys, $3.50 to $5.50; Stayman Winesaps, $3.50@5.50; York Imperials, $3 to $5; Winesaps, $3.50 to $6; Rome Beauty, $4 to $5.50; Russett, $3 to $5. Mixed and common, $2 to $3.50. Receipts of box apples have also been quite liberal with a wide range in quality. Strictly fancy fruit is slightly easier, while poor and ordinary is lower. Extra fancy Rome Beauty sold from $1.75 to $2.75; fancy from $1.75 to $2.25, and choice from $1.25 to $1.75. Extra fancy Pearmain sold at $2 to $2.50, fancy, $1.75 to $2.25. Extra fancy Spitz, $2 to $2.50. Extra fancy Winesaps, $2 to $2.75; extra fancy Staymans, $1.75 to $2.75; fancy Staymans, $1.75 to $2.50; Black Bens, $1.75 to $2.10. Keiffer pears are in light supply, but moving slowly at $2 to $2.50 per barrel.

Best strawberries are selling generally from 25 to 37 cents per quart, but many arriving in very bad order and poor condition due to delay in transit. These are selling at extremely low prices.

Poultry

As has been noted in these columns, Rule No. 14 of the Federal Food Administration has practically stopped all trading in fowls and pullets. Quotations on other live poultry are as follows: Soft-meated, young roosters, 28 to 32 cents; staggy young roosters, 27 to 28 cents; old roosters, 24 to 26 cents; Ducks, 28 to 34 cents; geese, 28 to 32 cents; guineas, 35 cents to $1.10 per pair. Pigeons per pair, 30 to 40 cents.

Eggs

Following the big break of 18½ cents a dozen as reported in these columns last week the market has been gradually easing off, owing to the increased supplies which have been coming from all egg-producing sections. And today eggs from nearby Pennsylvania, New Jersey, Maryland and Delaware points are selling at 34 cents for current receipts and 35 cents for firsts. Western extra firsts are bringing 35 cents, with firsts at 34 cents. Southern eggs from points in North Carolina, Tennessee and Kentucky are selling at 33 to 33½ cents. The present indications are that the market will hold steady at these figures, possibly fluctuating a little in either direction.

NEW YORK PRODUCE

New York City, March 4, 1918.

There is a better demand for butter and market is improving. Eggs are a little lower but selling freely. Dressed poultry very quiet. Live poultry at a standstill. Apples plenty and weak. Prices declining in vegetable market. Potatoes are dull and weak.

Butter. — Creamery, extras (92 score), per pound, 47½c; higher score, 48@48½c; thirds to firsts, 43@47c; state dairy, 41@47c; ladles, 34@37c.

Cheese. — Colored specials, 26@26½c. Daisies, 24@27c.

Eggs.—Fresh gathered extras, 36@37c; extra firsts, 35c; nearby white, fine to fancy, 41@43c; ordinary to good, 39@40c; browns 35@36c.

Vegetables and Greens. — Beets, per 100 bunches, $3@4. Onions, per 100-lb. bag, $1@2.25. Potatoes, Jersey, $1.66@1.90 per 100 lbs; state and western, $1.80@2.08 per 100 lbs. Carrots, $1.25@1.75 per barrel.

Apples.—Winesap, $4@6; York Imperial, $3.50@4.50; Twenty Ounce, $4@5.25; King, $4@6; Baldwin, $3.50@5.50.

YORK PRODUCE MARKET

York, Pa., March 4, 1918.

Markets are unchanged from that reported last week. Prices are stationary with the exception of eggs. They have dropped to 35 and 36 cents per dozen.

Eggs.—35@40c per dozen.

Butter.—Country, 48@50c lb; separator, 50@55c lb. Milk, 10c quart.

Poultry.—Few sales. Prices ranging from 20 to 27 cents; dressed, 75c@$1.75 apiece.

Vegetables.—Potatoes, 12@18c ½ pk; $1@1.25 a bu; lettuce, 5@15c head; cabbage, 5@20c head; beets, 5c bch; radishes, 5@7c bch; onions, 12@15c bx; 25c ½ pk; lima beans, 35@40c quart; soup beans, 15@18c pt; celery, 5@10c a stalk; turnips, 20@25c ½ pk; corn meal, 10@12c quart.

Fruit.—Apples, 10@40c ½ pk.

Country Butchering. — Sausage, 30@34c lb; smoked, 32@36c lb; back-bone, 25@30c lb; spare ribs, 32c lb; tenderloin, 45@48c lb; steak, 34@38c lb; pudding, 24c lb; lard, 32@33c lb; cured hams, 40@45c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 90c; rye, $1.80; bran, $2.50 cwt; middlings, $2.60@2.85 cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.65; rye, $1.70; oats, 75c; bran, $48 per ton; middlings, $50@55 per ton.

LANCASTER PRODUCE

Lancaster, Pa., March 4, 1918.

The egg market suffered a sensational decline here today and eggs that sold for fifty cents a dozen a week ago, were disposed of for as low as 33 cents a dozen. The demand became so great at that price, however, that the market later rallied and closing figures were 34 and 35 cents a dozen. Butter was not over-plentiful and brought from 55 to 58 cents. Poultry of all kinds was very scarce and prices were high.

Butter and Eggs.—Creamery butter, 55@58c per lb.; country butter, 55@58c; fresh eggs, 33@35c per dozen.

Poultry.—Dressed old chickens, $1.25@1.35; dressed young chickens, $1.25 each; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Fruits.—Spinach, 20c per ¼ pk; turnips, 18@20c ½ pk; potatoes, 12@20c ½ pk; do., $1@1.40 per bu; sweet potatoes, 25c ½ pk; cabbage, 5@10c head; lettuce, 8@12c head; beets, 7c bch; celery, 5@10c bch; lima beans, 18c pt; apples, 20@30c ½ pk.

Grain Market.—Wheat, $2.10 bu; chicken wheat, $2.10; ear corn, $1.77; shelled corn, $1.72; rye, $2; timothy hay, $26@27 ton; mixed hay, $25@26; wheat straw, $17@18.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 4, 1918.

Beef Cattle.—The market for steers ruled a shade firmer under stronger western advices, but buyers were showing little interest. Cows sold slowly and ruled weak. Transportation difficulties were showing improvement, tho there was still some complaint of delays.

Steers, choice, $12.75@13.75; extra, higher; fair to good, $11@12.50; bulls, $8@10.50; cows, fat per lb., choice, $8@9½c; fair to good, per lb., 7@8c; bologna cattle, 5½@7c; calves, extra choice, $17@17.50; fair to good, $15@16; common, $12@14; Tennessee and southern, $8@15.

Sheep and Lambs.—Sheep sold slowly, but offerings were only moderate and prices ruled steady. Lambs were a shade firmer, but demand was only moderate.

Sheep.—Wethers, extra, $14@14.50; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $12@13. Lambs.—Choice, $17.75@18.25; do., medium, $16.50@17; inferior, $14.50@15.50.

Hogs.—The market ruled a shade easier, but desirable stock sold fairly at revised prices. Quotations for best western $19.

City Dressed Stock.—Steers, heifers and cows were quiet but steady under moderate offerings. Lambs sold fairly and ruled a shade firmer. Other descriptions showed little change.

Steers, 16@21c; heifers, 15@19c; cows, 12@18c; calves, 23@24½c; southern and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 25@27c; extra, 30c; hogs, 25c.

NEW YORK LIVE STOCK

New York City, March 4, 1918.

Beeves.—Receipts 2,870; steady. Steers, $11@14; bulls, $7@11.75; cows, $4.60@10.25.

Calves. — Receipts, 1,600; lower. Veals, $14@18; tops, $18.50; culls, $10@13; barnyard calves, $7@9; yearlings, $6@7.

Sheep and Lambs.—Receipts, 2,940; firm. Sheep, $8@12; lambs, $15.50@18; yearlings, $14@14.50.

Hogs.—Receipts, 8,270; steady at $17.75@18; pigs, $17.25@17.75; roughs, $16.50.

LANCASTER LIVE STOCK

Lancaster, Pa., March 4, 1918.

Cattle.—Receipts, 661 head, compared with 271 head last Monday. Market slow; prices a shade lower. Good to choice steers, $11@12.65; medium to good, $10.50@11.15; common to medium, $9@10; good to choice heifers, $10@11.50; medium to good, $8.90@9.25; common to medium, $8@8.50; good to choice cows, $8.50@9.30; medium to good $7.50@8.25; common to medium, $6.25@7; bologna and fair flesh cows, $5.50 to 6.15; good to choice bulls, $10.50@11.50; medium to good, $9.75@10.25; common to medium, $8.50@9; bologna bulls, $8.25@9.75; good to choice stock bulls, $9.25@9.75; medium to good, $8.60@9.15; common to medium, $8.25@8.90.

Hogs.—Receipts, 811 head; market active; prices steady. Best grades, $17.50@18.25; roughs, $16.25@17.25.

BUFFALO LIVE STOCK

Buffalo, N. Y., March 4, 1918.

Cattle.—Receipts, 2,300; strong. Prime steers, $13.65@14; shipping steers, $11@13.50; butchers, $10@13; yearlings, $11@13.25; heifers, $8@11.75; cows, $5@10.75; bulls, $7@11.50; stockers and feeders, $7.50@9.50; fresh cows and springers, $65@135; cows, receipts 200; steady; $7@17.50.

Hogs.—Receipts 9,600; strong. Heavy, $18@18.10; mixed and yorkers, $18.10@18.25; light yorkers and pigs, $18@18.25; roughs, $16.25@16.40; stags, $13@14.

Sheep and Lambs.—Receipts, 6,000; strong. Lambs, $13@18.40; yearlings, $12@15.75; wethers, $13.25@13.75; ewes, $7@13; mixed, $13@13.25.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 4, 1918.

Cattle steady; supply light. Prime, $12.50@13.

Sheep higher; supply light; prime wethers, $13@14; cull and common, $6@8; lambs, $14@18; veal calves, $16@16.50.

Hogs steady; receipts, 25 double decks; prime heavies, $17.40@17.50; mediums, heavy yorkers and light yorkers, $18@18.10; pigs, $17.50@17.75; roughs, $15@16.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., March 4, 1918.

Baled Hay and Straw.—Receipts, 36 tons of hay. Hay was in small supply and firm, with demand readily absorbing all offerings. Straw was well cleaned up and firm.

Timothy hay, according to location. No. 1 large bales, nominal, $31@32; No. 1 small bales, nominal, $31@32; No. 2, $29@30; No. 3, $26@27; sample, $21@23; no grade, $17@19. Clover-mixed hay, light mixed, $29@30; No. 1 do., $27.50@28.50; No. 2 do., $24.50@25.50.

Straw.—No. 1 straight rye, $19@19.50; No. 2 do., $18@18.50; No. 1 tangled rye, $16.50@17; No. 2 do., $15.50@16; No. 1 wheat straw, $15.50@16; No. 2 do., $14.50@15; No. 1 oat straw, $15.50@16; No. 2 do., $14.50@15.

Loose Hay and Straw.—Average price prime timothy, $1.50@1.60 per 100 pounds; mixed $1.40@1.50 per 100 pounds; straw, 85@95c per 100 pounds.

Corn.—No. 2 yellow, $1.98@2.

Oats.—No. 2 white, $1.05@1.05½.

NEW YORK HAY AND GRAIN

New York City, March 4, 1918.

Feed.—The spot markets were extremely dull with no offerings reported, and the same was true of futures. Mills continue to hold off and efforts are mainly in trying to make deliveries on contracts placed some time ago. The freight congestion is apparently just as bad as ever, but with continued favorable weather some headway will undoubtedly soon be made. Demand for oil cake continues good and sales are being made at from $49 to $51 per ton. Western mills also report an excellent inquiry and the output is readily absorbed.

All spot prices have been withdrawn.

Hay and Straw.—There is no material change in the situation today. A fairly steady holding of goods at Thirty-third street hay warehouse on basis of recent quotations, but at other harbor points there is some surplus and market somewhat in buyers' favor. Rye straw very scarce and firm.

Hay.—No. 1 large or small bales, $38@39; No. 2, $34@38; light clover, mixed, $34@37. Rye straw, $21@28 per ton.

Corn.—Nominal.

Oats.—No. 2 white, $1.05@1.06.

Rye.—$2.50.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., March 4, 1918.

Hay.—The better grades of hay are wanted. Poor hay getting a little hard to sell. Demand here is excellent also for mixed hay and clover.

No. 1 timothy, $32.50@33; No. 2 timothy, $30.50@31; No. 3 timothy, $28@28.50; No. 1 light mixed, $31@31.50; No. 1 clover mixed, $31.50@32.50, No. 2 clover mixed, $28.50@30.50; No. 1 clover, $31.50@32.50; No. 2 clover, $28.50@30.50.

Straw.—Little or no straw arriving and what is coming in is commanding top figures; would advise shipments.

No. 1 oat, $17.25@17.50; No. 2 oat, $17@17.25; No. 1 wheat, $17@17.50; No. 2 wheat, $16.50@17; No. 1 rye, $17.50@18; No. 2 rye, $17@17.50.

Ear Corn.—Not much arriving, demand good; market strong. No quotations.

Oats.—Arrivals heavy while the demand is a little bit lax; market a trifle easier.

No. 2 white, $1@1.00½; standard 99½c@$1; No. 3 white, 98@99c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., March 4, 1918.

Butter.—There was not much wholesale trading, as usual on Saturday, but offerings of solid-packed creamery as well as of prints were moderate and prices ruled steady.

Western, fresh, solid-packed creamery, extra, 48c; higher-scoring goods, 49@50c; extra firsts, 47½c; firsts, 46½@47c; seconds, 45@46c; sweet creamery, extra, 49c; under grades, 46@48c; nearby prints, fancy, 52c; do., average extra, 49@51c; firsts, 47@48c; seconds, 45@46c; special brands jobbing at 53@55c.

Receipts.—As compiled by the Bureau of Markets, 4,095 tubs butter and 5,175 cases of eggs.

BINDER TWINE PRICES FIXED

Following an investigation of the cost of manufacturing binder twine the U. S. Food Administration on Feb. 28 announced the maximum advances over cost of sisal which may be charged the manufacturer. The scale is based upon the present price of 19 cents per pound for sisal fiber. Standard and sisal binder twine containing 500 feet to the pound should be sold in carload lots of 20,000 pounds or more at a maximum advance of 4 cents per pound above the cost of sisal. Lots of 10,000 pounds or more, but less than 20,000 pounds, are to be sold at an advance of not more than 4⅛ cents per pound above the primary price. All smaller amounts are to carry an advance of not more than 4¼ cents per pound.

Twine that contains 550 feet to the pound should be sold at a maximum advance of 1¾ cents per pound above the price for standard twine; 600 feet to the pound, at an increase of 3 cents; 650 feet to the pound at 4½ cents per pound increase. Pure manila twine containing 650 feet to the pound should be sold at an advance of not more than 6 cents per pound above the price of standard twine. All of these prices are f.o.b. factory. In formulating this scale of prices the Food Administration has considered the increased weight of binder twine over its sisal content. It has made allowances for the fact that manufacturers now have on hand sisal which was purchased at lower prices than rule today or twine that was manufactured from the lower priced sisal.

WOOL TRADE REVIEW

The Boston ''Commercial Bulletin'' of March 2 said:

''Demand for wools suitable for military uses has been of fair proportions this week and the market has been firm for wools of this type. Business proceeded smoothly until the announcement of Acting Quartermaster General Goethals on Thursday that the Government would exercise its option on all foreign importations, grading low quarter-blood to three-eighths, both combing and clothing, at prices five percent under July 30, where the wools were bought December 15 or subsequently. This announcement unsettled the trade momentarily.

''Manufacturers are finding a steady civilian demand but are avoiding over-commitments on account of the expectation of large Government orders.''

Ohio and Pennsylvania fleeces.—Delaine washed, 83@85c; delaine unwashed, 75c; ½-blood combing, 77c; ⅜-blood combing, 77c.

Michigan and New York fleeces.—Fine unwashed, 63@64c; delaine unwashed, 73c; ½-blood unwashed, 75c; ⅜-blood unwashed, 76@77c.

Wisconsin, Missouri and average New England.—½-blood, 70@72c; ⅜-blood, 75c; ¼-blood, 74c.

Virginia, Kentucky and similar.—½-blood unwashed, 77@78c; ⅜-blood unwashed, 78@79c.

TOBACCO MARKET

Tobacco stripping is now well under way and deliveries were heavy during the week. The coming of mild weather has resulted in the general unlimbering of activity and a great effort to make up for lost time. It seems probable that the close of the current month will see the greater part of the crop pass from the hands of growers. However, there are yet scattering unsold crops in nearly all localities and it is not improbable that estimates as to the percentage sold have been somewhat too high. Those offerings consist largely of small lots and often of relatively inferior quality.

Prices were practically the same as in past weeks, the lowest sales being at about $25 per cwt. thru with a range of sales running up to $30. With prevailing high prices the return per acre has become the subject of much comment. Many sellers receive three to four hundred dollars per acre and the majority of them get as much or more for his tobacco than the market worth of the land on which it was grown.—H. E. Tweed. March 4, 1918.

The Switchman's Story

By FRANK H. SPEARMAN.

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(Concluded from last week.)

Shockley looked at Chris and said: "Why don't you take hold switching with me and get three dollars?"

Chris was thunderstruck. First he said Callahan wouldn't let him, but Shockley "guessed yes." Then Chris figured. To save the last of the hundred dollars necessary to get the woman and the babies over—it could be done in three months instead of six, if only Callahan would listen. But when Shockley talked Callahan always listened, and when he asked for a new switchman he got him. And Chris got his three; to him a sum unspeakable. By the time the woman and the children arrived in the fall, Chris would have died for Shockley.

The fall that saw the woman and the stunted subjects of the Czar stowed away under the bench in Little Russia brought also the cowboys down from Montana to bait the Russians.

One stormy night, when Chris thought it was perfectly safe to venture up to Rubedo's after groceries the cowboys caught him and dragged him over to Pat Barlie's.

It was seven when they caught him, and by nine they had put him thru every pace that civilization could suggest. Peg Leg Reynolds, as always, master of ceremonies, then ordered him tied to the stove. When it was done, the cowboys got into a big circle for a dance. The fur on Chris' coat had already begun to sizzle, when the front door opened. Shockley walked in.

Straight, in his ambling, hurried way, he walked past the deserted bar thru the ring of cowboys at the rear of Chris frying against the stove, and began cutting him loose. Thru every knot that his knife slit he sent a very loud bad word, and no sooner had he freed Chris than he jerked him by the collar, as if quarreling with him, toward the back door, which was handy, and before the cowboys got wind he had shoved him thru it.

"Hold on there!" cried Peg Leg Reynolds, when it was just too late. Chris was out of it, and Shockley turned alone.

"All right, partner; what is it?" he asked amiably.

"You've got a ripping nerve."

"I know it."

"What's your name?"

"Shockley."

"Can you dance?"

"No."

It was Peg Leg's opportunity. He drew his gun. "I reckon maybe you can. Try it," he added, pointing the suggestion with the pistol. Shockley looked foolish; he didn't begin tripping soon enough, and a bullet from the cowboy's gun splintered the baseboard at his feet. Shockley attempted to shuffle. To any one who didn't know him it looked funny. But Peg Leg was a rough dancing master, and before he said enough an ordinary man would have dropped exhausted. Shockley, breathing a good bit quicker, only steadied himself against the bar.

"Take off your hat before gentlemen," cried the cowboy. Shockley hesitated, but he did pull off his cap.

"That's more like it. What's your name?"

"Shockley."

"Shockley?" echoed Reynolds with a burst of range amenities. "Well, Shockley, you can't help your name. Drink for once in your life with a man of breeding—my name's Reynolds. Pat, set out the good bottle—this guy pays," exclaimed Peg Leg, wheeling to the bar.

"What'll it be?" asked Pat Barlie of Shockley, as he deftly slid a row of glasses in front of the men of breeding.

"Ginger ale for me," suggested Shockley mildly. The cowboys put up a single yell. Ginger ale! It was too funny.

Reynolds, choking with contempt, pointed to the yard master's glass. "Fill it with whiskey," he shouted. "Fill it, Pat!" he repeated, as Shockley leaned undecidedly against the bar. The yard master held out the glass, and the bar keeper began to pour. Shockley looked at the liquor a moment; then he looked at Reynolds, who fronted him gun in one hand and red water in the other.

"Drink!"

Shockley paused, looked again at the whiskey and drew the glass towards him with the curving hand of a drinker. "You want me to drink this?" he half laughed, turning on his baiter.

"I didn't say so, did I? I said drink!" roared Peg Leg.

Everybody looked at Shockley. He stood fingering the glass quietly. Somehow everybody, drunk or sober, looked at Shockley. He glanced around at the crowd; other guns were creeping from their holsters. He pushed the glass back, smiling.

"I don't drink whiskey, partner," said Shockley gently.

"You'll drink that whiskey, or I'll put a little hole into you!"

Shockley reached good-naturedly for the glass, threw the liquor on the floor, and set it back on the bar.

"Go on!" said Shockley. It confused Reynolds.

"A man that'll waste good whiskey oughtn't t' live, anyhow," he muttered, fingering his revolver nervously. "You've spoiled my aim. Throw up your hat," he yelled. "I'll put a hole thru that to begin with."

Instead, Shockley put his cap back on his head.

"Put a hole thru it there," said he. Reynolds set down his glass, and Shockley waited; it was the cowboy who hesitated.

"Where's your nerve?" asked the railroad man. The gun covered him with a flash and a roar. Reynolds, whatever his faults, was a shot. His bullet cut cleanly thru the crown, and the powder almost burnt Shockley's face. The switchman recovered himself instantly, and taking off his cap laughed as he examined the hole.

"Done with me?" he asked evenly, cap in hand.

Peg Leg drained his glass before he spoke. "Get out!" he snapped. The switchman started on the word for the front door. When he opened it, everybody laughed—but Shockley.

Maybe an hour later Reynolds was sitting back of the stove in a card game, when a voice spoke at his ear. "Get up!" Reynolds looked around into a pistol; behind it stood Shockley, pleasant. "Get up!" he repeated. Nobody had seen him come in; but there he was, and with an absolutely infantile gun, a mere baby gun, in the yellow light, but it shone like bright silver.

Reynolds with visible embarrassment stood up.

"Throw your cannon into the stove, Reynolds, you won't need it," suggested Shockley. Reynolds looked around; there appeared to be no hopeful alternative; the drop looked very cold; not a cowboy interposed. Under convoy, Reynolds stumped over to the stove and threw in his gun, but the grace of the doing was bad.

"Get up there on the bar and dance; hustle!" urged Shockley. They had to help the confused cowboy up; and when he stood shamfaced, looking down on the scene of his constant triumphs, and did a painful single foot, marking time with his peg, the cowboys, who had stood their own share of his bullying, roared. Shockley didn't roar; only stood with busy eyes where he could cover any man on demand, not forgetting even Pat Barlie.

Peg Leg, who had danced so many in his day, danced, and his roasting gun sputtered an accompaniment from the stove; but as Shockley, who stood in front of it, paid no attention to the fusillade of bullets, good form prevented others from dodging. "That'll do; get down. Come here, Chris," called Shockley. Chris Oxen, greatly disturbed, issued from an obscure corner.

"Get down on your knees," exclaimed the yard master, jerking Reynolds with a chilly twist in front of the frightened Russian. "Get on your knees; right where I threw your whiskey," and Shockley, crowding Reynolds down to his humiliation, dropped for the first time into range civilities himself, and the shame and the abasement of it were very great.

"Boys," said the yard master, with one restless eye on Reynolds and one on everybody else, as he pointed at Chris, "this man's coat was burnt up. He's a poor devil, and his money comes hard. Chip in for a new coat. I've nothing against any man that don't want to give, but Reynolds must pass the hat. Take mine, you coyote."

Nearly everybody contributed as Reynolds went round. Shockley made no comments. "Count it," he commanded, when the fallen monarch had finished; and when the tale was made, Shockley told Pat Barlie to put in as much more as the cap held, and he did so.

"There, Chris; go home. I don't like you," added Shockley, insolently, turning on Reynolds. "You don't know what fun is. This town won't hold you and me after tonight. You can take it or you can leave it, but the first time I ever put eyes on you again one of us will cash in."

He backed directly towards the front door and out.

Peg Leg Reynolds took only the night to decide; next day he hit the trail. The nervy yard master he might have wiped out if he had stayed, but the disgrace of kneeling before the dog of a Russian was something never to be wiped out in the annals of Benkleton. Peg Leg moved on; and thereafter cowboys took oc-

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casion to stop Shockley on the street and jolly him on the way he did the one-legged bully, and the lights were shot no more.

The railroad men swore by the new yard master; the Russians took their cigarettes from their mouths and touched their caps when Shockley passed; Callahan blessed his name; but little Chris worshiped him.

One day Alfabet Smith dropped off at Benkleton from Omaha headquarters. Alfabet was the only species of lizard on the pay roll—he was the West End spotter. "Who is that slim fellow?" he asked of Callahan as Shockley flew by on the pilot board of an engine.

"That's Shockley."

"Oh, that's Shockley, is it?"

But he could say little things in a way to make a man prick hot all over.

"Yes, that's Shockley. Why?" asked Callahan with a dash of acid.

"Nothing, only he's a valuable man; he's wanted, Shockley is," smiled Alfabet Smith, but his smile would freeze tears.

Callahan took it up short. "Look here, Alfabet. Keep off Shockley."

"Why?"

"Why? Because you and I will touch, head on, if you don't."

Smith said nothing; he was used to that sort. The next time Bucks was up, his assistant told him of the incident.

"If he bothers Shockley," Bucks said, "we'll get his scalp, that's all. He'd better look after his conductors and leave our men alone."

"I notice Shockley isn't keeping his frogs blocked," continued Bucks, reverting to other matters. "That won't do. I want every frog in the yard blocked, and tell him I said so."

But the frog-blocking was not what worried Shockley; his push was to keep the yard clean, for the month of December brought more stuff twice over than was ever poured into the front-end yard before. Chris, tho, had developed into a great switchman, and the two never let the work get ahead.

So it came that Little Russia honored Chris and his big pay check above most men. Shockley stood first in Little Russia; then the Czar, then Chris, then Calahan. Queen Victoria and Bismarck might have admirers; but they were not in it under the bench.

When the Russian holidays came, down below, Chris concluded that the celebration would be merely hollow without Shockley; for was not the very existence of Little Russia due to him? All the growth, all the prosperity—what was it due to? Protection. What was the protection? Shockley. There were brakemen who argued that protection came from the tariff; but they never made any converts in Little Russia, where the inhabitants could be induced to vote for president only on the assurance that Shockley was running.

"Well, what's the racket anyhow, Chris?" demanded Shockley lazily, after Cross-Eyes trying to get rid of the invitation to the festivities had sputtered switch-English five minutes at him.

"Ve got Chrismus by us," explained Chris desperately.

"Christmas," repeated Shockley grimly. "Christmas. Why, man, Christmas don't come nowhere on earth in January. You want to wind up your calendar. Where'd you get 'hem shoes?"

"Dollar sefenty-vife."

"Where?"

"And don't you know a switchman oughtn't t' put his feet in flatboats? Don't you know some day you'll get your foot stuck in a tongue or a guard? Then where'll you be, Dutch, with a string of flats rolling down on you, eh?"

However, Chris stuck for his request. He wouldn't take no for an answer. Next day he tired Shockley out.

"Well, for gracious sake let up, Chris," said the yard master at last. "I'll come down a while after Twenty-three comes in. Get back early after supper, and we'll make up Fifty-five and let the rest go."

It was a pretty night; pretty enough over the yard for anybody's Christmas, Julian or Gregórian. No snow, but a moon, and a full one, rising early over the Arikaree bluffs and a frost that bit and sparkled, and the north wind asleep in the sand hills.

Shockley, after supper, snug in a pea-jacket and a storm cap, rode with the switch engine down from the roundhouse. Chris, in has astrakhan reefer and turban, walking over from the dugouts at the stock-yard with almost the roll of Shockley himself.

Happily for Christmas in Little Russia, Twenty-three pulled in on time; but it was long and heavy that night. It brought coal and ties, and the stuff for the Fort Rawlins depot, and a batch of bridge steel they had been waiting two weeks for—mostly Cherry Creek stuff—eleven cars of it.

The minute the tired engine was cut off the long train, up ran the little switch engine and snapped at the headless monster like a coyote.

Out came the coal with a clatter; out came the depot stuff with a sheet of flame thru the goat's flues—shot here, shot there, shot yonder—flying down this spur and down that and the other, like stones from a catapult; and the tough-connected smut-faced, blear-eyed yard engine coughed and snorted and spit a shower of sparks and soot and cinders up into the Christmas air. She darted and dodged and jerked, and backed up and down and across the lead, and never from a fraction of a second took her eye off Shockley's lamp. Shivering and clang'ng and bucking with steam and bell and air, but always with one smoky eye on Shockley's lamp, until Twenty-three was wrecked clean to the caboose, and the switch engine shot down the main line with the battered way-car in her claws like a hawk with a prairie dog.

Then there was only the west-bound freight, Fifty-five, to make up with the Fort Rawlins stuff and the Cherry Creek steel, which was "rush", and a few cars of ties flung on behind on general principles. It was quick work now—sorting and moving the bridge steel—half an hour for an hour's work, with the north wind waking at the clatter and sweeping a bank of cloud and sand across the valley. Shockley and Chris and the goat crew put at it like black ants. There was releasing and setting and kicking and splitting, and once in a while a flying switch, dead against the rubrics; and at last the whole train of steel was in line, clean as the links of a sprocket, and ready to run in on the house track for the caboose.

For that run Chris set the east house-track switch, cross the track, and swung a great circle with his lamp for the back. To get over to the switch again, he started to re-cross the track. In the dark his ankle turned on a lump of coal; he recovered lightly, but the misstep sent his other foot wide, and with a bit of a jolt Rubedo's new shoe slipped into the frog.

Up the track he heard a roll of stormy coughs from the engine gathering push to shove the string of flats down. They were coming towards him, over the spot where he stood, on his signal; and he quietly tried to loosen his heel.

The engine's drivers let go, and she roared a steaming oath, and Chris could hear it; but he was glad for his heel would not work quietly out of the frog; it stuck. Then the engineer, unruffled, pulled at his sand lever, and his engine snorted again and her driver tires bit, and slowly she sent the long train of steel down on Chris' switch; he heard the frosty flanges grinding on the face of the rails as he tried to loosen his foot.

Coolly, first, like a confident man in a quicksand; soon, with alarm running into fright. But there was time enough; the head car was four or five lengths above the switch and coming very, very slowly, heavy-like, and squeaking stiffly under its load, yet coming; and he wrenched harder, but his foot stuck. Then he yelled for Shockley. Shockley had gone over to open the Caboose switch; Shockley couldn't hear, and he knew it. And he yelled again.

The sweat broke over him as he turned and twisted. The grip of the frog seemed to stifle him; half the time was gone; the near truck wheels screeched two car-lengths away; and the switchman played his last card. Time and time again Shockley had told him what to do if that moment came in the night; had told him to throw his lamp in the air like a rocket. But Chris had forgotten all that until the flat dropped heavily on the tongue in front of him; then he threw his lamp like a rocket high into the night.

No help came. He raised his arms frantically above his head, and his cries cut the wind. Desperate at last, he threw himself flat to lie outside the rail, to save all but a foot; but the frog held him, and crying horribly he struggled back to his feet, only to sink again half crazy to the ground. As his senses left him he was hardly aware of a stinging pain in his foot, of a wrench at his leg, an instant arm round his back, and his yard master's voice in his ear.

"Jump!" screamed Shickley.

Chris, scrambling frantically on the deadly rails, unable to jump, felt himself picked from the ground, heard a choke in the throat at his ear, and he was flung like a drawbar thru the dark. Shockley had passed a knife blade from vamp to sole, slit the Russian's clumsy shoe, jerked his foot from it, and thrown him bodily into the clear.

Chris staggered panting to his feet. Already the steel was moving slowly over the switch; he heard the sullen pounding of the trucks on the contact; a lantern, burning yet, lay on its side near the stand—it was Shockley's lamp. Chris looked wildly around for his yard master; called out; called Shockley's name; listened. No scream, no groan, no cry, no answer; no sound, but just the steady pounding of the wheels over the contact. The little switchman screamed again in a frenzy, and turning, raced stumbling up the track to the cab. He swung into it, and by signs made the engineer shut off. He tried to talk, and only stammered a lingo of switch-pidgin and the name of Shockley. They couldn't understand it all, but they shut off with faces pinched

and sallow, threw open the furnace door, and grabbing their lanterns ran back. The fireman on his knees held his lamp out under the flat that spanned the contact; he drew shrinking back, and rising, started on the run for the depot to rouse Callahan.

It was Callahan who pulled the pin a moment later, Chris shivering like a rabbit at his side. It was Callahan who gave the pull-ahead order that cut the train in two at the frog, and Callahan who stepped wavering from the gap that opened behind the receding flat—back from something between the rails—back to put his hands blindly out for the target-rod, and unsteadily upon it. He heard Shockley breathing.

Some carried the headlight back, and some tore the door off a box car, and they got him on. They carried him unevenly, stumbling, over to the depot. They laid him on Callahan's mattress in the waiting room, and the men stood all about him; but the only sound was his breathing, and inside under the lamp the receiver, clicking, clicking, clicking, of Bucks and the company surgeon coming on a special ahead of Fifty-nine.

They twisted tourniquets into his quivering flesh, and with the light dying in his eyes they put whiskey to his lips. But he turned his head and spit it from his mouth. Then he looked from face to face about him—to the engineer and to the fireman, and to little Chris and to Callahan, and his lips moved.

Chris bent over him, but try as he would he could not catch the words. And Callahan listened and watched and waited.

"Block—block—" said Shockley's lips. And Callahan wiped them slowly and bent close again and put his ear over them. "Block—block—the—frogs."

And Shockley died.

They lifted the mattress into the baggage room; Callahan drew over it a crumpled sheet. A lantern left, burned on the checking desk, but the men, except Chris, went their ways. Chris hung irresolute around the open door.

The special pulled in, and with the shoes wringing fire from her heels as she slowed, Bucks and a man following close sprang from the step of the coach. Callahan met them; shook his head.

Twenty minutes later Fifty-nine whistled for the yard; but in the yard all was dark and still. One man got off Fifty-nine that night. Carrying his little valise in his hand, he walked in and out of the depot, hanging on the edges of the grouping men, walked alone into the baggage room, and with his valise in his hand drew back the edge of the sheet and, standing, looked. Afterward he paused at the door, and spoke to a man that was fixing a lantern.

"What was his name?"

"Shockley."

"Shockley?"

"Yes."

"Yard master here?"

"Yes. Know him?"

"Me? No, I guess not." He walked away with his valise, and drew his coat collar up in the wind that swept the platform. "I guess I don't want him," he muttered to himself. "I guess they don't want him; not now." And he went back to the man and asked when a train left again for Chicago. He had a warrant for Shockley; but Shockley's warrant had been served.

After the others had gone, Bucks and Callahan and the surgeon talked together in the waiting room, and Chris hanging by, blear-eyed and helpless, looked from one to the other; showed his foot when Callahan pointed, and sat patient while the surgeon stitched the slit where Shockley's blade had touched the bone. Then he stood again and listened. While any one talked Chris would listen; silent and helpless, just listening. And when Bucks had gone upstairs, and the surgeon had gone up stairs, and Callahan, tired and sick, had gone up stairs, and only the operator sat under his lamp at the table, Chris stood back in the gloom in front of the stove and poked stealthily at the fire. When it blazed he dropped big chunks of smutty coal in on it, and wiped his frost-bitten nose with the back of his dirty hand, and looked toward the baggage door and listened—listened for a cry, or a sound or for that fearful, fearful breathing, such breathing as he had not been hearing before. But no cry, no sound, no stertorous breath came out of the darkness, and from under the lamp in front of the operator only the sounder clicked, always talking, talking, talking—talking queer things to Russian ears.

So Chris drew his cap a little lower, for so he always began, pulled mechanically from his pocket a timetable, tore off a strip, and holding it carefully open, sprinkled a few clippings of tobacco upon it, and rolled his cigarette. He tucked it between his lips; it was company for the silence, and he could more easily stop the listening. But he did not light; only pulled his cap again a little lower, buttoned close his reefer, looked at his bandaged foot, picked up his lamp, and started home.

It was dark, and the wind from the north was bitter, but he made a great detour into the teeth of it—around by the coal chutes, a long way round, a long way from the frog of the east house-track switch; and the cold stung his face as he limped heavily on. At last by the ice house he turned south, and reaching the face of the bench paused a moment, hesitating, on the side of the earthen stairs; it was very dark. After a bit he walked slowly down and pushed open the door of his dugout. It was dark inside, and cold, the fire was out. The children were asleep; the woman was asleep.

He sat down in a chair and put out his lamp. There was no Christmas that night in Little Russia.

THE END

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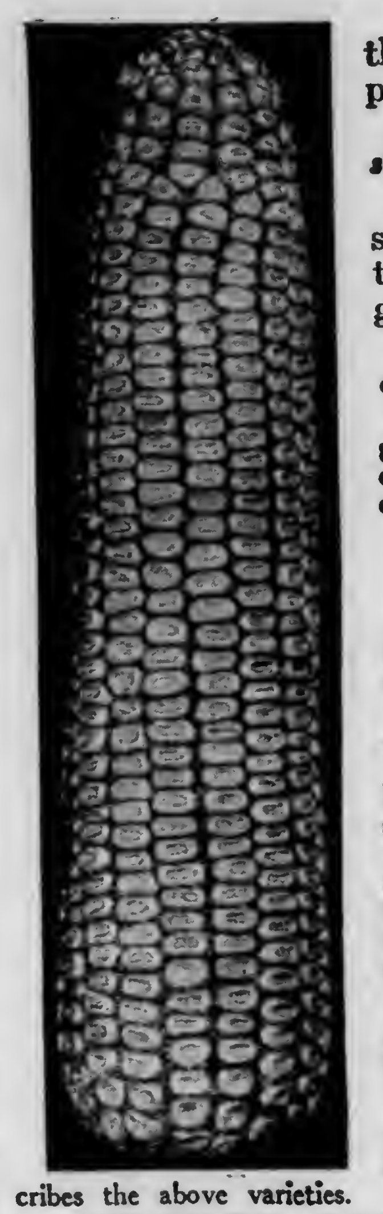

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Any reader of this paper who will write P. J. Kelly the Poultryman, at 73 N. 2nd St., Minneapolis, Minn., will receive a Free Copy of this new booklet "White Diarrhoea in Baby Chicks." It tells how to prevent, remedy and save the whole hatch. It's free and you are urged to write for it at once. Advertisement.

PLEASE mention Pennsylvania Farmer when writing to our advertisers. They want to know and we want them to know that you read it all.

Grange

FARMERS PLAN POLITICAL DRIVE

A political drive to seat fifty farmer Congressmen in the House of Representatives, to hold the gains made by the farmers during the war after the return of peace, is under way by the Farmers' Non-partisan League. The farmers, thru their representatives, will insist upon Government ownership of railroads, Federal control of shipping, and elimination of the middleman for all time, John M. Baer, sole representative of the Nonpartisan League in Congress said the other day.

"It is astonishing how little interest Washington now has in the farming industry," Mr. Baer said. "When it comes to business it is different. Business is organized. Business comes to Washington and gets not only credit but cash—for shipping and munition making. I have no complaint to make on that score—but I want the farmers to do the same thing.

"Food is just as necessary as munitions and ships. We face a great shortage of food crops this year. We need a billion bushels of wheat. We are not going to get it—we are not even going to try to get it, for much land suitable for spring wheat will lie idle. After two bad crops, the farmers are without cash or credit. They can't buy seed. It is just as necessary and right for the Government to provide money for seed to these farmers as it was to provide money for ship-building.

"The war has done much for the farmer," Mr. Baer continued. "While he feels that the Government, after fixing the price of his wheat, should also fix the price of cotton, steel, lumber, shoes, and clothing—the things he has to buy—he is not in a mood for much complaining. The railroads have been taken over, the middleman cut out, and the problem of ship congestion solved. If these steps were necessary in time of war, the farmers contend that they are just as necessary in time of peace, and they will fight against any effort to return to the old way of doing things.

"The State of North Dakota has a farmers' legislature," he explained further. "Such a legislature can see the farmers' needs. The other States have the regular old-fashioned politician legislatures. Business and corporation needs are so big that they keep before the eyes of these legislatures all the time and the farmer gets no show. This condition will be corrected when the farmers are organized."

RURAL DELIVERY

One of the most agreeable features of country life in winter time is the rural mail service. The country home situated, perhaps, many miles away from the nearest city or town is daily brought into contact with the outside world by the rural delivery. While city folks flock to theatres and concert halls for diversion, the farmer can sit with his family around the crackling wood fire during the long winter evenings to enjoy reading the daily newspapers, farm journals and instructive books. He thus keeps in touch with current events and is able to join theory with practice.

The Postmaster General's report for 1917 states that 27,000,000 persons, i.e., over one-fourth of our country's total population, enjoyed the accommodation of the rural delivery service. There are now 43,463 rural routes in operation, covering 1,112,556 miles; an average 25.6 miles for each route.

The possibilities of the rural par- Out in Utah, for instance, there has cel post can hardly be overestimated. recently been constructed a substantial bank building made of brick, all of which, together with the hardware, were delivered by parcel post. No railroads being in the vicinity, the contractors figured that it would be as cheap to ship the material by parcel post as for them to haul it overland. Of course, the packages contained only the maximum weight permited by the postal laws.

Rural Delivery

According to the postmaster's report the service is encountering increased difficulties on account of the war. A number of rural carriers left the service for more lucrative positions in the war industries. Others were called to the colors by the draft law. There is also a shortage of motor vehicles for mail service. Automobiles and motorcycles are used on 774 routes, the expense for which amounted to $1,382,744; this being $320,000 les than if the deliveries had been made with horse and wagon. In 1917, the total expense of the rural service amounted to $53,000,000. —C. T. Ohlinger, Allegany Co., N. Y.

VEGETABLES FOR ARMY CANTONMENTS

Vegetable growers in the vicinity of various army camps will be given the chance to furnish food for the soldiers during the coming season, since the war department has decided, wherever possible, to purchase vegetables from growers near the various cantonments and training camps. The camp quartermasters have been asked to furnish local growers with lists of the kinds and quantities of vegetables that are likely to be needed.

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7-8 Holstein Calves

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bull calves, sired by a son of the World's Record senior 4 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp.

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offers Guernseys; bulls ready for service and calves. Tuberculin tested. Oscar Bolick, McKeansburg, Pa.

Beau Rio seventeen months old, registered. Hereford Bull for sale. Weighs 1,290 lbs. Sire, Beau Donald 37th, No. 469301; dam, Lady Geneve 2nd, No. 352467. Champion type. Fed by my twelve-year-old son, Edson. Write ROSS F. STOUT, Clarksburg, W. Va., for price.

Jersey Bull ready for service. Dam's record over 500 lbs. butter in 1 year. Sire's Dam 22 lbs. in 7 days. Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us.
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$400 will purchase three finely bred Registered Aberdeen Angus heifer calves, weight 400 to 500 lbs. each and a 14 mon. reg. Angus bull by Black Woodlawn, Sire of Champion and Prince It. 50006.
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Reg. & Grade Holsteins 30 head reg. heifers, $250 each; cash or part credit. 7- 8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedgrees.
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Holstein Bull Calf six months old; 24 lb. dam, 31 lb. sire.
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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Bog Spavin.—I have a mule that has soft bunch on fore part of hock joint. It came on a few days ago while I was hauling logs. Will you tell me how to treat this case? A. K., Freeland, Md.—If your mule is lame he should be given rest. Apply equal parts turpentine, aqua ammonia and raw linseed oil, 3 times a week.

Imperfect Eyes. — Opthalmia. — I have a mare, 16 years old, that had trouble with her left eye twice last summer. Since then the eye has been rather cloudy and I believe she is partially blind. When her eye was sore I bathed it with salt and water. I also applied honey and sweet milk. The eye has a bluish appearance and one week ago the other eye became sore, but in 5 days it seemed to clear. I blowed burnt alum into eye the last time it was sore. A. E. B., Arkport, N. Y.—Give her one dessert spoonful Fowler's solution of arsenic at dose in either feed or drinking water, twice a day. Dissolve 40 grains borate of soda and 40 grains boric acid in ½ pint clean boiled water and apply to eyes when they are sore, four times a day. She should be fed a good quality of food. The stable should be kept clean and well supplied with fresh air. Her bowels should be kept open.

Infected Joints.—I am writing you regarding colt 21 months old that has enlarged hock joints. I would like to know how to reduce these bunches. When a suckling, his joint would crack, especially the hock joints. When he was a year old both hocks were enlarged. Now the bunches are still there. M. W. M., Rochester Mills, Pa. — Bunches of this kind are not easily reduced; however, you will obtain some results by applying equal parts tincture iodine and spirits camphor daily, or clip off hair and apply one part red iodide mercury and five parts fresh lard every two weeks.

Bruised Knee—Hygroma.—One of my cows slipped and fell in stable few days ago. Since then one of her knees is badly swollen. I would like to know how to reduce this soft bunch. S. C., Tunkhannock, Pa.—If you desire to treat this case yourself, better apply equal parts tincture iodine and spirits camphor, twice daily. She should be well bedded with clean straw. In my practice I usually open such a bunch to its center, inject it full of tincture iodine leaving it in cavity for one minute, then wash it out with clean water. Then pack the cavity with a wad of cotton saturated with equal parts turpentine and raw linseed oil, leaving the end protruding from opening. Dress the wound daily. The edges of sore and bunch should be painted daily with tincture of iodine. But this is work for a veterinarian, or a person who has been train in this work. The cow should be kept in a clean stable while this treatment is going on.

NEW FARMERS' BULLETINS

Control of Diseases and Insect Enemies of the Home Vegetable Garden. (No. 856.)

The Community Fair. (No. 870.)

The Bollworm or Corn Earworm. (No. 872.)

Raspberry Culture. (No. 887.)

Back-Yard Poultry Keeping. (No. 889.)

How Insects Affect the Cotton Plant and Means of Combating Them. (No. 890.)

Spring Oat Production. (No. 892.)

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Flossy; a Sorrel, weight 1300 lbs; 2 years old in May

Sired by Carnot 52811. Both perfectly sound and have been driven. Good chance to start breeding.

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Hampshire Ram Lambs Beautiful form, Excellent breeding. Vigorous and stocky. Manetto Hill Farm, Hicksville, L.I.

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PRICE IS F. O. B. LANSING AND SUBJECT TO INCREASE WITHOUT NOTICE

WE ARE NOT THINKING of the price—for that isn't the primary consideration in the selection of a car.

YOU KNOW YOUR OWN NEEDS—whether a five passenger car is sufficient; or if you really need, at times, room for more.

AND YOU KNOW better than anyone else can tell you, what your price limit is.

AND SURELY AT ITS PRICE this Reo Six is the greatest value obtainable in a car of established reputation.

AND REO REPUTATION is second to none.

WHEN WE SAY "Here is a seven-passenger Six that you can afford," we are thinking of the same item that you, an experienced motorist, are considering—

NAMELY—UPKEEP. That is the first thing to consider in the selection of an automobile.

CERTAINLY YOU CAN afford to own a seven-passenger car—and you can treat yourself to the luxury of a sweet-running, silent Six—if you can feel that not only in first cost but also in cost of upkeep it will be well within your means and accord with your ideas.

ASK ANY REO SIX OWNER to tell you of the upkeep cost of his Six—and the longer he has owned and the farther he has driven his Reo, the better will his answer sound.

HE WILL TELL YOU that, having compared notes with friends who own and drive other makes of cars—fours as well as sixes—of the same passenger capacity, he has never found one that compared with his Reo Six in low cost of upkeep.

AND HE'LL TELL YOU, too, that he has yet to find even a five-passenger car—four or six—the operation, repairs, replacements and general upkeep cost of which proved as low as his Reo Six—except one the five-passenger Reo.

NATURALLY a five passenger car ought to be cheaper to maintain than one of seven-passenger capacity—but most are not, when you look up the figures.

REO DEALERS TELL US that their records for the past three years show that Reo Six owners on the average have paid less than eight dollars per car per year for replacement parts.

JUST READ THAT AGAIN—with thousands of Reo Sixes running in all parts of the country, over all kinds of roads and handled by all kinds of skilled and unskilled drivers; most of them owner driven and owner cared for (or neglected)—

THE AVERAGE COST per car, per year, for replacement parts was less than eight dollars!

FRANKLY WE DON'T believe that record can be equalled by any other seven-passenger car on earth.

AND WE MAY ADD that the records on the five-passenger Reo show less than seven dollars per car.

THE SAME QUALITY—the same sound engineering; the same ripe experience; the same attention to little details and the same construction, inspection and testing of every car enter into the making of all Reo models.

COST OF UPKEEP is always uppermost in the minds of Reo engineers, when designing and when specifying materials. And since the same desire is uppermost in the minds of the most experienced buyers—we meet on a common ground.

WE ARE FRANK TO ADMIT that to a large extent the phenomenally low cost of upkeep of Reos is due to the fact that Reo buyers are, as a class, better informed and more careful in their selection than the average.

REOS DO NOT APPEAL to those who look only to superficials—Reos are built for connoisseurs and Reo owners are mostly men of ripe experience in motoring. They, therefore, combine prudence with intelligence in their choosing of an automobile.

IF YOU ARE ONE of that kind, we say to you, here is a magnificent, luxurious, seven-passenger six that, both in first cost and cost of upkeep, you can well afford to own.

REO EFFICIENCY sets the price lower—Reo quality guarantees low upkeep.

Reo Motor Car Company, Lansing, Mich.

Reo Six Touring
7-Passenger
$1550

(The Special Federal Tax must be added)

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More Soybeans For Eastern Farms

Varieties and Methods for Most Profitable Use

By JOHN H. VOORHEES

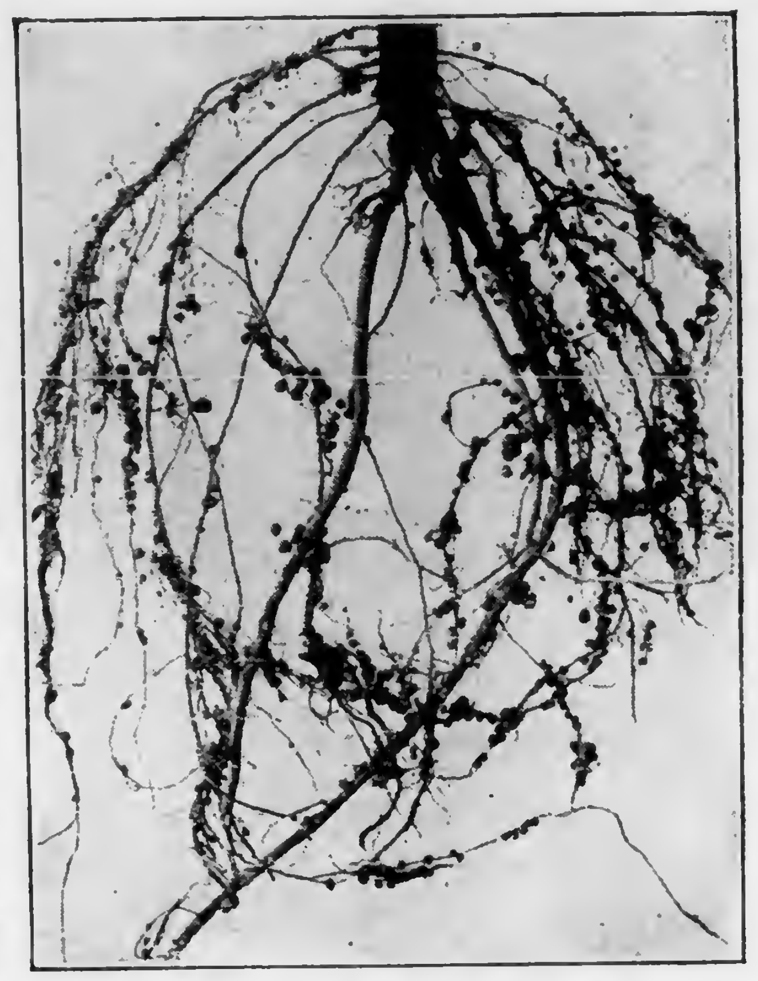
The program of diversified farming in the south has done much to popularize the soybean in that section. The world war which has so materially increased the prices of feeding stuffs will undoubtedly do the same for this crop in the north. Farmers have only recently "cracked the nut" which was the problem in alfalfa growing, and just as there is a place for alfalfa, so there is a place for the soybean, altho it still seems a little obscure.

The soybean is a logical crop to grow today, not alone because cattle feeds are high, but also because plant foods are scarce. It is a member of the legume family, long known but little grown in this country. In the far eastern countries of China and Manchuria, it is among the foremost crops. It is used in large quantities for human food and manufacture of food products. It does not seem unlikely that the same development awaits this crop here and that it may become a competitor of the white or navy bean so largely grown in New York State. The Delaware Experiment Station has recently issued a pamphlet giving a dozen or more recipes including soybeans or their products for home use. People who have tried them say that they have been most pleasantly surprised and plan growing a few in the garden each year.

In the south a number of crushers are pressing the beans for the oil which has almost innumerable uses. The predominant uses for the crop in the Central Atlantic States are, however, as a general farm crop for the production of animal foods; for seed, for hay, forage or pasture, and as a green manure or soil improvement crop. This variation of uses and a still greater variation of characteristics common to it, because of a profession of varieties, makes it pertinent that the grower make some little study of the crop if he is not to run the chance of disappointment.

It is our lack of familiarity with the crop which tends to make us a bit skeptical. There is a vast number of kinds of corn and we are not skeptical of them. Fortunately, our forefathers picked out the corn adapted to our conditions, altho not always the best. The soybean is much like corn. Its most important characteristic—that of maturity—varies with the variety, and strangely enough if a parallel is to be drawn we must put the soybean opposite the corn crop because it requires the same growing season and the same position in the rotation. Where the seasons are longer they may take the place of oats. The Pennsylvania Experiment Station concluded that soybeans may take the place of oats where oats are not a particularly good crop, and vice versa. There are varieties adapted to the varying conditions of climate from a 90-day to a 150-day growing period, and the varieties are so numerous that one may be found fitted for any of the purposes mentioned.

A still more important parallel is the adaptation to soil. Many are of the opinion that the soybean is a good cash crop on any soil. It is true that it will grow on almost any soil, but it has been my experience that a soil only capable of producing a poor crop of corn will give the same result with soybeans. The opposite is just as true. (For these reasons the crop must be compared with corn in its ability to produce food units or dollars, altho as one proceeds southward they may be compared with oats.) The distinction between the two crops in relation to soil improvement and soil exhaustion must be considered. In a general way and from a strictly cash point of view, it has been my experience that the soybean is profitable as a seed crop so long as the grain sells for a little more than twice the selling price of corn.


Nodules on Soybean Roots

Soybeans Rival Alfalfa in Food Value and are More Easily Grown

Soybeans or Alfalfa

From another point of view, soys may be contrasted with alfalfa. The Tennessee Experiment Station found that soybean hay produced 12 percent more milk and over 18 percent more butterfat than alfalfa hay. At the Ohio Experiment Station a ration containing 8.7 pounds of soybean hay, 31.9 pounds of silage, 5.7 pounds of corn meal, 1 pound of cottonseed meal proved equal to a ration composed of 8.7 pounds of concentrates consisting of equal parts by weight of wheat bran, cottonseed meal, and corn meal, 7 pounds of corn stover and 32 pounds of silage. In this experiment the cost of a pound of butterfat was 9.5 cents less on the soybean ration.

For hog pasture the soybeans are excelled only by alfalfa. They make a cheap source of protein, and when their fertilizing value as well as their feeding value is considered they are, when mixed with corn, superior to any other crop for fattening hogs, especially when they are hogged down and no expense is incurred aside from planting. Incidentally, the New Jersey Experiment Station considers a ton of soybean stover worth ten dollars for swine feeding.

Soil Improvement

Other crops may be grown for soil improvement with as good results, if not better, but the soybean ranks high because of its uses after being harvested. It may be grown in late summer for this purpose. Truck farmers make use of soybeans after early cabbage, after the old strawberry bed has been plowed down and after the early tomato crop. Various estimates of the amount of nitrogen added to the soil have been made from time to time. These differ widely, yet a careful inference from these data would lead one to place the average amount at $10 an acre when the crop is turned under and $5 when only the roots and stubble are turned under. The estimates from which this inference is drawn were based upon the price of nitrogen in normal times.

Varieties

The farmer must satisfy himself that he is using the variety best adapted to his soil and climatic conditions. It would pay him to devote a small part of the garden to the growing of different varieties. For this purpose he may secure a few samples of seed from the seed dealer. This is the way I started out and the first lesson I learned was that early planting at a time before the soil has thoroly warmed up is not profitable. The plants seeded later catch up in a very short time. There is no better means of observation and study which may mean the difference between profit and loss, success or failure, because success depends much on adaptation.

The Pennsylvania Experiment Station recommends the following varieties for the central part of the state: For seed, Ebony, Chestnut, Mongol, Ito San, Ohio 10015, and Amherst. For hay, Ohio 7496, Ohio 10015, Chestnut, Medium Green, Ohio 9035, and Amherst. I am giving here the descriptions of a few varieties with which I have had experience in New Jersey.

Ito San is one of the most popular varieties for general use. It meets successfully a greater number of conditions than any other variety. It grows erect, carries its pods close to the stem, matures in 100 to 110 days, drops its leaves upon maturing, and produces well among the varieties requiring the same growing period.

Guelph is noted for its luxuriant growth and beautiful dark green color. It is a large plant with coarse vines and big leaves, requiring no less than 120 days to mature. It is not a good seed producer because it shatters badly but it is one of the best for soiling, silage, soil improvement or hog pasture.

Cloud is one of the tallest growing varieties, requiring 130 days to mature. It ranks among the best for hay.

Ebony and Wilson are very similar. Each requires from 120 to 130 days to mature. They may be grown for seed or hay.

Hollybrook, Tarheel, Mammoth Yellow, and Hakerlandt are grouped together, not because they possess similar characteristics of growth but because each requires a long growing period, from 130 to 150 days, and they are all well adapted to most sections of New Jersey and Pennsylvania for hay, silage and soil improvement. Hakerlandt has always been one of my favorites. It is a big, sturdy plant and in my estimation it more generally meets the demand we make of the crop than any other variety except for seed.

Other varieties worth testing include the Virginia, Peking, Meyer, Edna, Ohio 9035, and Swan.

The growing periods mentioned in the foregoing descriptions are based on the number of days required to mature seed. In a general way best results are obtained for hay or silage when cut about two weeks before the maturing of seed, at a time when the content of dry matter and the percentage of protein are greatest.

Preparation of Seed Bed

A seed bed for soybeans should be thoroly pulverized and well mulched, much the same as the seed bed for corn. It is better a little firm than too mellow, but a happy medium meets the greatest desirability.

Planting

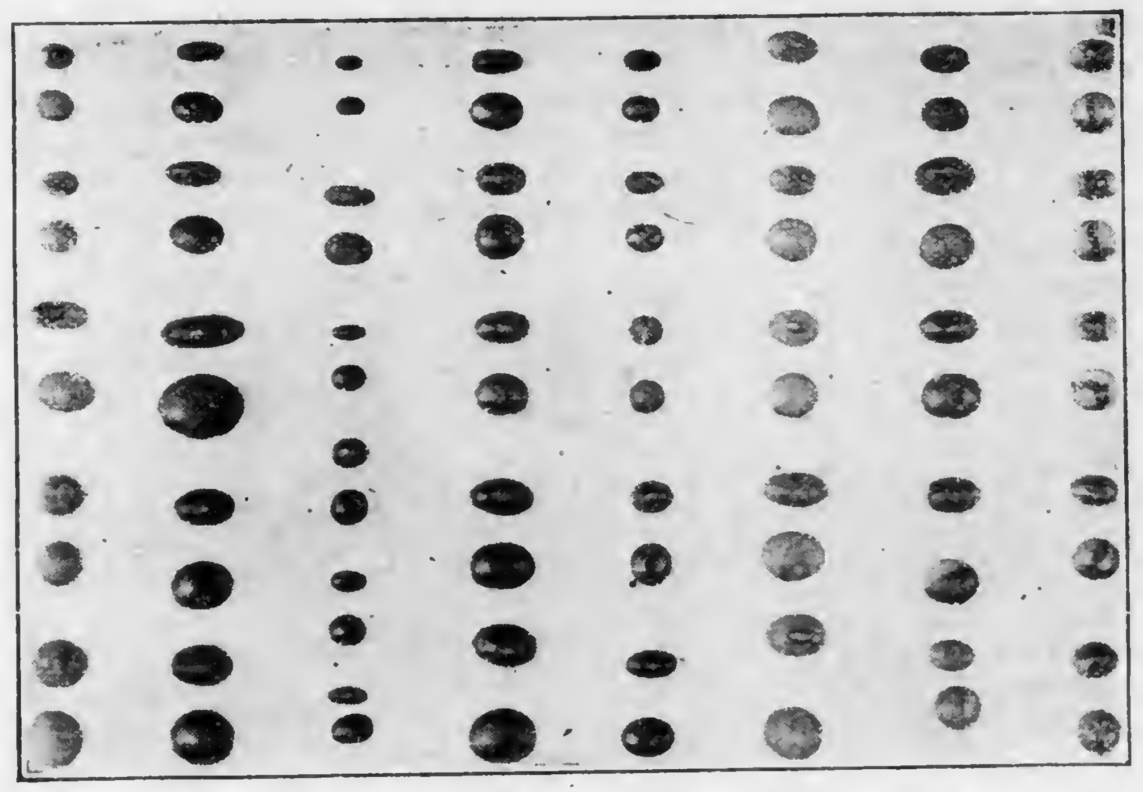
When soybeans are grown for hay, silage or seed, early planting is important. They are less sensitive to a lack of heat than cowpeas and may be planted earlier; but nothing is gained by too early planting. They may be planted about two weeks after the normal corn planting season without impairment to growth. For soil improvement or pasturage they may be planted as late as the middle of July on the heavy soils of New Jersey and Pennsylvania; whereas the first to middle of August is none too late on the light soils of southern New Jersey, Delaware and the Del-Mar Peninsula in Maryland.

Too often soybeans are covered with too much soil, especially on the heavier soils containing considerable clay in which one inch is sufficient, increasing to three inches as the soil becomes lighter and approaches a real light sandy texture.

Methods of Planting

While it is the opinion of many experiment station workers that best results may be obtained when soybeans are planted in rows, yet it has been my experience that on good soils, free of weed seeds, greater yields may be had by drilling or broadcasting, regardless of the purpose for which the crop is grown. Upon poor soils, shallow, of poor tilth, and weedy I have never deviated from my practice of planting in rows in order to give the crop the advantage of better growing conditions attending clean cultivation. Incidentally I have never grown soybeans in drills without having a conviction that, because of the poor soil, they should really have been grown broadcast and plowed under to improve the soil.

The regular grain drill has proved the most satisfactory machine for planting either broadcast or in rows, altho special plots may be secured for the corn planter. The oats side of the seed cups should be used when sowing broadcast and the gauge should be set to sow 6 to 10 pecks according to the size of the seed. If it is desired to sow in rows 28 or 30 inches apart, which is the usual and conceded to be the best distance, all cups (in a 9-hoe or disk drill) should be closed except the two end and middle ones. It is rather difficult to retrace one's steps when sowing this way. It is best to attach a home-made marker on the drill if rows to be proud of are to be made.


Showing Variations in Commercial Soybean Seeds

Fertilization, Inoculation, and Liming

The soybean being a member of the legume family is profitable as a soil improvement crop in direct proportion to the number of bacteria of the right kind in the soil to take nitrogen from the soil air and store it in nodules on the roots of the plants. It is quite as important that the soil be of a condition favorable to the growth and development of these bacteria. Generally, a very limited number of soils contain the right bacteria in sufficient number, making it necessary to inoculate the soil or the seed. It is true that a soil which has grown soybeans may contain a profusion of them, but I have walked thru fields where on only small spots, perhaps 100 square feet in an acre, one plant in 500 or less showed inoculation. From either a fertility or crop production point of view inoculation is profitable in such cases.

There are several ways to inoculate. The use of soil from another field which has been inoculated and has proved it, spread over the field proposed to plant at the rate of 500 pounds to the acre, requires no outlay of cash, and is no doubt most satisfactory if proper precautions are taken not to let strong sunlight come in contact with it. But under existing conditions of labor, the better way to introduce the bacteria is by means of commercial cultures which may be purchased from any seed dealer at very reasonable prices.

To live and grow and do their work these bacteria must have food and a pleasant environment. They must have air, moisture and humus in a warm, sweet soil. This presupposes good drainage and good tilth, permitting a free movement of air and moisture, a liberal supply of organic matter to furnish humus and a good mulch of fine soil to prevent the evaporation of soil moisture and so maintain the soil temperature. Lime is quite as necessary to sweeten the soil; perhaps more important, because it is sort of an interacting agent and does much to foster the other conditions, dovetailing into a desirable environment.

Experiments conducted at the New Jersey Experiment Station show that soybeans grown on limed soils contain larger percentages of nitrogen which is an index of the protein contained. These same experiments make it clear that it is not necessary to add nitrogenous fertilizers in the growing of soybeans, provided the soil is well supplied with lime, and, of course, provided the soil is in a good state of fertility. In view of these facts an application of 1,000 pounds of burned or hydrated lime or 2,000 pounds of pulverized limestone so finely ground that 100 percent will pass a 60-mesh sieve should be made prior to planting and thoroly mixed with the surface soil if the soil is acid.

In regard to the other elements of fertility, phosphoric acid and potash are important. It would be superfluous to suggest potash in these times. An application of 300 to 500 pounds of acid phosphate will have to suffice. Sometimes acid phosphate alone causes trouble when an attempt is made to drill it. I always mix one ton of ground bone with a ton of acid phosphate to overcome this difficulty. The bone is dry and makes a good mechanical mixture. Occasionally I used a 1-10-0 or 1-12-0 mixture instead, but the cost is often greater.

Cultivation

If sown in rows, the cultivation of soybeans may be the same as for corn. Level and flat cultivation prevails with corn. Nothing is better if it is shallow. It is sometimes advantageous to ridge the rows of soybeans to facilitate harvesting, especially where a special machine is used for this purpose.

Harvesting

Hay.—The time of harvesting soybeans for hay is important because they contain the highest percentage of protein just as the pods are forming. From this time on there is a gradual decrease in protein and an increase in fats with no market change in the amount of carbohydrates. The sweating method of curing, or cutting one day, cocking the next after the dew has thoroly dried, and allowing them to stand in the cock to sweat, is the most efficient method. Unless the drying is too rapid on the day of cutting, few leaves will drop and rains do little harm if the cocks are well built. The length of time to leave them in the cock depends entirely upon the weather. If the weather has been bright and the air fairly dry they may, as a rule, be turned over and divided into two or three parts on the morning of the fourth or fifth day and carted to the barn in the afternoon of the same day.

Seed.—Perhaps the simplest method of handling the crop for seed in the absence of special machinery is to cut with a mowing machine and cure as if for hay. If upright varieties are grown the harvesting may be done with a wheat binder (pity the binder) and the shocks set up much the same as buckwheat. It is best to allow the bundles to stand separately until they are well dried, and then shock them together, putting from 6 to 10 bundles in a shock. When this is done properly they may be left in the field almost indefinitely without serious injury. But for reasons of convenience it is best to store them under cover before the freezing and snows of winter.

The time of harvesting in respect to growth should be governed by the ripening, as is the case with all grain crops. But it is not as important that the grain be ripe with the soybean as it is with wheat and rye. If allowed to stand

after the leaves fall, shattering is more likely to occur, and a loss in yield as well as the loss of the leaves, which contain the most protein, will result in smaller returns.

There are several special bean harvesters now on the market which gather the beans from the standing vines, leaving the leaves and stems on the field to be turned under. This method is growing in popularity where hogs are had to turn into the field to feed on the remaining parts of the plant.

Silage.—Soybeans alone make a black, bad smelling "mucky" appearing silage which animals do not relish. For best results they should be mixed with corn; one bundle of soybeans to every three or four bundles of corn Mixed with kaffir corn, they make an excellent mixture but even in this case they should be mixed with corn in smaller amounts when placed in the silo.

Threshing

Threshing may be accomplished with the farm outfit. In my experience I learned that efficient work may be done by regulating the speed of the cylinder according to the size of the beans and maintaining the rest of the machine at normal speed. Practically no split seeds came thru the machine when I threshed Ito San with a cylinder speed of 450 revolutions a minute, and the vines were threshed clean of all beans. The larger the seed the slower the cylinder should run, and vice versa.

Storing Seed

The seed fresh from the threshing machine seems to heat very readily. I was forced to take mine out of bins the second day and spread them thinly on the floor. The second lot were spread out and no difficulty was encountered. I am convinced now that I did not leave the vines in the field long enough to dry thoroly. Had I done this, no trouble would have arisen but I wanted to save the leaves.

Considering the many purposes for which this crop may be used, the advantages it presents in the light of the prevailing high prices of feeds, and its value as a soil improvement crop, I venture to suggest that there is a place on every farm for a field of soybeans and that a greater acreage will be grown next year than in any previous year. Those who are unfamiliar and undecided about the crop should try out a few varieties in the garden or some small but good field.

Success With the King of Grains

Prospects for Profits in 1918 Promising---C. C. Hulsart, New Jersey

Inspecting Plants in Seed Corn Plot

"Corn is King." That expression never could be more truthfully spoken than just now. The country practically cleaned up the 1916 crop this past fall here in the east at $2 per bushel. In some instances, even more was obtained.

The new 1917 crop went on the market from the field at from $1.50 to $1.60 per bushel and has gradually increased in price until at the present time it is hovering around the two-dollar mark. While there was a fair crop of corn in this part of the eastern United States, the crop in many sections of the west was caught by frost while yet green, causing a lot of poor, soft corn, fit only for stock feeding. This is the situation as it exists today, with a prospect of still higher prices long before the 1918 crop is grown and harvested. Could any farmer ask for more ideal conditions?

The farmer who has good corn land, with help and machinery to work it, has a free pass down "easy street" if he plants and grows a good corn crop this year. I said good corn land. I do not mean by that ideal acres or fields. Corn will grow and produce good yields on a greater variety of soils than will almost any other farm crop, provided the growing of the crop is understood, and the needs of the plant are furnished.

What are the essentials requisite to maximum production? First, the corn plant is a gross feeder. It, therefore, follows that it should be planted on good, strong soil—soil which contains a sufficient supply of the various plant food elements at any and all times during the growing season. When not so furnished it should be fed by applications of manures or fertilizers.

Second, the corn plant is a gross consumer of water, requiring during the growing season the equivalent of fourteen inches of water over the whole surface and yet the plant will not thrive where there is any free water in the root zone.

Third, the corn plant requires warmth for both root and blade. Good cultivation will accomplish much towards warming the soil. Fourth, good seed that has been well grown, well selected, well ripened, and well cared for adds materially to the volume of the crop. When all these essentials are working in harmony there can be no doubt of the result. But they do not always harmonize. The season may be too wet, or too dry. The farmer may not do his part as he should, either in cultivation or manuring—any or all of which militates against a maximum yield.

There are two reasons why the yield per acre for the whole country is not over 36 bushels per acre. The first is: The farmer tries to cover too much territory with corn; the second is planting too thick. No grower should plant more acres to corn than he can properly manure and care for. It costs just as much to prepare land, plant the seed, cultivate the crop, for a 40-bushel yield as it does for a 100-bushel yield. In the latter case one acre of ground is used instead of two and one-half in the former.

One of the best places on the farm to plant this crop is on a sod turned under. If that is a clover sod all the better. The best place on the farm for coarse manure is on that sod, and if it is applied to the grass one year in advance of corn planting a greater gain will be received, because the manure will stimulate the grass and produce a better and thicker aftermath, all of which should be plowed under, whenever possible, just before freezing weather sets in the previous fall. Spring plowing, however, does well if not left too late. It should be done early enough to allow the plowed surface to settle and form a union with the bottom, permitting the capillary waters to ascend. The surface of the plowed land should be thoroly fitted. There are two reasons for this: First, a fine mellow seed bed absorbs sunlight, hence is warmer. It is warmer, too, because that mellow earth at the surface stops evaporation. The heat units not being used to evaporate water are stored up in the upper soil layers. Thus by thoro preparation we perform two feats.

Good seed with some pedigree behind it is worth while. Never send long distances from home for seed corn, even tho the claims made for it are true when grown in its native clime. Corn must be acclimated before it will do its best and that takes three or more years. Advice is now being offered the farmers free of charge in almost every paper advising them not to feed good ripened corn that will do to plant, claiming there is a scarcity of good corn for seed. That may be true, and yet it is not wise to risk corn grown great distances from where it is to be planted for seed. Here in New Jersey the corn crop ripened naturally, hence there is any quantity of good seed. Yet, I do not believe it would be good judgment to plant it far from where it was grown particularly, north of the same latitude.

Planting too much seed and letting too many plants grow is another cause of light yields. It is far better to have two stalks carrying two good ears than to have four stalks carrying too small ears or three nubbins. Each plant should have four square feet of surface soil in which to grow, and that soil should be in good tilth. If the soil be thin and poor, more room should be allowed.

In order to furnish this crop with upwards of 1600 tons of water which will be necessary to make a heavy yield, a constant dust mulch must be maintained. Weekly cultivations should be made and kept up until the tassels appear—going more shallow as the root system becomes developed. On soils not over supplied with plant food elements, applications of acid phosphate early in the life of the plant will be found beneficial. On soils low in available nitrogen, two applications of nitrate of soda will frequently double the yield; the first to be applied at the rate of 100 pounds per acre when corn is young, and 150 pounds later.

It Pays to Fine the Soil Deep for Corn

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Saving Food A recent report tells of new food regulations enforced in France. Public eating places are forbidden to serve sugar but customers may bring their own supply—if they can secure any. The manufacture of pastries, biscuits and confectionary has been prohibited. In public eating places bread served at meals is limited to about three and one-half ounces per meal. These are examples of the conditions our allies in France are meeting—the conditions we are asked to alleviate by sensible conservation here. We are asked to curtail consumption on only a few products, and yet Mr. Hoover is authority for the statement that such conservation as we have succeeded in effecting has been due to saving by only about 20 percent of our population. The remaining 80 percent is going on undisturbed by sense of duty or proof of need. Until we can demonstrate ready willingness to real sacrifice in these smaller things there is little occasion to talk of patriotism.

* * *

Sell Wheat There is desperate need of early marketing of all the wheat now on hand in this country. The available supply is short. The needs of the allied armies are great; greater than most of us know. From now until harvest time those armies must be fed from the wheat in this country. There will not be enough to meet the full demands and the man who withholds his grain will not only be giving aid to the enemy, but will be increasing the suffering and hardship of our allied army. To hold wheat now is to increase human suffering. To hold it for possible but very improbable gain is to ask additional dollars at the expense of human life.

It must be more and more evident to all that the allied armies on the western front are defending America just as truly as they are defending France or England or Belgium. Our young men are contributing their lives to the holding of that line Our share is the contribution of the supplies and the equipment needed to keep the armies in the best condition for their work. Wheat is now the most urgent need. To hold wheat under the existing conditions is little less than criminal To feed it to live stock when it is so badly needed not only means the weakening of our line of defense but the sacrifice of our men at the front Sell your wheat.

* * *

Voters, Enroll at Once The way by which the people may defeat the desire of the policians to select undesirable candidates for public office is to go to the primary elections and vote for their choice

The hand-picked variety of candidates have usually filled the tickets because the majority of voters did not take the trouble to enroll and attend the primaries, while the politicians and their followers have done so faithfully and successfully.

On account of the national prohibitory amendment which will come before the next legislature in Pennsylvania for decision, there is more than usual effort being made by temperance forces to have voters qualify for the primaries so as to be able to nominate men pledged to vote for the ratification of the amendment. It is proposed to have such men upon all tickets in every district.

In order that voters in boroughs and townships may vote at the primary on Wednesday, May 1, it will be necessary to enroll personally with the registry assessor on or before March 20. This means that the voter must enroll as a member of one or another of the political parties and he must vote that ticket at the primary. This does not bind one to vote the same ticket at the general election in November. Voting last fall does not entitle one to vote at the primary this spring, unless he enrolled for the September primary last fall.

It is said that 700,000 voters of Pennsylvania (about three-fourths) do not vote at primaries This is the place in which the best work of the citizens may be performed, and now is a mighty important time to begin Enroll at once

THE FARMERS' SHARE

The greater part of the discussion and action thus far concerning the "new world order" in the industrial world has been in reference to the relations between capital and labor The more democratic system lately proposed and accepted by both sides in England applies chiefly to the manufacturing, mining and transportation industries. So far as the question of democratising business has aroused interest in this country, it has been along the same lines and concerning the same activities as in Europe Where does agriculture come in, and what place is the farmer to hold? What will be his duty in the proposed re-organizing process?

We might conclude from what we hear and read that passivity and tractability on the part of the farmer would be highly appreciated and that these should be his leading characteristics. "His not to reason why; his but to do and"—produce food. There are more kinds of organizations composed of others than farmers whose self-imposed task is the advising, criticising and otherwise "helping the farmer" than there are active, farmers' organizations.

These may be found all the way down from Federal and state government departments to city chambers of commerce, businessmen's leagues, bankers' civic clubs, defense bodies, society women's clubs, housewives' leagues, etc Such seem to think that the ills of agriculture may be cured by hypodermic injections regularly and energetically administered, the chief ingredient of the remedy being: "Work harder, more wisely and save more." Little that is said or done by the public indicates that it recognizes the fundamental trouble which is that the financial returns to agriculture are disproportionate to the capital and labor involved; that too small a part of the ultimate price paid returns to the farmer. Many public officials avoid the question for political reasons; business organization avoid it for business (?) reasons.

The fundamental trouble mentioned above can be remedied only by the intelligent, co-operative efforts of all concerned. For this reason, the organized bodies of consumers above mentioned should not be ignored and despised, but farmers, thru their own organizations, should work in co-operation with these bodies in the solving of questions which are mutually vital to both classes. The fault is not in the number of outside organizations and their activity, but in the unorganized condition of farmers as a class and the absence of knowledge of the question of production and distribution as a whole by people of both sides. Random discussion by either side alone—which discussion usually consists of censure and criticism of the other—will never solve the problem of making farming profitable, or of reducing the high cost of living.

We believe it may be safely stated that the greatest weakness of agriculture today is the lack of complete and efficient organization. This

does not necessarily mean that all farmers should belong to one kind of club or secret order, but it does mean that all farmers should belong to some association for agricultural improvement and that there should be a federation of all such organizations with a central head for the handling of affairs of general interest. The wonderful developments in other lines of business which have been made during the past half-century have been achieved thru well-organized, co-operative effort. For the lack of similar organization, farmers are unable to hold their own in any circumstance in which they meet organized opposition.

However, there are at present, signs that farmers are awakening to the needs and possibilities of organized effort and of the state and national federation of those efforts. The work of the Non-partisan League in the northwestern states shows what can be done when farmers try. Of course, the "interests" in the east, fearing the spread of independent political activity, criticize and question the motives of the league in order to forestall any such movement here. Another movement of pronounced promise is the Federal Board of Farm Organizations. The latest activity is in New York State, where all agricultural bodies formed a state organization for the improvement of economic and political conditions affecting agriculture. A few weeks ago the Pennsylvania State Grange and the labor organizations of the state resolved to unite their forces in the promotion of such business and political policies as were mutually desirable.

All these movements are most encouraging and are, we believe, the beginning of the kind of work which will solve many of the unbearable economic and political conditions of today. They will help to break down class prejudices which now prevent producers and consumers from realizing that they have a common cause. The political strength thus acquired will enable the masses to curb the aspirations of self-seekers, put an end to special privilege and make for a real democracy. Only by complete organization, inspired by broad-minded intelligence, is it possible to devise an adequate system of distribution which will be most economical, and insure prompt and reasonable service to consumers and also return good prices and fair profits to producers.

* * *

Our Best The war events of the past several weeks must impress us all with the enormity of the task before us. It is time that we appreciate that we are not in this war only to "make the world safe for democracy". We are in it for self preservation.

A self-governed people does not enter war readily or lightly. In our case, wisely or not, we were wholly unprepared for a national struggle. It is but natural that our early activities in preparation should be tempered and perhaps hindered by the hope of an early ending of the war. As preparations progressed, the necessary delays and the natural failures to reach early efficiency, as naturally developed a feeling of pessimism. In spite of our potential power, we were forced to feel our weakness in early action. But as mistakes have been righted and preparatory measures have taken more tangible form, the feeling of pessimism has worn away. We can not afford to stay pessimistic. The issue is too great. We have no choice except to give our best, even should that mean our all. We "must go on or go under" just as surely as must our Allies. In that realization comes the moulding of the great country into a fighting machine with but one purpose and with but one possible end. To attain that end there must be hard work, hard sacrifices and mutual service.

In the disturbed conditions existing and in the times to come it is perhaps natural that every class of citizens should feel that it has the greatest burdens to bear. Feeling the pressure of personal duty, there is the temptation to feel that ours is a little heavier and a little more persistent than that of any one else. There will be as great if not greater need of asserting class rights as in times of peace. There will be just as great need of opposition to class privilege and unjust distribution of burdens. But we must be sure that these conditions are unjust before making our protest. We must be more sure than ever that we are doing our full duty before condemning the others. We must first be more sure that we are right, and then work harder than ever for the right.

HARRISBURG NOTES

Economy on the Hill.—Notwithstanding the tremendous popular interest being manifested in the ratification of the prohibition amendment and the very general desire that the next legislature shall not only give its approval to that important act and render all possible aid to the national government during the war and the reconstructive years following, there seems to be in the minds of many people coming to Harrisburg a very pronounced idea that the time is ripe to put the state government of Pennsylvania back on a business basis. (Just when was it upon such a basis?—Editors.) Two exhaustive studies of the governmental structure of this state have been practically thrown into the waste basket in recent years. A few of the changes recommended have been followed, but as far as getting any return for the thousands of dollars spent on investigations the result has been little better than the average return from such excursions into the realms of what everyone knows. In the last decade there have been many thousands of dollars spent for inquiries. The subject of election reform was gone into and passed up; a monumental study of taxation was carried out and the bills suggested were scrapped; compensation was studied and the work of the commission chucked out and new bills drafted and so on. There are now half a dozen commissions preparing investigations. The only profitable thing the state has had in the way of return from commissions has been half a dozen codes. The school code, soft coal code, decedents' estate code and a few others were prepared by exceptionally well qualified commissions and accepted.

The Draft Situation.—In the last week much attention has been given here to the farm labor situation and word from Washington as to the method to be followed in the next call for men and to give drafted men furloughs is being eagerly awaited on Capitol Hill. Frankly speaking, the state efforts to get farm labor have been almost fruitless in the face of the demands for shipbuilding hands and of munitions plants. So many strong appeals have been made here by farmers that it is probable that the governor may address himself to the national government, setting forth state's needs. In the opinion of people here, furloughs for drafted men from the farms and leaves for country-bred men in industries should be granted.

Change Classification.—Secretary of Agriculture Patton has announced that he stands pat on his call to draft boards to advance classification of drafted men granted deferred places because of agricultural jobs when the men do not go back to the farm. Mr. Patton says that the men who have been granted such privileges and who are now working in industries or on railroads should return now.

Tractors Bought.—The state experiment in the way of providing tractors to be rented at certain figures, covering fuel and wages of operatives, to do plowing is now under way. By the end of this week it is expected that the first tractors will be in service. The state has ordered forty machines, a supervisor to be in charge of each ten. Farmers will be expected to board the operatives and machines will be run at night if conditions are ripe. The Department of Agriculture is now listing applications for services of tractors.

Population Grows. — While there may be some who will not agree with Governor Brumbaugh's opinion that Pennsylvania has become a better place in which to live as a result of his administration, the fact remains that there were 229,000 births last year and only 138,000 deaths. The state population will be 9,000,000 in another year, it is predicted.

Routing Old Poultry.—State dairy and food authorities have issued plain notice that they do not propose to have old poultry taken from storage in other states and dumped into Pennsylvania in competition with home raised chickens or to fill up any gaps. It would seem that the test has come between federal regulations and state food laws.

Crop Sales. — State officials in charge of marketing say that there has been a noticeable selling of potatoes and that the prices are away down. As low as a dollar a bushel was reported in the Harrisburg district.

Bee Loss Heavy.—The loss in bees because of the winter and failure to take precautions is reported as growing from all accounts. In some counties colonies have been wiped out and in others the bees are so weakened by winter as not to be of much value.

Community Spraying. — The community spraying idea, which was broached last fall, has been taken up in a number of counties. In some sections the idea is also being applied to tractors, while more fertilizer and coal have been bought in large lots than for a long time. —Hamilton, Harrisburg, Pa., March 11.

NEW YORK LETTER

Milk Bonding Law Upheld.—New York dairymen have received encouragement from the decision of the court of appeals that the law requiring milk dealers to give security for the payment of milk purchased from farmers is not unconstitutional. Such bonds will be required by the commissioner of agriculture, hereafter. The suspension of this law for the past year has caused much loss to farmers who sold a month's, and sometimes two months', milk on credit, only to have the purchaser go into bankrupty. A new evil threatents them, however, in that feed dealers propose to require bonds of farmers who purchase a month's supply of feed on credit, as they say it is not a good risk to sell high-priced feeds to farmers to make milk to sell at less than cost of production.

Cheese Industry Threatened. — Since the rise in milk prices, as fixed by the only federal commission that has put the farmers' price on a satisfactory basis, the cheese industry is seriously crippled. Farmers patronizing cheese factories and selling their milk for $1 less than liquid milk prices will soon withdraw their milk for a different market where the better prices prevail. Cheese and butter are the two foods making least increase in price since the war. Even at the prevailing prices consumption has greatly decreased and the government reports over 11,000,000 lbs. in storage.

Wool Industry Decreases.—Despite all efforts to the contrary the supply of wool from Onondaga County has fallen off one-third in the last 3 years. Wool buyers of the section say that where they formerly purchased one million pounds annually most of which came from central New York, now they have to range over Northern and Western New York to get three-quarters that amount. Most of this comes from the western part of the state. Wool is now quoted in Syracuse at 65 cents a pound and despite large war orders a slight drop is expected because of stock received from Australia. The top price here since the war has been 70 cents. Three years ago it brought 10 to 20 cents. Buyers think wool will not drop back to former prices after the war, as the sheep of European countries have been destroyed. Shearing "hot-house" sheep has already begun. These are sheep kept in artificially heated sheds for the rearing of "hot-house" lambs.

Women's Units for Farm Work Formed. — Syracuse will have the first women's farm labor unit.. The State Employment Bureau of that city will finance the organization of this unit to the extent of $300. It is to be located near Fulton so that small fruit growers there may give employment to women workers from early spring to late fall. The Girls' Patriotic League will finance two units and also supply members, one for Elbridge and another near Syracuse to work for members of the Vegetable Growers' Association.

Dairymen Get Change of Venue.—The Supreme Court has granted the Dairymen's League officials now under indictment in New York City under charge of conspiracy to control prices permission to hold trial outside that city, as an impartial trial could not be had there. Rural counties are not advised, as many of them contain 50,000 farmers who produce milk—but rather some manufacturing city where interest in milk matters is not keen.

Huson Scores Unit Plan.—Former Commissioner of Agriculture and present director of Food Production in the state Calvin J. Huson thinks city women will do more good helping in the kitchen on the farms than at crop work, thus liberating the more capable farmer's wife to do team work or other needed out-door work.

Comparative Shipments of New York Produce.—The apple forwardings up to this time have been less than half the total for last season, with the state ranking fourth in shipments so far. Washington, Illinois and Virginia led off in the order named. Shipments of onions in the state are double what they were at this time a year ago. On February 18, as many potatoes had been shipped as during the entire previous year, but very heavy holdings yet remained on hand.

Eggs Take Big Drop. — A great break in the egg market came on Saturday when eggs declined in New York City 26 to 27 cents a dozen. The dealers claimed to have lost fully $1,000,000; fresh eggs selling as low as 43 cents in New York City. Farmers who pay upwards of $4 per 100 pounds for feed and are unable to find a variety to secure free laying and who are yet prevented selling their hens, are hard hit by present conditions. Granges are discussing the situation with lively disapproval and sentiment is strong that few chicks can be raised this year with prices as they are, or promise to be.

Women Vote for First Time.—New York City women have had their first chance to vote since the right was granted them last November. They cast over 31,000 votes out of a total of 78,000. They asked for few sample votes and voted in a straight business-like way; 94 percent of those registered actually voting as compared with 26 percent of the men registered. It would seem, however, that a majority voted like their husbands or male relatives, and their vote regained the Democrats the control of the House of Representatives.

To Protect Quails.—The game conservation commission says that quail have disappeared from the state excepting in the Hudson River sections, and at their instance Assemblyman Tallmadge has introduced a bill closing the season on quail until October 1, 1920, hoping to restore the birds to a state of plentifulness in the eastern part of the state.

New York Milk Sold in Chicago.—New York dairymen are exercised over the fact that the railway authorities allow the Bordens to displace far more important freight traffic and use the greatly congested railway system to ship Cortland County milk, bought at $3.34 to distant Chicago consumers where milk is already plentiful, for the purpose of breaking the farmers' price, which is already too low—being 50 cents a hundred pounds less than New York prices. It seems the Chicago federal milk commission failed to show the impartiality and fairness of the New York commission and paid no attention to farmers' evidence as to the cost of milk, but gave tender consideration to the distributors giving them 7 cents a quart for distributing, while the farmers get but 5 cents a quart for producing it. Chicago farmers are advised to organize as completely as have eastern farmers, pasteurize their own milk and distribute it themselves.—F.

NEW JERSEY FARM NOTES

Farm Conditions.—The farm labor situation is serious in New Jersey, according to the latest crop report issued by the State Department of Agriculture, and unless remedied decreased crop acreage may result. The cold weather of the early winter is reported to have damaged peach buds, the injury being most severe in the northern counties, according to the locality and variety. The advices of the crop correspondents show the following percentages of last year's crops remaining on farms on March the first: Corn, 46 percent; wheat, 25 percent; oats, including that held for seed, 40 percent. The report includes also a resume of the wages paid male farm labor during 1917. It shows that the average wage per month with board was $33; without board, $51. In some sections it reported that grains and grass did not winter well. Fruit growers are warned against a new Japanese peach borer which has been found in several northern counties and which bores in actively growing shoots and attacks the fruit.

"Anti-Loafing" Law.—In issuing his proclamation putting into effect New Jersey's so-called "anti-loafing" law, which forces all able-bodied men between 18 and 50 to be continually engaged in some occupation during the period of the war at least, Governor Edge made this comment: "Our farms and industries need more man-power than is available to meet extraordinary demands for production. By making Chapter 55 of the Laws of 1918 something more than a temporary sensation we shall be helping to supply this demand and at the same time curbing vagrancy, uselessness, mendicancy, immorality and crime."

Tuberculosis Control.—Among the bills to which the Executive has affixed his signature, making them laws, are the following: House 196, preventing animals afflicted with tuberculosis from coming into the state; House 197, prohibits the sale of biological products not produced under license granted by the Federal or State Departments of Agriculture (also House 195, giving the department of agriculture more power in recording all cattle affected with tuberculosis). House 395 gives the Secretary of Agriculture additional authority in regulating operations in dealing in milk and cream.

ADDRESS CORRECTION

There has been some confusion in correspondence arising from publication of Beery School of Horsemanship advertisement in our issue of March 2, due to error in address. For booklet advertised address Prof. Jesse Beery, Dept. 453, Pleasant Hill, Ohio.

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Fertilizing the Orchard—II

Directions for "Feeding" Peach Trees

By SHELDON W. FUNK, BERKS COUNTY, PENNA.

The fertilization of the peach orchard is just as important and somewhat similar to that of the apple orchard. More care must be used, however, particularly in the colder sections of Pennsylvania because of the danger of forcing the trees too hard and long, thereby making them liable to winter injury. Very few peach growers feed their trees to any great extent because, being short lived trees, they think they do not need it. I realize that very frequently the young trees on good soil need no feed but when the trees are older and are bearing heavily, they respond very readily to fertilization. At this stage fertilization greatly increases the yield; in fact, on most soils, it is almost impossible to develop a good strong bud unless the trees are fertilized regularly. I have never seen a soil so poor that it would not grow good peaches, providing the trees were well fertilized and well cultivated, while if they are not cultivated and fertilized, the results are usually poor even on the best of soils. The important fact to remember in the fertilization of peach trees, is that the new growth on the tree should always be gotten early in the summer, so that the tree has a good opportunity to harden its wood before going into the dormant stage.

To secure an early growth and early ripening of the wood it is necessary to use carriers of nitrogen which are readily available, such as nitrate of soda, and blood, for instance. The great trouble with manure is that it is not readily available and therefore causes the tree to grow thru too long a period of the year. Where the soil is very thin or where the trees are old and bearing heavily, manure can be used with splendid results, but ordinarily it is safest to use a commercial fertilizer in feeding the peach trees. The analysis of the material and the amount to be applied will, of course, depend entirely upon the soil and the condition of the trees. Ordinarily they do not require as much nitrogen as apple trees; under most conditions, a fertilizer carrying from three to four percent nitrogen and ten percent phosphoric acid, applied at the rate of from 400 to 500 pounds per acre of bearing trees, will give very good results.

Making Direct Delivery of High-Grade Peaches

Apply the fertilizer broadcast, by hand or with a fertilizer drill, when the leaves are fairly well developed and just before a cultivation, so that the fertilizer is well worked into the soil. If the trees are to be sprayed for brown rot and plum curculio just after the shucks fall from the small fruits, and nitrate of soda is used in the fertilizer, the application should not be made until after the spraying is completed. If an application of nitrate is made ten days or two weeks before the spray application, there is considerable danger of burning the foliage because the nitrate will have started a tender, succulent growth. Some men make an application of nitrate during June or July but I do not like a new growth started at that time. I want the growth as early as I can get it and I want it completed by the middle of July or the first of August so that the wood will be well ripened for the coming winter.

What has been said relative to the fertilization of peaches will apply to plums and apricots as well.

The most difficult trees to fertilize properly are the quince and pear. Because they are so very susceptible to the attack of fire blight, we must be very careful not to force them too rapidly, or we may lose the entire orchard in a very short time. I remember seeing a beautiful pear orchard several years ago that was ruined in a single year. The trees were just coming into good bearing and had a heavy set of pears this particular year. The owner, thinking that he would help the trees develop this good crop, applied a complete fertilizer to the orchard. Three nights later the entire crop was frozen, this threw the extra fertility into wood growth and even tho blight had not been prevalent before, that summer the trees blighted so badly that about fifty trees were destroyed entirely and a large number of the remaining trees very badly damaged.

Be very careful about the use of nitrogen on either pears or quinces and whenever it is used, be sure to balance it well with phosphoric acid. Pears and quinces should make a slow, regular growth each year, because if the tree is badly starved it will blight almost as quickly as if forced too hard.

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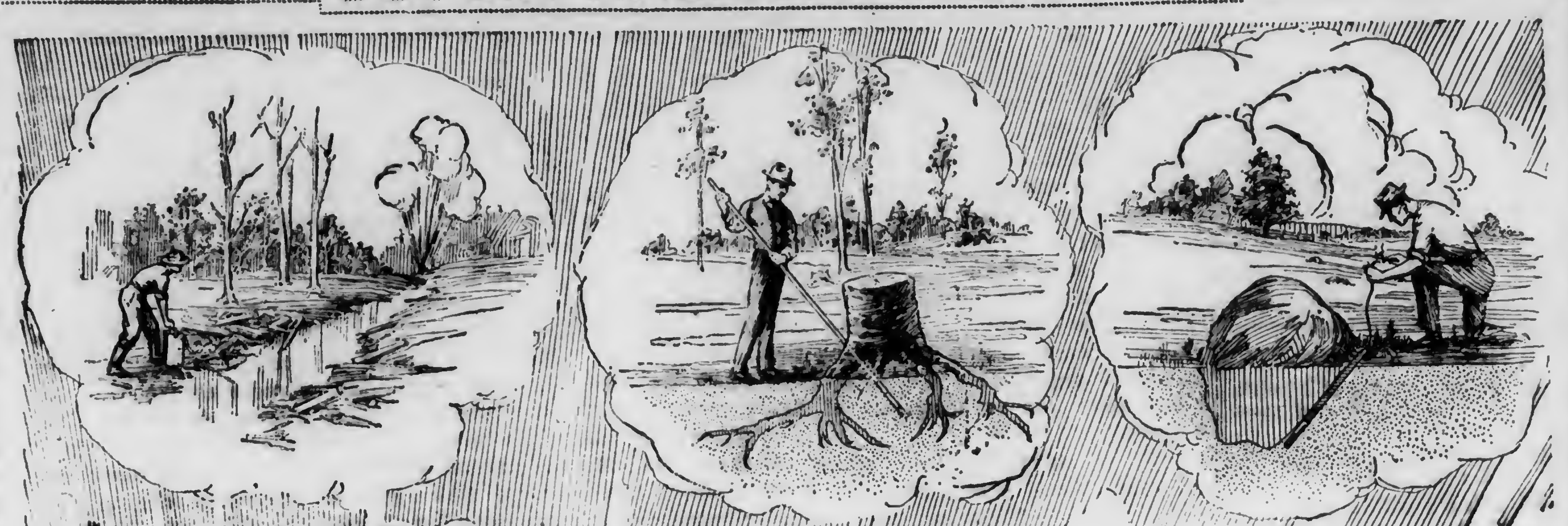

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Control of Orchard Plant Lice

Conclusions From Most Recent Experiments

By THOS. J. HEADLEE, ENTOMOLOGIST, NEW JERSEY

This discussion is limited to green apple aphis, rosy apple aphis and oat aphis because these are the species that recently have been doing great damage to our fruit growers. These are the species that have curled the foliage of the apple trees and have dwarfed and destroyed the fruit. When abundant they have shown themselves capable of reducing and in many cases utterly destroying the crop. There is some reason to think that they act as spreaders of fire blight.

All of them pass the winter as shining black eggs upon the bark of the smaller branches and twigs of the apple trees. The green aphis eggs are likely to be found thick upon the water sprouts but the eggs of the oat and the rosy species are usually laid scatteringly over the bark in depressions or tucked under the edges of the buds themselves.

The oat aphis usually hatches before the buds have opened sufficiently for the green edges of the leaves to appear, but the green and the rosy sometimes do not hatch until this stage has been reached. The second generation of the oat aphis develops wings and leaves the tree about the time the fruit has well set and begins to enlarge. The third generation of the rosy develops wings and leaves the trees about the middle of June. The green aphis lives on the apple, pear, quince, and hawthorne thruout the summer. All species return to the apple in the fall and lay the overwintering eggs.

It thus appears that the apple suffers from oat and rosy aphis during the early stages of fruit production only, but that the green is on hand at all times.

Perhaps the most puzzling phase of this aphis problem is the habit of appearing in troublesome numbers only now and then. Without doubt the underlying cause is the effect of the climate upon them and their natural enemies. Very little of a really definite character is known about these climatic effects and the space alloted to this paper is not sufficient to record such information as does exist. Suffice it to say that when aphis eggs are on the trees, spraying intelligently for their destruction should be undertaken as a matter of insurance.

Control Measures

In view of the facts just presented showing the uncertainties of aphis outbreak, the first problem of the grower is to determine whether the conditions in his orchard render control measures necessary. If, as spring approaches, the water sprouts, twigs, and smaller banches bear no aphis eggs, treatment for lice is unnecessary for there will not be sufficient migration from adjacent orchards to create an infestation in the first half of the season. If, on the other hand, as spring approaches aphis eggs are present on the water sprouts, twigs and smaller branches, treatments should be made as a matter of insurance against damage.

The small black eggs are rather inconspicuous and sharp eyes are required to find the first ones. After the grower has become familiar with their appearance he can pick them out without difficulty.

Thruout the winter and early spring the eggs remain on the tree, open to attack and this would seem to be the logical time to compass their destruction. Many efforts have been made to find a substance which would destroy the aphis egg, not harm the tree, and sell for a price that would not prohibit its use. It can truthfully be said that up to the present time no such substance has been given to the public.

During the winter and spring of 1917, Dr. Peterson made a preliminary study of the egg and the effects of certain chemicals upon it. He found that the egg envelope exhibits at least three layers: The outer, a structureless, transparent, brittle envelope; the middle, a softer, somewhat elastic, pigmented layer, and the inner, a thin elastic almost transparent sheet covering the embryo. The outer layer appears to exercise a protective function resisting strains and stresses and retarding evaporation of the body fluids. The fact that this transparent layer encloses the pigmented leads one to suspect that, like the jelly on a frog's egg, it may keep the egg warm by transmitting the sun's rays and retaining the heat into which they are transformed by the pigment.

Swiss Chard

Sometime before hatching, the period ranging from two to eight days, the outer layer splits at one end exposing the pigmented layer and the egg is thereafter very sensitive to weather (dry air particularly) and insecticides.

In the course of his experiments, Dr. Peterson found that the eggs were strongly affected by carbolic acid and winter strength lime-sulphur. He found that the carbolic acid appeared to soften the outer brittle layer in such a fashion that the egg soon shriveled while the lime-sulphur appeared to harden it and to prevent hatching.

Much light was thrown on the subject of aphis control by the experiments conducted by Dr. Peterson at the N. J. Experiment Station. In this experiment ten different spray materials, commercial and home-made, were used with varying degrees of success. This details of the experiments are omitted here but the following conclusions are given:

Assuming that the best practicable treatment for aphis with our present knowledge is the application of lime-sulphur and nicotine in such a fashion that all the lice and lice eggs are coated, the question of the time of application becomes exceedingly important. It seems clear from the laboratory and field studies that the green bud stage is the best because at that time the maximum number of lice have hatched and the unhatched eggs are most susceptible.

The term "Green Bud Stage" is rather elastic and somewhat difficult to define. When the bud scales first separate at the tip the parts exposed are silvery and only slightly green. The silvery look is due to the presence of a heavy pubescence on the structures exposed. In the course of a very few days this silvery look gives way to a decided green as the edges of the leaves begin to project. Treatment should be completed by the time the latter stage has been reached, for the next stage, which may follow within a single warm day and night, and shows the young leaves projecting from the buds like squirrels' ears, is not only liable to be injured by the treatment but offers shelter to the lice.

Conclusions

1. Three species of plant lice—green apple aphis, the rosy apple aphis and the oat aphis, especially the first two—attack the foliage and fruit of apple in New Jersey and are capable under favorable conditions of destroying a large percentage of the crop.

2. All species winter over on the water sprouts, twigs, and smaller branches of the apple trees as small shining black oval eggs just large enough to be seen with the naked eye.

3. While it is not possible to forecast an outbreak with certainty, even when the eggs are on the trees owing to the effect of weather and natural enemies, preparations should be made for treatment as a matter of insurance if the eggs are present.

4. Control by destroying the aphis after the leaves are pretty well unfolded is likely to prove impracticable because of the shelter which the leaves afford the lice.

5. The most practicable treatment for aphis control is the application of winter-strength lime-sulphur to which 40 percent nicotine has been added at the rate of 1 to 500, during the green bud stage because the maximum number of lice will be hatched at that time (and will be killed by the nicotine) and the unhatched eggs will be in their most sensitive state (and will be destroyed by the mixture).

5. The green bud stage is that stage of development which just precedes the escape of the new leaves from the flower buds in such a fashion as to resemble squirrels' ears.

TOMATO VARIETIES

While I would not propose to add anything to the excellent articles of Mr. Hulsart on growing tomatoes commercially, it may serve a good purpose to give my experience with the varieties. I have tested almost every new variety which has been introduced since I paid Col. Geo. Waring $5 for twenty seed of the Trophy tomato, I think it was in 1868 or 69.

The Trophy was the first real advance in solid, meaty tomatoes with fairly smooth skin. We had had before that, solid fleshed varieties like the Mammoth Chihuahua but with a very rough exterior, and we had a smooth red tomato with a very hollow inside. The Tilden was a slight

improvement on this but still lacked the dense, meaty interior. By sowing my twenty seed of the Trophy early in January in my greenhouse and taking all the cuttings I could, I had 150 plants ready to set in the spring, and from these saved seed that, with the aid of a couple hundred sashes on cold frames, enabled me to set 30,000 plants in 1870, the first field of tomatoes set on the Eastern Shore of Maryland, where every farmer now plants a field.

I was on the Baltimore market that season two weeks ahead of the Anne Arundel County gardeners, and got fine prices until the market became loaded. Then I persuaded a canning company engaged in canning to take the remainder of my crop at a moderate figure, and they canned the first tomatoes on the Eastern Shore where now there are hundreds of factories.

J. M. Thorburn & Co. sent out the first broad or potato-leveled variety, which was soon superseded by the Dwarf Champion, and this in its turn gave place to better varieties. I found, however, that the Dwarf Champion paid well for forcing under glass, planting them on the side benches. I did that after seeing the success of this variety under glass at George Vanderbilt's Biltmore place in North Carolina. The heaviest crop I ever got under glass was made with Maule's Earliest, and the fruits were rather smoother than in the open ground. I have always thought that Earliana was a selection from Maule's Earliest, which was on the market when Earliana appeared, and in its earliest days Earliana was as rough as Maule's Earliest, but has now been vastly improved in smoothness by a number of careful breeders. Earliana has one advantage for the market grower, in that it throws its whole crop early and can be cleaned out of the way as the second early and better varieties come in.

Bonny Best and John Baer seem to have been bred from Calk's Jewell. Bonny Best is earlier than John Baer. Both are good tomatoes. Last summer I gathered the first ripe tomatoes from Earliana and Bonny Best the same day from plants started at the same time and treated in the same manner. Therefore, as I am now growing tomatoes only for home use I have dropped Earliana.

For the later main crop I like Maule's Success. Matchless is good. Personally I like pink or purple tomatoes. The Acme was the first of this class I tried, but when Beauty came out I dropped Acme for the rich crimson-purple of the Beauty. Now the Globe has taken the place of Beauty. Dwarf Stone has taken the place of the old Stone, and for the canners it is better than Stone, which nearly every one here grows. The overgrown sorts like Ponderosa, Enormous, etc., I do not care for, as I prefer a bigger crop of medium sized tomatoes to the small crop of the Mammoth sorts. Bonny Best is about the best to grow under glass, and it is very likely that John Baer would make a good greenhouse tomato.—W. F. Massey, Md.

ONE HUNDRED THIRTY SPRAYED TREES NETTED $1813.55

Thousands of acres of apple orchard which have never been profitable can be converted into an asset by spraying and pruning. These orchards are a potent source of food supply which should not be neglected, especially during the present emergency. This is much more satisfactory than planting new orchards which would not come into bearing until after the war is over. Furthermore, the land which would be devoted to a new orchard can be cultivated more conveniently and more profitably if it is planted to some other crop.

An example of the profits from spraying is illustrated by the experience of Charles Tanzberger of Jefferson Barracks, Mo. Mr. Tanzberger's orchard is 17 years old and was never sprayed until last year. He offered his orchard of 130 apples trees for a spraying demonstration. In 1917 as a result of proper spraying, the 130 trees produced $1,897.55 worth of fruit. The total cost of spray materials, together with the cost of labor, amounted to $84. Thus, the net profit resulting from spraying was $1,813.55. The orchard had never been profitable before. For example, the same orchard of 130 trees was set just as heavily with fruit early in the season of 1916 as it was last spring, yet it produced without spraying only enough apples for three barrels of vinegar.

Mr. Tanzberger's letter, dated December 12, 1917, to T. J. Talbert, who conducted the orchard demonstration, follows:

"My apples were divided into first and second grades. Out of my 500 barrels of Winesap apples, I had about 80 barrels of seconds. The culls which I kept myself made three barrels of cider.

"I sold all the apples (500 barrels) to one man. He paid me one price all the way thru, which was $3 a barrel.

"All that I had to do was to pick the apples. The commission man barreled them and stood the barrels and hauled them away from the place also. Spraying pays."—Mo. Agricultural College News.

DEHORNING PEACH TREES

On page 215 of Pennsylvania Farmer I read an article on the dehorning of peach trees.

I was here on the farm with my father when the scale first made its appearance. My father did not spray for the first year or two and by that time nearly all the limbs on our peach trees were dead. On some of them new sprouts had started at the bottom

That winter we dehorned the whole orchard, about 400 trees, and sprayed in spring with lime-sulphur. They had good healthy roots and made a wonderful growth that summer. They were nice and healthy, the foliage being a dark green. We got two crops from them before they were dehorned and about four afterwards. The following year after dehorning we got the finest fruit we ever picked—42 and 43 peaches making a nice 16-quart basketful. I well remember my father sold 95 peaches for $4. I think we were more than doubly paid for dehorning that orchard, but it will not pay unless the trunks and roots are vigorous and healthy.—L. F. Nicholas, Northampton Co., Pa.

There are about twenty million breakfast tables in the United States. A spoonful of sugar saved at each breakfast — not for each person — would mean a saving of more than 215,000 pounds a day, or nearly forty thousand tons of sugar a year. These may look like frenzied figures, says the New York State College of Agriculture, but they show how even a little food-saving will count in the aggregate.

Get More Money For Your Work
Worms and caterpillars, bad as they are, are not the cause of all poor fruit. Potato bugs and flea beetles are bad enough, but blight is worse. *Plant diseases must be fought* as well as worms and insects. Pyrox is the weapon to use against both. It also invigorates the plant or tree, yielding products of superior size and quality. In order to get more money for your work
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The Market Milk Situation

Some Disturbing Conditions that Must be Met

There is much uncertainty in the future of the milk market all over the country. No change was made in the March price in the Philadelphia district. The maintenance of the February rates is fully justified by the costs of production, but there are a number of conditions in the market that tended strongly towards a reduction. **Unless there is some change in these conditions during the month, the fight for price maintenance during April promises to be a hard, if not a losing one. Conditions can best be met by knowing what they are.**

General Situation

The general situation the country over is well summed up in the following report presented at a meeting of Middle Western dairymen:

Milk.—Regarding market milk, the future demand depends on the industrial activities in the city markets. Just now the whole milk market appears dull and has been so all winter as the city consumption is two-thirds to three-quarters below normal. The production is apparently larger but is actually smaller, than a year ago The price has been one of the minor factors, and the tendency to economize one of the main factors toward regulating consumption.

Condensed Milk.—Regarding condensed milk, the makers have been up against a difficult proposition because of the shortage of coal, sugar and tin and to some extent because of transportation conditions. The industry is bound to increase as long as the war lasts. Another factor has been the difficulty in obtaining condensing machinery as it takes from three to twelve months to equip a new factory.

Ice Cream. — Regarding the ice cream industry, the manufacturers have had their troubles and are storing less cream than usual and not getter ready this winter as usual for the coming season.

Cheese.—The cheese industry has been the worst off of all. Nearly double the quantity was in storage January 1 what we had a year ago. The price was considered too low, especially in Canada, and transportation facilities for exporting have been poor.

Butter.—With butter, the storage conditions are about normal or about the same as last year for the best grades but 34 percent less for the cheap grades. The make last year was smaller but there has been a slow consumption and more economy. Butter is as cheap as cheese. Navy demands promise to be larger this year. It is reported that the navy will want 14,000,000 pounds this year as compared with 1,500,000 pounds last year and a normal demand of 800,000 pounds.

Only The Best Cows Can Pay a Profit on High Feeds

Surplus Milk

It is claimed that there is a considerable surplus of milk in the primary markets at the present time. There is no way of knowing the comparative production now and a year ago, but it is known that consumption has fallen off. It is stated on good authority that the consumption in the Philadelphia market fell off 20 percent owing to the retail price advances last fall. It is also stated that some of this came back with the price reduction the first of February, but it is not back to normal. Consumption is not absorbing receipts, and the surplus must be taken care of.

During January and February this surplus was taken largely by the condensaries which had contracts with the government at a stated price. This outlet served as balance in the market. Now it is reported that the condensaries have been cut off from their market by a change in transportation regulations which cuts off foreign shipping facilities. The situation so far as condensaries are concerned has been summed up as follows:

Curtailment of 75 percent of the export milk business of the United States has been brought about by regulation which reduced the available bottoms for export trade from 24,000 tons monthly to 6,000 tons monthly. Under these conditions the president of one of the largest condensaries in the county says there will be an overproduction of 6,000,000 cases of condensed and evaporated milk, or 6,000,000,000 pounds in the calendar year. All of this milk is badly wanted abroad, but lack of tonnage makes it nonavailable for export. Already there has been a decline of fifty cents a case in the United States and further reductions are not impossible.

It is difficult to verify these figures or to determine where the bulk of the milk for the condensed trade will be dropped, but it is evident that the loss of any part of the amounts

named will be a big factor in the spring and early summer market. The greatest hope of stabalizing the market lies in increasing the consumption of raw milk.

Increasing Consumption

Food authorities everywhere appreciate the food value of whole milk. Many of them are coming to the front with active work in increasing the use of milk at this time as a sane and timely conservation measure. It should be gratifying to the dairymen of this state to note the work that is being done in this line in Philadelphia. A committee of the Pennsylvania Rural Progress Association was the first to take up the work. Thru the efforts of Dr. Clyde L. King, federal milk expert, the Federal Food Administration endorsed the work. A pamphlet setting forth the comparative food value of milk was prepared by the Rural Progress Association and some 10,000 copies have been sent to county food administrators, city teachers, domestic science teachers and others interested in the food conservation campaigns. The U. S. Food Administration followed with a pamphlet on War Economy in Food. Among five rules for wise buying, we quote rules 1 and 2 which apply to country people as well city people as follows:

"1. Don't begin to save on milk. Children must have it; adults ought to. Milk builds bone and muscle better than any other food.

"2. Spend at least as much for milk as for meat. Remember that a quart of milk is equal in food value to a pound of steak. A quart of milk a day for every child is a good rule, easy to remember. At least try to provide a quart of milk a day for every member of the family."

A total of 1,000,000 copies of this pamphlet have been published at the expense of the Food Administration and sent to every one in the state who has signed the food pledge. A third pamphlet urging the use of milk and giving a series of milk recipes was published and over 50,000 copies have been sent out to the teachers of the state. Over 300,000 of these latter leaflets have been ordered and will be circulated wherever they promise to be of greatest value. To supplement this the city milk dealers are carrying on an "Eat More Milk" campaign by means of street-car and bill-board advertising. It is expected that the campaign will be carried to other cities in the state and to other states.

The above details will give readers some idea of the manner in which the gospel of more milk is being preached. It is impossible to foretell what the results will be, but it is one of the most intensive campaigns that has ever been undertaken in the interests of a single food commodity, and should bring results in the increased use of milk. The Inter-State Milk Producers' Association is assisting thru the employment of a lecturer and demonstrator, as noted in these columns last week.

Cheap Food

The purpose of all this is twofold: To save one of the most important farm industries by increasing the demand for dairy products to a point where the continued maintenance of dairy herds may be assured; and second to bring about sane food conservation thru the substitution of milk for other food products not so plentiful and not so valuable in food nutrients. Based on food value, milk is now cheap in comparison with other food articles. Cost of production is so high that any material drop in prices to farmers is almost certain to curtail production which means the disposal of dairy animals. Any sacrifice of dairy cows now means loss for several years to come.

THE "HIGHER-UP" DAIRYMAN

There is bound to be a wide variation in the estimates that different farmers place upon the cost of milk made upon their farms, even if the methods of calculation are standardized. There is no observed rule among farmers in making those estimates, and so while one farmer guesses, he discards items that another deems essential. One donates home-grown feeds and labor, and has no idea that depreciation is a vital matter to be taken into account. But he does count in the many cows purchased to make good a full dairy. Another figures in all items of capital, labor, everything purchased for the dairy, all things sold, to which he adds his value as a manager. Between these two results there is bound to be a wide margin of difference in net totals.

We are all likely to compare things that are not actually alike. One man with a fine dairy on a farm of 150 acres may have 30 to 35 cows, and may make $3,000 or better from them. Another man not far away, instead of making five or six cans a day, owns few cows and averages hardly two cans a day from a farm similar in size How can any visiting commissioners equalize this matter and give the last man a show in profitable living? There are many of these two-can farms, and these are the men who first cry out that dairying does not pay.

My neighbor, who milks an average of 65 cows and is shipping over 15 forty-quart cans of milk a day at $3.40 a can, a total of approximately $50 a day, says that he has no fault to find with the business. He refuses to sell his dairy. And yet this man is selling milk in the same general city market with the two- and three-can men. He receives the same prices, pays the same freight rates, and buys "Hooverized" cow feed out of the same feed store as the others. But no bookkeeping or "standardizing" can make the two dairies equally profitable.

Transportation

Just now another element is creeping in that is making a widening gap between different dairymen. The paved roads that are now reaching out from 25 to 50 miles from the cities have brought in the milk trucks. These trucks bring the milk cans in the morning direct to the farm and are quickly loaded at the farms, and are in the city in another hour. They are sent out by the big dealers themselves. The farmer is thus saved from going to the milk train, he has no losses from "sour milk", and escapes freightage. And this frequently makes a difference between the "net" of two dairies not a half mile apart. In this governmental price-making, there is no settled "thus saith—". As yet there is no uniform basis for calculation of farm-grown and fed crops. Shall the farmer be credited with commercial prices for what he feeds his dairy? A case in point: A farmer sells wheat at $2 or corn at $1.80, but if he buys gluten or the shorts and wheat foods he must pay practically the original price of the grain for the by-products. Shall the farmer consent to this, or shall the price of

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Rats or Profits?

Every rat on your place, according to experts in the U. S. Department of Agriculture, will cause a loss of more than $2 during the coming year. It is no uncommon thing for farm buildings to harbor forty to fifty rats and great numbers of mice. The resulting loss amounts to a pretty big sum. Build your granaries and barns with

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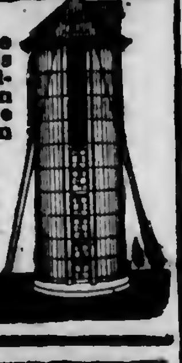

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these home-grown feeds be charged up at their commercial value as sold at the value fixed by the government?

And I can not imagine any remedy for this inequality in cost of dairy production unless the government that now says how often we may eat, how much, and what varieties of foods, shall in some way require a cow to consume so much food, at what price, and how much milk she shall give in return. Then perhaps they may be able to fix a price at which milk should sell and give the farmers "just" due. This is certain; the farmer has had the prices set for him by which to sell his produce, and in return has been promised that cow feeds shall come down to match. But feeds have been going up all the time, and in some way are getting lighter to the sack. We are told that if milk prices are seemingly too low now, they can be boosted next summer to balance up; but will this be remembered? The men who are buying this milk are fast turning it into milk powder, condensed milk and the like, and placing it on the market at prices so far above the original purchase price that it would make a dairyman dizzy if he could get a corresponding profit on the milk he sells.

The Butcher Won't Get This One

The Labor Problem

There is yet another side to this matter—that of labor. The farmer is practically without help, and there is no use denying that for this reason, quite as much as minimum prices for milk, dairies are being sold outright. They are not all killed but shipped elsewhere, and the remaining help on the farms, often the farmer himself, goes to the great munition factories and draws the wages paid there. The Government asks the farmers to "speed up" when they are now putting in a 14-hour day's work. Is it any wonder when this farmer sees the government paying $4 to $10 a day of eight hours, and no battle with the city milk dealers or the feed supply men? The farmer is the most loyal of loyalists and patriotic of patriots. But these conditions take the edge off his ambition to "Make the World Safe for Democracy".—Chas. Mathew Morgan.

PERSISTENT MILKERS MOST PROFITABLE

Persistent milkers—the kind that milk well for a whole year, not the type that yield abundantly at first and then soon drop down in production—are the winners in the long run, according to dairymen at the Ohio Experiment Station. The steady cow is usually the most profitable one.

Some cows in the station's co-operative dairy work have yielded considerably above the average at the first of their lactation periods, but within two or three months their yield would fall nearly a third and by the end of the period would be only a fourth of the original production. The average daily yield for the period was found to be more than seven pounds less than that of cows having a comparatively uniform record from month to month.

Cows tend to decrease in milk flow as the lactation period advances. The milk yield of 96 Jerseys fell 47 percent and their fat record 42 percent in 10 months. Ninety-six Holsteins decreased their milk 49 percent and their fat 47 percent in the same time. The percentage of fat gradually increased as lactation advanced.

IN THE NEW YORK MARKET

The price for March milk was fixed earlier than was expected by upstate farmers, since the two previous months have been delayed. For 3 percent milk the price in the central milk sections of the state gives us some two or three cents above $3 a hundred pounds, with four cents a point, or 40 cents a pound for butter-fat, above the 3 percent standard. In addition to this price there is 12 cents added towards making up the loss in December. It is understood that other additions are due for April and succeeding months, but of this we may know more when the prices are announced. So far as we can figure we are given 27 cents more than the price announced for Chicago, and for the most part this has been the case right along. Price announcements are on so many bases that it is difficult to figure exactly, but if we get the right basis from which to start we seem to be 27 cents apart. The test and the miles out figure so differently that one might hesitate to say whether or not this is just to both parties, and I am inclined to stop short of stating the exact basis employed. That there is a relation appears to be certain.

Federal Commissions

The two commissions, Chicago and New York, are similarly constituted. The former has nine members from the city and three not totally ignorant of farm conditions. About the same would be said of the New York commission; at least the city side has a large majority of the members. It is said that the members are high-minded men, and very likely that is true but a city man is necessarily narrow in relation to agriculture. He cannot understand farming but thinks he knows, which makes the situation all the worse. Now that

country people are scarcely more than one-third of the population it is difficult to get any fair representation, and little can be accomplished except by co-operation among the farmers themselves.

Day by day farmers are having the real situation revealed to them. Packers and other big industries have the inside information and are giving authorities advice as to what shall be done with food producers. Daily it is coming home to the farmer that he is likely to get little consideration unless it can be impressed upon authorities that they are playing a dangerous game with food prices. The food administration says that they are co-operating with producers to get a proper price fixed for milk. In form this is true. Yet after getting producers to agree to the methods they are scarcely reasonable in the appointment of men and commissions. At least farmers generally believe this to be the case. Farmers are the most conservative people we have in relation to any disagreement or disturbance that can annoy the government. They will stand a lot of injustice, but they do not want to harm the government by silence as to danger from food shortage any more than they want to harm by agitation. They are a bit doubtful as to the right course to pursue. Then, too, they want their rights.

Use More Dairy Products

As for cows, we seem to have enough in this state for the present. But there is a strong tendency to cut short the calf crop, and this is likely to show itself in a year or two in the cows for milk production. We are looking for some advance in cow prices this spring, for dairymen seem inclined to go toward summer milk rather than winter production. What this may mean to the price of milk is a problem. There is a large shortage of cheese and butter even now, and the outlook for cheese making is anything but favorable. If we take a long look into the price for milk we may guess on the basis mentioned above that we will get about $2.25 for June, perhaps not that if the same commission continues to fix the price.

It would seem that such a price might make cheese possible for a short time anyway. It is said that the government has become interested a little in putting cheese into the army and the training camps. I heard this suggested to one of the food administration in the winter and he asserted that the soldiers did not like cheese. Prof. Stocking, I am told, proposed to try it out and sent a cheese down to some of the boys with instructions to distribute it and see if it wasn't liked. The result was that there was a demand for cheese right along, and possibly the government can get loose enough from the packers to permit them to order a little cheese for the boys. If so, it will make a market for cheese that will be worth while. We are so tied up to business that it is hard to get free

Meanwhile, with cheese due at wholesale at something around 24 cents a pound, we ought to make a market for a lot of cheese right on our dairy farms. It is enough sight cheaper, especially when considering its food value, than meat and a lot of people like it as well. Dairymen should eat cheese and butter and make use of a lot of milk; Dr. Warren says we ought to consume a quart of milk to a person on the farm. There are farmers who eat oleo and ought to be ashamed of it. If farmers would use these superior foods freely they would pretty nearly take care of the surplus themselves most of the time. If we didn't use any of these, good authorities say, we would starve to death after a while, and within reasonable limits the more of them we use the better.—H. H. L.

REDUCED DAIRY PRODUCTION

Many of our dairy farmers are inclined to produce less milk than in former years. This is no idle dream, for many creameries are getting much less milk than last year. In a talk with some farmers on the street a day or so ago I got some surprising statements. These were well-known producers in the vicinity and owners of large herds. One said he is selling four cans of milk a day but if he were feeding as formerly and keeping the same number of cows as now he would get nearly eight cans. Another, the owner of a purebred herd, said he is feeding about one pound of grain to five of milk where formerly he fed one for three of milk. He also complained that his ensilage is of poor quality. The third man declared that he didn't care what the price of grain was for he isn't feeding any. He has good ensilage and he says his cows, while not as fleshy as usual, are looking pretty well. He is not getting nearly as much milk but it is costing him much less to produce it.

I am not advocating that the example of these men be followed, but simply observing what is taking place as the result of high priced and comparatively low priced milk—the result of making a price for milk lower than the cost of producing it.—H. H. L.

RECENT NEW YORK DEVELOPMENTS

One of the most important of recent milk developments in New York is the news that the court of appeals has decided that the law requiring milk dealers to give bonds is constitutional. The Commissioner of Agriculture will at once insist on the dealers furnishing security to farmers, many of whom have suffered heavy losses in the past months. The Federal Milk Commission announces that 12 cents of the March price of $3.22 per 100 pounds for 3 percent milk, which in total is 12 cents less than February prices, are to recoup producers for the losses incurred in December by concessions then made to the government. Another 12-cent recoup will be made in April, the basic price for that month to be fixed a month hence. The entire recoup of 24 cents applies to both producers and distributors, the consumers' price remaining practically unchanged for March. Grade B milk to stores is one cent cheaper, as the only change for March.

Dairymen find grave significance in the fact that 84,000 less heifer calves are to be raised this year than last, with a 25 percent decrease in the number raised last year over the previous year. Within a few years there must be a serious shortage of milk cows due to high feed prices and low milk prices.—F.

Shortage of wheat in France is becoming more alarming each week. Pastry is now classed as a luxury and its manufacture or consumption is now suppressed except on Sundays and holidays.

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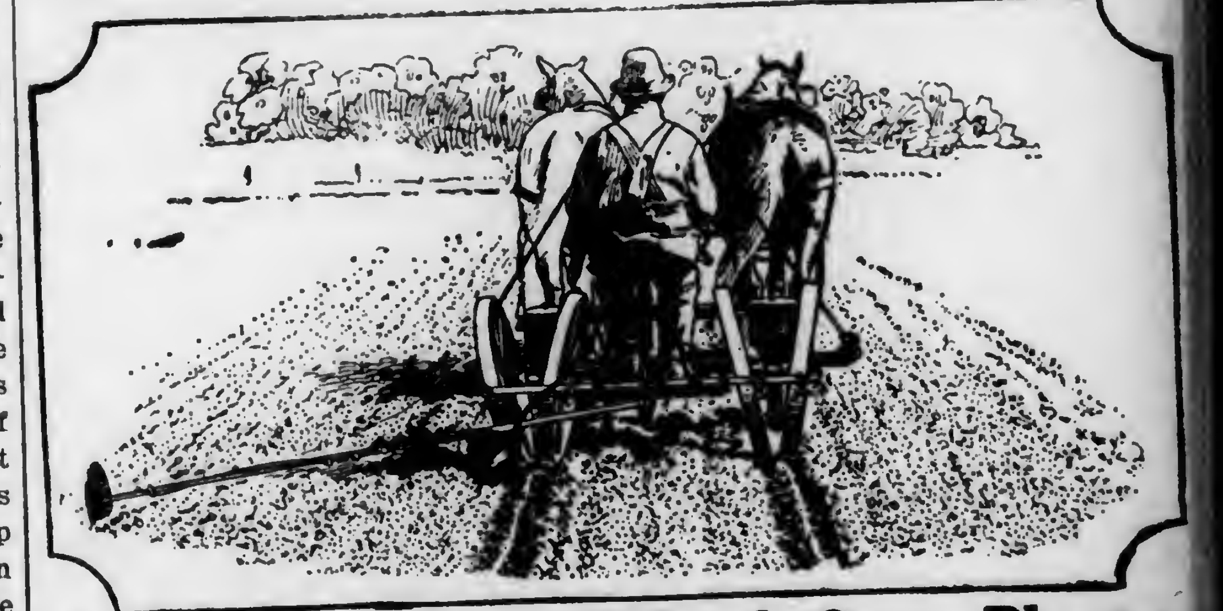

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Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Potato Markets Very Weak

Still lower levels were reached in most potato markets thruout the producing sections, with declines of 15 to 30 cents at Western and Northern points, but Northwestern sections held fairly steady.

Complaints of car shortage persist, especially West and Northwest. Shipping movement, however, gained sharply to 3,091 cars, against 2,770 last week and compared with weekly average, 2,550 cars since January 1.

Apples Slightly Lower

Barrel stock sold to jobbers about 25 cents lower for most varieties, but Ben Davis Western, "A" and fancy held fairly firm at a range of $4.50@5. Most other standard kinds are approaching the end of their best keeping seasons and many lots are in less desirable condition. New York Spys reached $7.50 in Chicago. In the producing sections carlots of extra fancy, large Winesaps from cold storage held at $1.72@1.85 per box f.o.b. Northwestern shipping points. Barrel stock, "A", ranged $5@5.25 for Greenings and Baldwins, f.o.b. Rochester, N. Y.

Cabbage Slump Continues

Demand was light in the Western New York shipping section, and values dropped to $25@35 per ton, in bulk, Rochester and $15@20 cash at growers' stations. Shipments of old cabbage declined 62 cars, with total of 177. New cabbage also declined, with 239 cars compared with 256 last week.

Onions Again Decline

New York, Ohio and Indiana Yellow Stock sold to jobbers 25@50 cents lower at $1.25@2 per 100 lbs. and New York Yellows at $1.25@2.25 lowest in New York, Chicago and Pittsburgh, and highest in Boston and Buffalo. Red onions fell to $1.10@1.25 at St. Louis but sold $1.75@2 in Kansas City. Producing sections reported few f.o.b. sales, but considerable stock went forward on consignment. Best Yellows sold f.o.b. track, Massachusetts shipping points at $1.65 sacked.

Beans at Firm Values

Sales of New York Whites Stock held last week's advance, at $12 per 100 pounds in bulk, trackside, at Rochester. Michigan Navys sold at 50 cents higher, $13.50 f.o.b. Grand Rapids, and were quoted unofficially at $12.50 to growers at Holley. A canvass by the bean trade reported almost 100,000 bushels of moist beans held by growers in Western New York. Sales to jobbers followed generally steady prices, at $13.75@14.25 per 100 pounds sacked, for New York, Michigan and California White Stock.

Most Lines of Produce Lower

General weakness has prevailed in leading lines of produce since arrival of weather more favorable to shipment. Potatoes continued the rapid decline of the past month. The onion market has been dull all winter and is still more sluggish now that the winter stock is coming forward more rapidly with the arrival of Texas onions not many weeks distant. The demand for old cabbage has been lessened already by the liberal offerings from the South, and Northern shippers' prices are now about one-half the quotations of two weeks ago. Celery is also selling rather slowly. Fruit, on account of the lighter supply this season, is doing better than vegetables and meets good demand at fairly steady prices. The car shortage is easing up in some Eastern sections, but is still serious at Western shipping points.

NEW JERSEY MARKET NEWS

Distribution of Foods Inefficient

Farmers are taking an interest in the methods used to distribute their products. For fifty years growers have given more and more of their attention to the multiplying problems of production and have paid less attention to selling. The present war conditions are forcing producers to consider the distribution side of their business and it cannot fail to be a healthy factor in reorganizing our systems.

Men of wholesale produce trade appreciate the disrepute brought upon their business by the irresponsible persons who have found in this business inviting opportunities for fraudulent practices. Wholesale dealers will probably maintain the Government license code after the war and so endeavor to weed out dealers who are unworthy of the producers' confidence.

The selling of perishable food by telephone, the furnishing of costly delivery and other service and the credit system must be weeded out. The perishables constitute one of the most important groups of food materials and we are learning that food is the great factor. Many separate studies and observations in New Jersey and elsewhere have shown that the gross-profit from producer to consumer frequently amounts to 200 percent. This is where the producer becomes interested. He takes the stand that he puts the greatest amount of energy in the food supply and is therefore entitled to a fair proportion of the ultimate price. In considering a wider field for his labors he reasons that if consumers could secure his products at a lower cost they would use more of them and thereby increase his market.

Criticism aimed at retail storekeepers have been unfair in many cases as they have criticised the prices and not the methods. So many persons have engaged in the retail business that simple competition prevents any unreasonable profits. It is this same competition which has urged them to offer greater service to buyers and the consequent enlargement of overhead expenses.

Consumers Responsible

Dealers only comply with consumers' wishes. If we insist on having our small orders delivered and in carrying a charge account; if we demand that our staple grocer carry a full line of perishables; if we trade the most with the dealer who spends the most money in advertising; if we spend our money at the stores which afford the largest windows, pay the highest rent and employ high-priced window dressers; if we continue to trade with "The" store because we want others to know that we spend freely; if we are ashamed of thrift and allow other motives to rule our buying, we absolutely must pay for the custom.

Wholesalers Should Sell to Anyone

The field of the wholesaler in food products is quite definite. No other factor in food distribution is more important. It is he who gathers together large quantities at all seasons from great distances and so enables the small retailer to replenish his supplies as needed. Handling only large quantities the wholesaler can operate on small margins. The practice so persistently adhered to of protecting these retailing customers has an unsound basis. Many of our most distinguished wholesale houses maintain a policy which will sell a small retail store 2 dozen cans of condensed milk and refuse to consider an order for fifty dozen from a society or group of individuals.

It is said that marketing consists of gathering together and distributing apart. If the wholesaler's service is to gather together, there is no sound reason why one order should not receive the same attention as any other, providing it is of a quantity which can be handled advantageously by the wholesale machinery.

Potato Prices Dropping

Retail prices felt the publicity of last week but only a little. In Trenton stores are charging from 65 to 80 cents per half-bushel for good stock. Wholesale dealers are selling on a basis of 50 to 55 cents. Red Bank stores are asking about 80 cents; while in Elizabeth and Jersey City retail prices are still about $1.

In the growing sections farm prices are ranging about 45 to 50 cents per half-bushel.

ANIMAL PRODUCTS

The price gains of animal products at the farm during the two years are lower in general than the crop-price gains in general, and lower than the price gains of the animal feeds. Dairy products gained in price 32 percent, and the range is from 29 percent each for butterfat and cream sold to 36 percent for butter. Eggs gained 55 and fowls raised 40 percent, the average being 49 percent. The gain for swine sold and slaughtered was 92 percent, calves 91 percent, sheep 72 percent, and cattle other than calves 31 percent, the average for the food animals being 63 percent. The work animals sold have places lower in the scale; mules gained 30 percent in price and for horses the gain was 1 percent. Wool gained 107 percent.

The gain of meat animals sold and slaughtered in average price was 63 percent, and of poultry products, 49 percent.

CORN PRICES MUST VARY

Prices for ear corn must vary monthly after husking time because of the shrinkage of the grain in storage. What was a bushel of corn last November is about nine-tenths of a bushel by spring and by August it will lose more than a fifth in weight

Based on the shrinkage of a bushel (70 pounds) of well-matured corn in storage, the following scale of prices has been worked out by the Ohio Experiment Station with corn at the arbitrary price of $1 on November 1: December $1.05, January $1.08, February $1.09, March $1.10, April $1.13, May $1.19, June $1.23, July $1.24, August $1.26, September, $1.25, October $1.24.

The results obtained during the eight years of this test show a gradual shrinkage until August and a slight increase in weight during the succeeding months. This corn on November 1 contained 25 percent moisture and the cobs 41½ percent.

The values of such immature corn equivalent to $1 a bushel on November 1 follow: December $1.05, January $1.09, February $1.11, March $1.14, April $1.22, May $1.31, June $1.38, July $1.40, August $1.41, September $1.40, October $1.39.

POTATO AND CORN ACREAGE

The agricultural census of this county, just taken by school teachers, shows that farmers are planning to reduce potato acreage heavily next year; reports showing 4,747 acres last year and 3,513 acres proposed this year. As the acreage planted is sure to be less than that planned you will note that Tioga County farmers are not finding potato growing profitable. Plans of acreage of corn to be husked for grain goes up from 2,100 to 3,800. That shows which they consider the best paying crop.

Seed potato demand is practically all from regular farmers. The class of city farmers who bought so much seed last spring has apparently dropped out this year. Labor is very short and many farmers will devote much attention to getting as much food as possible for themseles before raising for sale.

I believe that the time will soon come when food shortage will compel the removal of all restrictions on food production. The first season of poor yields will teach the city man that the same policy of price hammering which produced for him the heatless Monday is equally certain to produce a "foodless" Tuesday.—Daniel Dean, Tioga Co., N. Y.

A SHORTAGE IN FRUIT PACKAGES

The importance of fruit growers and other shippers getting their supplies of baskets, crates, etc., on hand is contained in a statement issued by the Bureau of Markets in the State Department of Agriculture, at Trenton, N. J.

There is a serious shortage in lumber from which these containers are made, and the labor situation is such in the South where the bulk of them is manufactured, that many dealers are doubtful of supplying their customers' normal demands. The Bureau advises that fruit growers combine their orders and purchase in carload lots and it can supply a list of dealers from whom these containers can be purchased. The Bureau also advises immediate placement of orders.

Poultry

TIMELY POULTRY PROBLEM

An Answer to a Poultryman's Letter

(Editors' Note.—The U. S. Food Administration sends the following letter and answer for the purpose of meeting the very general objection raised over the order prohibiting the sale of hens and pullets. Read it in the light of "Father Penn's" comments in issue of March 2. Do you think the following answer answers?)

"Will you kindly give me some much needed advice," writes a Vermont farmer to the U. S. Food Administration, "to govern my actions in complying with your recent order prohibiting the sale and slaughter of hens after February 23?

"I am operating a farm of 206 acres," he continues, "lying in the Champlain Valley, Vermont, and have a flock of 1,100 White Leghorn hens of which about 700 are last year's pullets. My pullets produce about 160 eggs apiece a year. It is my practice to hatch between 600 and 700 pullets each spring, the first hatch coming off about April 1. As the capacity of my plant is about 1,000 birds and is now overstocked, I will have to cut out the hatching until such time as you may permit the sale of my old stock to make room for the new."

This man understands the purpose of the regulation notifying licensees not to buy live or fresh-killed hens and pullets until after April 30, for he continues, "Of course, such a line of action would throw onto the market about 200 dozen eggs that I would otherwise use in incubators, but there would be the loss of about 700 broilers and my flock will not lay as many eggs this year without the new stock.

"There is a great difference in the effect of your order when applied to a man running a poultry plant of a fixed capacity as compared with a man who has a few hundred hens running at large about his barns. At this time I have a flock of cocks at an expense of about 40 cents per month per bird that should go to market at once if they are not to be used as breeders; the feed they are eating should be saved. Will you kindly tell me what should be done?"

Three Choices to Select From or Combine

Here is a case where a general order, necessary as a war measure, and of benefit to the industry as a whole, causes a specialized poultryman anxiety and inconvenience. Under the spirit of the regulation, several alternatives are permissible. (Male birds are not affected by the regulation and may be sold at any time for any purpose.)

1. Surplus hens and pullets may be sold as breeding stock. With the impetus which meatless meals and days have given the poultry industry and the nation-wide effort toward larger flocks, there should be an outlet in every locality for well-bred fowls—especially birds which average 160 eggs apiece annually. The Food Administration's order aims only to prevent the slaughter of hens and pullets. There is no restriction on the distribution of high-class breeding stock; this, on the other hand, is encouraged.

2. The edict extends only thru April 30; and as this poultryman's first hatch comes off April 1, the period of inconvenience is only 30 days during April. Temporary quarters for the surplus hens during that time should prove no serious problem on a farm of 206 acres. After April 30, the surplus hens may be sold for slaughter, in the absence of a better market.

3. Another choice is a few weeks' delay in the hatching season so that chicks will be hatched about May 1 after the surplus hens are sold.

Any one of these options or a combination of them seems to impose no very serious hardship. The Food Administration points out that the average yield of spring eggs according to past experience is about 80 percent of the meat value of the hens in the country. And in this particular flock, the production per bird is unusually high.

The problem seems in its final analysis to be one of profit on one hand and the amount of food produced on the other, considering the future as well as the present. Under the regulation notifying poultry buyers not to accept live or fresh-killed hens or pullets until after April 30, 1918, it is confidently hoped that the food supply of the country will be increased. But the letter of the regulation applies neither to farmers nor to consumers. Nor does the Food Administration seek to dictate to poultrymen how they shall conduct their business.

More Money or More Food?

It seeks rather to safeguard the Nation's food supply and to most effectively share our food savings and surplus with the Allies to win the war. Perhaps this Vermont farmer honestly believes that the marketing of his surplus hens for direct consumption would be in harmony with the spirit of the new regulation. Considering present housing facilities, hatching plans, future broilers and winter eggs, he may feel justified in believing he can best serve his sons or his neighbors' sons "over there" by marketing his hens—fowls that he admits are excellent layers—to a private trade.

But if he has looked at the matter chiefly from a financial rather than from a food point of view, seeking to profit by the meatless days and by the demand for fowls during Jewish holidays, and has calculated how he can make the most money rather than produce the most food, the sale of his surplus stock for use as meat is adverse to the spirit of the new poultry regulation.

Thus there are plenty of choices. He is immune from legal penalty and is subject only to his conscience. This man is no doubt one of many who this spring must decide between patriotism and profit.

Range Colony House

GUINEAS FOR PROFIT

In the past the guinea has been considered a hobby rather than a profit-producer. This has changed, and it has come about thru the growing scarcity of game birds and the laws prohibiting their sale in many states. In many ways the guinea is the nearest approach to wild game that has as yet been profitably produced on the farm. What the future may have in store in the line of pheasant and quail breeding is still a question for time to decide.

There are two leading varieties of guinea fowl — the Pearl and the White African. The former is more common in most parts of the country but to our mind not so profitable to keep as the latter. Our reasons are that the African seems more docile and easily cared for upon the farm, running with the hens and sometimes laying in the same nests. Both varieties usually steal their nests in some secluded spot at a distance from the house, where the hen will lay a large number of eggs if not disturbed. As all guineas are wild it is best to approach the nest with caution and the eggs should be removed with a long-handled spoon, leaving a few at all times that the bird may not suspect that she is being robbed. The eggs are smaller than those of the hens but they are usually as good, being excellent for home use. The guinea lays from May to the latter part of August or later and if the eggs are removed from the nest frequently the bird will seldom want to set.

The best way to start a flock of guineas is to set the eggs under a good motherly hen. The eggs require from 25 to 28 days to hatch. After the eggs have been setting for a week, add a few hen's eggs. The chicks will exert a good influence towards taming the young guineas. It is well to confine the young birds for the first week of their life, allowing them no opportunity to escape. After a period with the hen and a few chicks they usually learn the ways of their foster-mother and give little trouble. When their feathers are grown to some extent, they become hardy and can take care of themselves. It is important that the mother hen be kept free from lice and vermin as these parasites will kill the young birds. Young guineas frequently follow their foster mother about even when they are fully grown.

Young guineas should be fed several times a day for a week after being hatched. Dry bread makes a good first feed, or the bread may be fed slightly moistened with milk. Lettuce or chopped onion tops should be given them as long as they remain in confinement. A little fresh meat is also excellent. When they get on the range they will pick up all the insects necessary for their diet. The guinea does not scratch so they may be allowed the freedom of the garden without fear of damage, indeed they do more good than harm as they eat insects that infest the plants. Cracked corn is an excellent food for the growing birds. They will not eat much of it anyway.

A young guinea fowl is not exceeded in delicacy by the tenderest chicken either broiled, roasted or fried—in fact the gamy flavor of the guinea commends it to many as far superior to chicken. The older birds, also, are better when cooked than an old hen. In the larger markets it is becoming better known each year. The white birds dress off and have a better appearance than the colored ones, yet this fact does not seem to matter in the markets. Whether one breeds the African or Pearl variety is therefore a matter of taste.—C. H. Chesley.

GENERAL-PURPOSE BREEDS

Among the popular breeds of the general-purpose class there are differences in type, adapting breeds to different uses. The Plymouth Rock is generally regarded as the type meeting the widest range of requirements in the general-purpose class.

The Wyandotte is a little smaller and earlier maturing but still very well meated and easy to fatten.

The Rhode Island Red has nearly the same standards of weight as the Wyandotte but is a more active bird, not putting on fat so readily; consequently it approaches the laying type and is popular with those who want eggs and meat, but want eggs most.

DISPOSE OF OLD HENS

Unless the old hen possesses valuable traits as a breeder, it is never advisable to hold her thru her third winter. Many poultrymen make it a practice to winter no stock except the pullets, disposing of the hens when they are about eighteen months old. While this is a safe practice to follow and will insure the highest possible profit, few farmers have sufficient pullets to fill their houses and some old stock must be held over. Besides old hens make the best breeders and even if one has a sufficient number of well-matured pullets, it would still be advisable to keep the best of the old hens for next season's breeders.

Two-year-old hens make the best breeders. While hens three years old or over may produce strong, healthy chicks, they should not be held in the flock, for the reason that the on-coming lot of pullets could be marked in the manner of the lot of hens that is to be sold.

POULTRY HOUSE UP TO DATE

I have two poultry houses that I think are hard to beat as to roosts, wind draft, laying and scratching departments. The houses are 12x100 feet and are divided into two departments 12x50 feet for a roosting place and 12x50 feet for a laying and scratching department. The roosts are 4 feet from the floor, which is concrete. All roosts are on a level. There is no litter in the roosting department. The roosting poles are in 5 sections and are swung out of the way by means of pulleys. In this way the houses can easily be cleaned. No place for mites, lice or rats. I think dropping platforms are good lice harbors.

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IRON AGE Combined Hill and Drill Seeder solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's handwork in 60 minutes. 30 combinations, $4.50 to $30.00. Write for booklet.

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TELLS WHY CHICKS DIE

E. J. Reefer, the poultry expert, 238 Reefer Bldg., Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

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Farm drainage demands durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned—everlasting. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO, Natco Building Tile and Natco Sewer Pipe.

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Goulds Fig. 858 Lift and Force Pump for hand pumping

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By washing the poles or roosts with kerosene whenever you see a few mites does the trick. In the laying department on the north side of the buildings are three rows of nests five feet from the floor. Next to the nests is a 12-inch walk; on the south side of this walk are two more rows of nests six and one-half feet from the floor. The last mentioned nests are in the center of the building, leaving plenty of space for a person to walk. The walk is three and one-half feet from the doors. This walk is used to collect the eggs and give the hens access to the nests. All the nests are separate and can easily be removed at any time for cleaning. All the space of the floors is used for scratching. The south side has windows which slide either way, with wind shields.

The windows in the south side give light to the nests on the north side. South sides of the poultry house are large yards with running spring water all the year round. These yards are planted with pine trees, peach, apples, plums and catalpas, which make plenty of shade in summer. Each house has 500 hens, White Leghorns, and Rhode Island Reds. The products of this poultry plant are sold to private people in Germantown, Pa.—O. H. S. Maurer, Montgomery Co., Pa.

A Continuous Nest in Poultry House

HANDLING GOSLINGS

The farmer who has a lot that can be fenced tightly will do well to consider the profits from raising a flock of geese. There is no branch of poultry keeping more profitable where plenty of pasturage is available. During the spring and summer geese are very quiet, hence a fence three feet high will keep them within bounds. A lot, thru which a small brook flows or where there is plenty of moist ground available is best suited to their needs. They will thrive on tender grass but it is well to give them one feed of grain every day.

It is not advisable to hatch goslings before the grass has made a good start in the spring, hence it is quite early enough to set the eggs the first of April. Green grass is a necessity almost as soon as the youngsters are out of the shells. Usually it is well to make the earliest settings under chicken hens and then the geese will lay another clutch. Later hatchings are made under the geese and they will frequently adopt all the goslings, as the hen mothers do not remain long with them. From one to three geese are allowed to each gander and the eggs usually hatch well. The period of incubation is from twenty-eight to thirty-one days. Eggs are usually pipped twenty-four hours before the young birds appear. If the weather is dry as the time for hatching approaches, the eggs should be sprinkled with warm water several times.

For the first twenty-four hours no feed should be given the goslings, then for a week or ten days stale bread moistened with milk is good. After that give a crumbly mash made of corn meal and bran or middlings. Five feedings per day should be the rule for ten days, then three feeds for the next three weeks. After that one feed per day is sufficient, until the last few weeks before marketing.

Until the quill feathers start the goslings are rather sensitive to moisture, hence a dry place must be provided for them at night and during rainy weather. Some care is necessary for a few weeks but when the feathers are well started, they may be trusted to take care of themselves. The old geese seem to realize this and will lead their broods to cover when rain comes on. Later they do not pay any attention to rain, as they appear to know that the young have outgrown the tender period.

Grass is a necessity from the time the goslings come out of the shell. A rat-proof coop with a run attached, where there is plenty of tender grass, should be provided at first. Later the goslings appear to be able to take care of themselves so far as ordinary enemies are concerned. Sometimes, when young goslings are allowed the run of ponds, turtles prove a menace. Usually it is best to keep them away from ponds until well developed. Shallow brooks or spring-holes are desirable in their runs after the goslings are four weeks of age. Sickness seldom troubles the goslings if they have plenty of pasturage.—C. H. Chesley, N. H.

HEAD LICE FATAL TO CHICKS

There are two kinds of lice that infest the heads of fowls and chicks. One of them, commonly found only upon adult fowls, is very small, whitish in color, and may be detected only by a very close examination. The other is a large gray louse that, when present, is readily seen by parting the down upon the heads of small chicks. It is known as the large head louse.

Head lice are true blood-suckers and are true to their name, as they are never found anywhere except on the head and the neck of fowls and chicks. With their long bills they puncture the skin and blood vessels beneath, hence the blood which they drain comes from a position directly over the brain.

As the little chicks are hatched by a hen, these lice leave the hen and attach themselves to the chicks. If

one will pick up a droopy chick that has been hatched and brooded naturally, and examine its head he will almost always discover head lice, sucking blood. They cause such extreme weakness that often the bodily organs are unable to perform their functions properly, and it is thought that the chicks are suffering from diarrhea or some other disease, when it is really head lice that are killing them.

To destroy head lice, apply equal parts of olive oil and kerosene, or clear lard and kerosene, to the head and neck. Picking up each chick singly, dip a finger into the preparation and put a small drop on the back of the head. One must not apply too much, as any kind of oil or grease if used too freely on the bodies of fowls or chicks will prove fatal. When the chicks have been treated, take each brood hen and anoint the body lightly on each side under the wing; one dipping of the finger will be sufficient for each side. As the chicks are hovered the mixture of oil and grease will be distributed over their heads sufficient to rout the lice

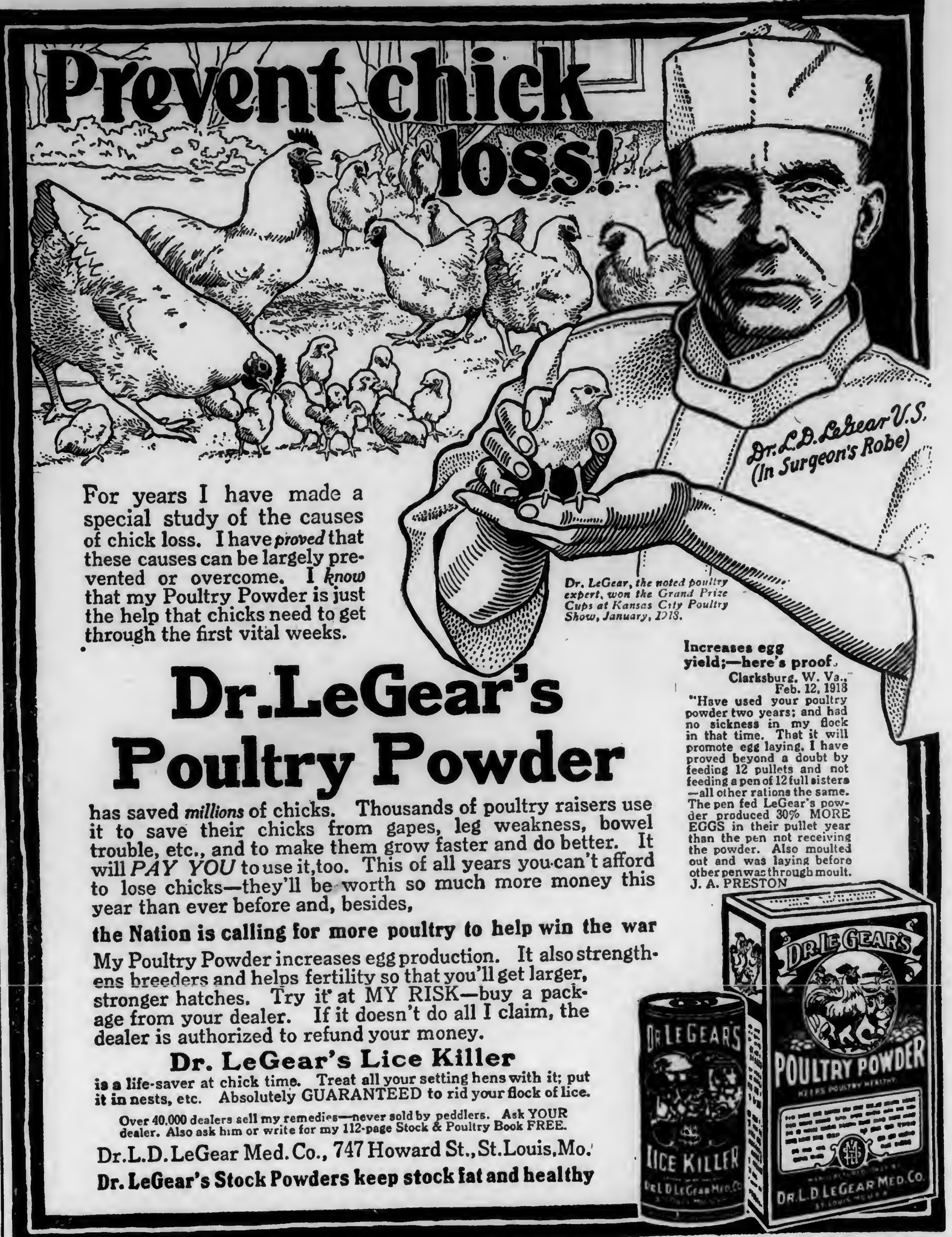
Until the chicks are fully feathered the owner should keep lice in mind and examine the chicks at least weekly, or even twice weekly. One should take time to examine the chicks carefully, else the lice may be overlooked and the chicks will soon perish. It is seldom necessary to examine brooder chicks more than once or twice, but hen-brooded chicks may require treatment every few days for several weeks.—W. F. Purdue, Ind.

ONE BREED PAYS BEST

In keeping poultry we have found that the most profit can be made by confining the operation to one breed. At the same time we constantly have to fight the temptation to try out a few of the other man's breed whenever we hear them talked about. However, the farmer who keeps one breed runs less risk of mixing his flock. He gains some reputation in the neighborhood if he gives one breed the proper care and other poultrymen will often come to him for hatching eggs or breeding stock. The broilers will be more uniform in size and quality and the eggs will also present an appearance that is lacking when eggs of different colors and sizes are mixed.

More than one breed of poultry on the farm means that careful fencing is necessary in the spring. If eggs are sold for hatching from large flocks it means that every precaution is required to avoid mixing. This is especially important where the birds have been accustomed to free range. Making poultry profitable requires plenty of work and it hardly pays for a farmer to complicate the situation by experimenting with more than one breed. One breed of poultry properly managed and studied will be enough to keep the average man busy for several years. There is a great deal to learn about every breed and a large accumulation of knowledge in the mating of one breed is worth more than a mixed lot of information relating to all breeds.

We expect to continue with one breed but must admit that a poultry show or a visit to a neighbor's poultry plant often gives us a strong desire to try out a few specimens in our own yards. This is true even when facts and figures prove to us that one breed is the most economical to manage.—R. G. Kirby.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Dr. LeGear, the noted poultry expert, won the Grand Prize Cups at Kansas City Poultry Show, January, 1918.

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"Have used your poultry powder two years; and had no sickness in my flock in that time. That it will promote egg laying, I have proved beyond a doubt by feeding 12 pullets and not feeding a pen of 12 full sisters—all other rations the same. The pen fed LeGear's powder produced 30% MORE EGGS in their pullet year than the pen not receiving the powder. Also moulted out and was laying before other pen was through moult.
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has saved *millions* of chicks. Thousands of poultry raisers use it to save their chicks from gapes, leg weakness, bowel trouble, etc., and to make them grow faster and do better. It will *PAY YOU* to use it, too. This of all years you can't afford to lose chicks—they'll be worth so much more money this year than ever before and, besides,

the Nation is calling for more poultry to help win the war

My Poultry Powder increases egg production. It also strengthens breeders and helps fertility so that you'll get larger, stronger hatches. Try it at MY RISK—buy a package from your dealer. If it doesn't do all I claim, the dealer is authorized to refund your money.

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is a life-saver at chick time. Treat all your setting hens with it; put it in nests, etc. Absolutely GUARANTEED to rid your flock of lice.

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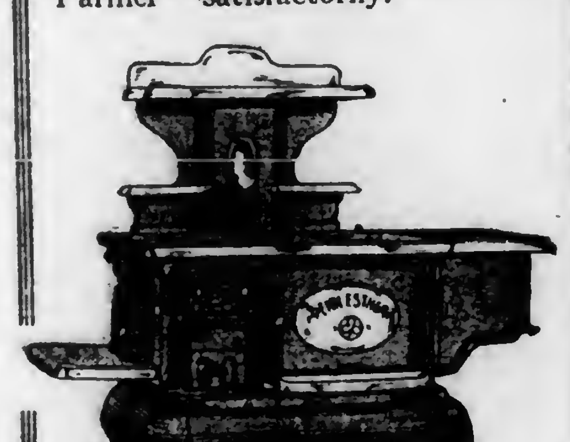

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Prepare For The Lambs

Little Details in Care of Ewe and Lanbs

On your mark; get set for the work of the lambing season. Many of us need a starter in order to be ready for the big race with our farm operations.

Just now all is quiet in the sheepfold and one might readily be lulled into a sense of false safety for very soon the lambing time will be upon us; the most difficult and the most vital labor in the sheep breeders' work. The percentage of lambs raised will be the chief factor in determining the percent of profit on the year's sheep business, and pre-lambing care of ewes greatly influences the number of little woolly babes saved. Many of the readers of this article are probably approaching this most critical period as beginners in the sheep-breeding game. For those as well as for the experienced breeders we offer these suggestions:

Care of Pregnant Ewes

Sanitation is important; keep her feet clean. She will do this if you will keep it dry under foot. It may be necessary to lay temporary walks from the shed to the watering or feeding place during the muddy spring weather. Have her toes well trimmed and make sure that her feet are in a healthy, clean condition before the muddy period arrives. Do not shut her up in a close, hot barn. All she needs is a building that will keep her dry and protect her from the storm or drafts. The building may be open at one side, just so it meets the requirements stated. Have wide doors or openings to avoid jamming. An exercise lot is essential. A pasture where the sheep can go out and work in open weather is a good help. The pregnant ewe must be made to exercise by walking to water or out for hay, grain or other feed. If she becomes sluggish or overfed, trouble will be experienced at lambing time. Good clean, uncontaminated water, available whenever she wants it, should be provided. Briefly then dry underfoot, plenty of clean drinking water, fresh air and exercise are needed.

Feed

Feed with a view to furnishing material to make blood, lean meat, muscle, bone and nerves, for such are necessary to develop the lamb and maintain the ewe. A fattening ration is not good. Feed with a view to keeping the ewe in a healthy, thriving condition so that when the lamb comes the mother will have an udder already filled with milk. A poorly-fed ewe will not have much, if any, milk and is very likely to refuse to own her lamb. It is impossible to beat the sheep game by starving the ewe before lambing. A heavy milking ewe is the best guarantee for a big, growthy lamb.

Fortunately, the feeds required to meet these needs are readily grown on any farm. First, give her all the good, sweet clover or alfalfa hay that she will eat up clean. If fed no other roughage she will probably consume 3 to 5 pounds a day, depending on the size of the ewe. Clean oats straw and corn stover are relished during cold weather and can be used to particularly good advantage when corn silage is being fed. If good corn silage is available; that is, silage not moldy, decomposed or highly acid, it is a very economic feed and gives good results fed at the rate of 2 to 3 pounds a day with what dry roughage the ewe will eat up clean. Salt should be available at all times. Sheep show the greatest liking for salt of any of the farm animals.

With the roughage before prescribed, very little if any grain will be necessary until six weeks before lambing, unless the ewes have gone into winter quarters in poor condition. From four to six weeks before lambing, about one-quarter to one-half pound of grain daily should be fed. Either of the following grain mixtures are good. No. 1, 5 parts corn (not ground), 3 parts oats, 2 parts wheat bran and 1 part oil meal. No. 2, 4 parts corn (not ground) and 1 part oilmeal. In some cases, if the sheep are being fed corn silage and show too laxative a condition, oilmeal may be replaced by cottonseed meal.

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The Lambs

The normal gestation period of sheep is 147 days. Before the lambs arrive, have an individual pen prepared where the ewe may be placed while yeaning, where she may be kept until her lamb is well started, usually one to two days. This precaution will avoid her refusal to own her lambs. See that any strings of wool around the udder are cut off and be on the job to see that the little lamb gets a full stomach of milk just as soon as it arrives. This is especially vital during the cold weather. It is wonderful what a strengthening effect just a little milk has. Commonly the first feed will be the only one the lamb will need help with and in most cases the lamb will hunt its own milk.

Particular care is necessary in case of twins as the ewe will often times pay especial attention to one and overlook the other entirely. Properly handled and fed, ewes will have strong lambs and have plenty of milk. With small flocks and under these conditions one should raise close to a 100 percent crop of the Merino lambs and 125 to 150 percent of the mutton type lambs. The best shepherd cannot save a high percent of lambs from weak, under-fed, or sluggish, overfed ewes.

After Lambing

Keep the ewes that have lambs separate from those yet to yean. The grain feed may be increased to from one to two pounds daily. Immediately after lambing, if the ewes are in good condition and are heavy milkers, it is advisable to give little or no grain for two or three days as there will be danger of milk fever from heavy feeding. See that the udders of heavy milkers are milked out clean after the lamb is thru. Creeps for the lambs should be provided where the lambs can be together for a play and learn to eat some feed provided in their pen. They should be permitted to eat what grain they desire, but any that is left should be cleaned out twice daily and fed to the older ewes. They will begin to nibble at the grain in from 10 to 15 days of age. Good mixtures for the lambs are as follows: No. 1, 5 parts corn meal and 1 part oil meal. No. 2, 2 parts bran, 1 part crushed oats, 1 part finely ground corn meal and ½ part oil meal.—M., Washington Co., Pa.

SHEEP AND HOGS IN PENNSYLVANIA

An actual increase in the value of the sheep industry of Pennsylvania of over double what it was, with less sheep, three years ago is shown by figures just announced by the Pennsylvania Department of Agriculture. The total number of sheep and swine in each county of the state is as follows:

	Sheep	Hogs
Adams	6,218	23,585
Allegheny	5,708	16,177
Armstrong	11,357	21,827
Beaver	15,699	10,113
Bedford	20,697	24,377
Berks	713	41,807
Blair	6,426	11,354
Bradford	19,430	23,838
Bucks	1,938	27,022
Butler	18,817	23,050
Cambria	4,007	8,290
Cameron	507	437
Carbon	86	2,501
Centre	10,186	20,431
Chester	4,792	21,731
Clarion	6,148	16,121
Clearfield	4,079	12,027
Clinton	1,324	6,696
Columbia	879	18,338
Crawford	26,036	32,640
Cumberland	14,856	26,502
Dauphin	1,314	17,352
Delaware	1,393	7,977
Elk	406	3,215
Erie	11,965	20,092
Fayette	9,592	17,030
Forest	951	1,354
Franklin	18,528	35,906
Fulton	7,515	7,132
Greene	154,071	22,201
Huntingdon	12,537	15,291
Indiana	15,291	21,560
Jefferson	2,679	10,095
Juniata	4,438	7,450
Lackawanna	2,028	4,610
Lancaster	5,347	50,010
Lawrence	17,034	15,077
Lebanon	516	16,319
Lehigh	499	18,237
Luzerne	2,585	10,791
Lycoming	5,386	21,106
McKean	4,290	4,497
Mercer	34,958	27,434
Mifflin	5,135	10,844
Monroe	2,086	8,197
Montgomery	2,258	20,509
Montour	588	4,933
Northampton	1,406	21,062
Northumberland	1,003	14,099
Perry	3,732	11,738
Philadelphia	120	8,164
Pike	1,141	1,996
Potter	11,368	5,580
Schuylkill	378	10,511
Snyder	635	9,381
Somerset	12,778	19,576
Sullivan	5,867	3,199
Susquehanna	15,568	15,500
Tioga	23,642	11,698
Union	975	8,772
Venango	10,825	10,195
Warren	6,561	7,833
Washington	190,798	28,020
Wayne	7,368	8,148
Westmoreland	13,287	26,749
Wyoming	6,362	4,861
York,	3,708	53,165

Thus, from the above figures it will be found that there are 820,765 sheep and 1,068,333 hogs in the state of Pennsylvania.

The figures show that in January 1916 there were 794,712 sheep in the state and they were valued at $5.40 a head or $4,352,400. This year the estimates show 820,765 sheep on the farms in the state with an average value of $10.65 each or a total of $8,747,215.

What is true of the sheep situation is almost as true of the swine industry where the value has jumped from $11.80 a head in 1916 to $18.50 each this year. But there has been a gradual decline in the number of swine, there being 1,173,156 in 1916, 1,126,125 in 1917 and 1,068,333 this year.

The following tables show the change in the sheep and swine industry during the past three years:

Sheep—	Total Number.	Average Price.	Total Value.
1916..	794,712	$5.40	$4,352,400
1917..	803,402	7.00	5,670,000
1918..	820,765	10.65	8,747,215
Swine—			
1917.	1,126,125	12.90	14,841,500
1916.	1,173,156	11.80	13,974,800
1918.	1,068,333	18.50	19,766,751

BABY BEEF PRODUCTION

Live stock markets during recent years have experienced a constantly growing demand for well-fattened beef animals, weighing from 900 to 1,200 pounds. This has been due to the increasing demand by beef consumers for light-weight, high-grade cuts. Such a demand must necessarily be supplied by well-finished animals from 14 to 20 months old, carrying a large percentage of the blood of one of the early maturing beef breeds, usually that of the Hereford, Aberdeen-Angus, or Shorthorn. To distinguish them from carcasses of other beef classes, these have come to be designated as baby beeves. The preparation for market of this class of beeves requires more skill than is necessary in the production of animals marketed at more mature ages, since the growth in the latter is made largely on the cheaper roughages of the farm.

With the growing scarcity of feeder cattle and the advance in value of farm lands, the baby-beef industry is of increasing importance and is receiving the attention of farmers in all live-stock sections of the country. In a general way, the following are the advantages in favor of finishing cattle at younger ages rather than waiting an additional year or two before they are placed upon the market, according to S. H. Ray, of the U. S. Bureau of Animal Industry:

Young cattle make better gains than older cattle on the same quantity of feed. Yearlings make 25 to 40 percent more gain than mature cattle on the same feed. The quantity of feed necessary to make 100 pounds of gain increases with the age of the animal. The herd of cattle on hand at any one time is smaller, since the breeder selling cattle as yearlings no longer has steers 2 or 3 years old on his farm. The surplus feed and pasture which becomes available when the cattle are sold before two years of age may be used for maintaining a larger breeding herd, and this provides for the production of a large number of calves. By feeding calves as baby beef, the money invested can be turned over in 18 months or less.

Open heifers when finished as baby beef at 900 to 950 pounds sell as well as steers. As a general rule it is better to dispose of them at such weights, altho frequently well-finished heifers weighing up to 1,050 lbs. are not discriminated against. When they are over 2 years of age, however, they seldom sell as well as steers, because heifers and cows carry a great deal of bunched internal fat, which makes them less desirable on the market.

Well-finished beeves when fattened for market under two years of age offer greater choice in the matter of selecting the date of marketing. The average consumer prefers the size and quality of the cuts which are obtained from the carcass of a well-bred highly finished yearling. In addition to high quality, thickness in steaks and other cuts of beef is desired by the consumer, and these can be produced more economically in the well-matured yearling than in any other class of beef animal.

Markets are paying a premium for this type of beef, and the market for baby beef in recent years has been more stable than for any other class of cattle.

FEED AND CARE OF EWES

A month before lambing, give breeding ewes a limited amount of concentrated feed, up to one-half pound a head daily, with good roughage. With clover or alfalfa hay a considerable part of the concentrates may be corn, barley or oats. Mix with these such feeds as wheat bran, brewers' dried grains and linseed meal.

The best roughages for ewes are the legume hays, all of which are palatable and prevent constipation, a serious danger to the ewe. Other useful roughages are bright corn stover, oat hay and oat straw. Timothy hay is too constipating. One to two pounds corn silage or chopped roots per head daily will keep the ewes thrifty. Too much succulent feed may produce weak lambs. Exercise for the ewes is essential.

To prevent udder troubles, give but little grain for two or three days after lambing, and increase it gradually with the lamb's demand for milk. With good roughage not over two pounds of concentrates for each ewe is necessary. Legume hay and succulent feeds are essential at this time, and more roots or silage may be safely fed than before lambing.

The shepherd should be close at hand to assist the ewes and any weak lambs. It is wise to provide lambing pens for the ewes and their new-born lambs, where they may remain for a couple days to become accustomed to each other, and until the lambs are strong to care for themselves among the flock.—F. L. Bentley, Penna. State College.

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Spring Drive in the House

Papering Your Own Room---By A. J. Bradley

To the uninitiated the work of the skilled paper-hanger seems to present difficulties, but I have seen amateurs do a job that would be a credit to those who have spent years at the trade.

The tools required are a board of sufficient width to hold the paper, and as long as can be accommodated; sawhorses or barrels on which to support the board; a brush for pasting and a wider brush for brushing the paper on the walls, and a carpenter's square to insure a straight edge in tearing the paper. A stepladder is useful for side walls, but a platform is best to stand on for doing the ceiling.

One can make the following paste at home: Mix wheat flour with cold water until the consistency of dough, adding for each quart of flour 1 tablespoon of powdered alum. When all lumps are stirred out, boiling water should be poured on the dough until it is a paste. It should then be cooled; if further thinning is needed, cold water should be added,

How Much Paper?

To figure on the number of pieces of wall paper required for a room, multiply the number of feet around the room by the height of the side walls in feet, including all doors, windows, etc., and divide the result by 36. This gives in round numbers how many rolls of paper are needed for the side walls. Allowance is made for windows, doors and fireplaces thus: For each door and window in the room take off half a roll; for other board spaces take off one roll for each 36 square feet of space. This allowance is based on the paper being 18 inches wide after trimming. If the paper is 22 inches wide, divide the room measurements by 44, which means that 44 square feet of wall space will be covered by this width paper. Higher-priced paper often comes 30 inches wide. If this width is to be used, divide by 50 to get the number of rolls needed.

Many people frequently put one paper on top of another, but this makes an unsatisfactory job, and is unsanitary. Remove the old paper by making it quite wet with warm water, allowing the water to soak in, then remove the old paper with a scraping knife. Old plaster will sometimes come off with it. Holes made in this way or long cracks in the walls should be filled smoothly with plaster of paris, mixed with water. It is well to brush off the walls with a broom before starting to put on fresh paper, as this removes any grit which might make lumps in the new paper. The wall should be perfectly dry before starting to paper it. (Editor's Note.—A rough old wall should be sized with the paste, or better, with a paste containing some glue. Otherwise paper does not stick well. To get ready to paper whitewashed walls, neutralize and remove the alkaline whitewash with hot strong vinegar water.)

To insure laying the paper in a straight line the best way is to paper the ceiling first. To make a line, color a piece of string with chalk; fasten one end of it at the angle of the wall and ceiling, about 15 inches out from the side wall. Draw the other end to the other side of the room and fasten at the same distance out, making the string taut. Then snap it up on the ceiling, and you will have a colored line to go by.

To make a straight start of the side walls, hold a string with a weight tied to it up in the angle. If this shows unevenness—and most old farm-house walls are uneven—make a color line the same as for the ceiling.

When cutting ceiling paper allow 6 inches for overlap onto the side wall. Be sure to allow about 3 or 4 inches on the side wall for extension under the border or the drop ceiling This is to make sure of a good joining.

In old houses, where the floor is uneven, it is best to allow several inches for the walls' downhill tendency The surplus paper is not hard to tear off, but it is almost impossible to make a good job if a piece is to be added When the paper is cut, apply the paste to each length as needed, being sure that the edges have plenty of paste. Fold the ends over until they meet in the center, paste surfaces together, and continue to fold until a size convenient to carry is secured.

In homes that were built in the low-ceiling times, and they include most farm-houses in eastern Pennsylvania, striped rather than figured paper should be used, as it adds to the apparent height of the rooms.

Who Wants a Farm Hand?

REMEDIES FOR DISORDER

The Stray Shelf.—Let me recommend to the mother of that disorderly household the "stray shelf" remedy. A mother who found that it took a great deal of her time, needed for other things, to "pick up" after her family, had a wide shelf placed in a certain closet on which to stow away all stray articles. She did not always put them there herself, for the children soon began to think it great sport to "catch" papa or uncle and one another, and they grew more and more careful to make sure they were not caught themselves. Whenever inquiry was made for anything, "I think you will find it on the stray shelf" was the answer. The deposits grew less and less frequent, until finally it became a rare thing to find any article carelessly left about the house I wish all who need to do so would try this queer and simple remedy, and let us know the result.

Saving Rubbish.—One thing which conduces to disorder in the home is the habit which many housekee have of "saving" every little t because it "may possibly be of sometime". For example, a rib drum is saved to make a ma scratcher, but the time to mak never comes; a broken saucer graceful shape, "too pretty to th away", is saved to be glued, pain touched up with bronzing, and as a card-receiver, but the tim still lacking; cracked lamp-glo "which may do a little more servi tin boxes, especially small ones, w "may be nice to hold something so time"; leaky basins or sauce-p old straw hats, old shoes and broken furniture which can never fixed again for use, and hundreds other articles too numerous to m tion, which are stowed in nooks corners. My advice is give all th things away which can be made of by any who are needier than y sell your bottles to the first ped that comes along, your rags left f making carpet-rags, old rubbers shoes to another, your tin boxes cans to a third and so on, until your rubbish is gone; then bundle all the stuff that nobody will t and make a bonfire of it. And d harbor a lot of filled up barr standing around in the cellar or b yard until you are tired looking them. Thus you will find it ea to keep a neat house and yard garden.—Maggie Cromlich, Cumb land Co., Pa.

OLD FLOORS IN OLD HOUSES

Mothers and housekeepers, let not lose sight of the fact that one the most important forms of cons vation is that which conserves strength and health. One good w to do this is to have floors that quire the least care. Which is best floor finish and the best fl covering for each room? What we do with the old floors which v many of us have in our very houses? In early days little thoug was given to the kind of wood or t width of boards for the floors b cause it was a foregone conclusi that they would always be cover with some kind of a carpet. Now are learning to want these floors u covered because we are finding th they are thus not only more sa tary, but are much more easily tak care of. Our all-over carpets h been taken up and made into squares, rugs or strips.

And the old corn brooms are ing supplanted more and more carpet sweepers and vacuum clea ers, which corral the dust and not raise it in clouds to settle ba on the furniture or to be breath into the sweeper's lungs, as with t corn brooms.

Suppose your floor is of old, wid rough planks or boards, never we planed, and with wide cracks b tween them, as in most old floors. want to make those floors hospit clean, so we must first dig the di out from the cracks, then have som one plane off the splinters and smoo down the rough, uneven surfac Then fill up the cracks with som good commercial crack filler, or el with white lead made into a pas with turpentine; a putty knife handy to do this crack filling. No we are ready for the floor finis The market is well supplied wi good stains, floor paints and va nishes, wax finishes and oil finishe A good and inexpensive oil finish made thus: One part linseed oil, o part paraffin, and one part turpe tine; apply while hot with a broo or floor brush. This is so durable that it is frequently used for kitchen floors.—Mary Burnite, Md.

HOUSE CLEANING FOOLISHNESS

The word "conservation" gets worn threadbare in these days, but how seldom we see it applied to other than material things—meat, wheat, beans, etc! Do we not in our zeal fail to conserve our ability, go beyond our strength, and recklessly waste our most precious asset—health?

I used to do all my house-cleaning because I thought it extravagant to hire it done, altho I invariably paid the doctor more for patching me up afterwards than it would have cost to hire someone to do the heavy work. In these strenuous days we can illy afford to pay a $10-doctor bill, which a $5-work bill would have prevented. I am learning that I have no moral right to deprive my little girl of a well mother, or to waste the family income, simply to gratify so foolish a notion. It is much more efficient in my own case to sew or do light work for other people and then hire my own heavy work done, and thereby present to my family a cheerful mother, "clothed and in her right mind". We farm women are too likely to reason that whatever we can gain at no cost other than physical wear and tear is clear profit. Let us now, therefore, try to conserve our health and strength, and see if it does not pay in dollars and cents as well as in greater comfort for the entire household.—Mrs E. M. A., Chautauqua Co., N Y.

A CORRECTION

In February 23rd issue, page 20, in the "Maple Cookies" recipe the direction "use the above recipe" refers to the maple sugar cake recipe given on page 20, February 9th issue.

MATERIALS FOR WAR RELIEF CLOTHES

Each of us should emphasize the need for elimination of the frills of life not needful for efficient service at this time. Individual personal sacrifice, industry, economy and thrift have got to be the rule all over this broad land if we are ever to come out of this great struggle.

When we know that Poland, Armenia and all starving Russia and all the other allied nations are in suffering need of our wheat, that the French can have but ½ ounce of sugar per day shall we go on using four ounces of sugar per day, as usual, and wheat as we please, because it suits our taste and convenience? Shall we let our attics and storerooms continue to be cluttered with quantities of old muslins, soft underwear and the numerous kinds of other soft washable materials that could be washed, ironed, rolled into neat packages and handed to our local Red Cross chapters or sent free by parcel post, to the National Surgical Dressings Committee, 299 Fifth Avenue, New York City.

Hundreds of thousands of homeless refugees have had every worldly possession stripped from them and their children Shall we fail to hunt out every cast-off garment that has any merit of warmth or durability, every half-worn shoe, warm cap or mitten, any new material that can be made into any garment for a little child, and send them to the Stage Women's War Relief, 366 Fifth Avenue, New York City? Also if we have any old kid gloves or leather of any kind such as cushion tops, table covers, soft upholstery leather or other soft scraps, let us send them also to the Stage Women's War Relief, to be made up into vests for the French soldiers who are not so warmly clothed as our boys are.

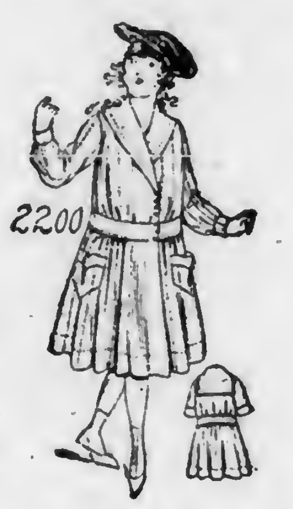
Every man, woman or child in this country can do something in this line to help in the world's great need. Our homes should be cleared of all things of this sort not needed by our families.—Mrs. M. G. Feint, Tompkins, Co., N. Y.

A tablespoonful of butter wasted each day in every home in the United States is said to amount to 115,000,000 pounds a year, the output of half a million cows. Use butter; it is a growth-begetting food, but don't waste it.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S Third Street, Philadelphia, Pa.

2200 — For School or General Wear.—The fronts are lapped at the closing, and the neck is finished with a deep collar, forming revers over the front. Pattern is in 5 sizes 4, 6, 8, 10 and 12 years. It requires 3⅝ yards of 36-inch material for an 8-year size Price, 10 cents.



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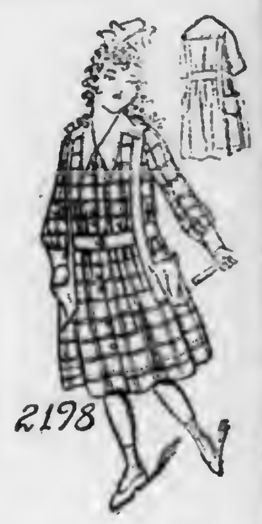
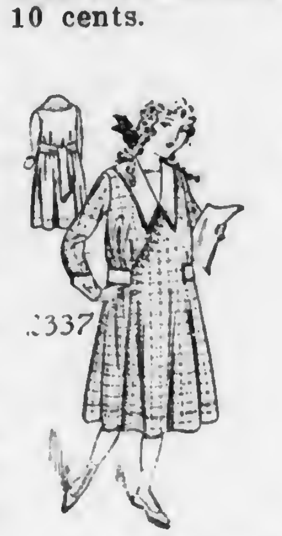


2198

2198.—Jaunty Dress — Nice for plaid or checked gingham, with chambray or linene for pockets, collar and cuffs. The belt is slipped thru openings in the pocket straps. Pattern is cut in 5 sizes: 6, 8. 10, 12 and 14 years. Size 10 will require 4¾ yards of 36-inch material. Price, 10 cents.

2337.—School Dress.—The fronts are reversible and overlap at the center, with the belt sections or sash ends joined to the front edges and holding the fulness over sides and back. Pattern is cut in 4 sizes: 8, 10, 12 and 14 years. Size 12 requires 4½ yards of 36-inch material, with 2 strips 36 inches long and 5 inches wide, for the sash ends. Price, 10 cents.



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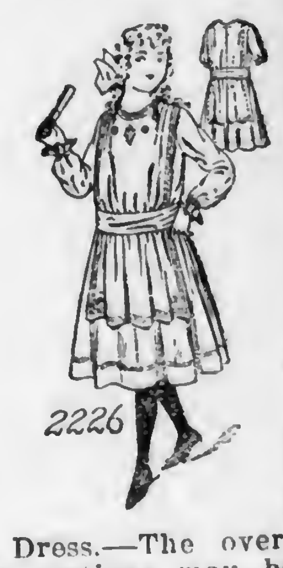


2226

2226.—Dainty Dress.—The overblouse or jumper portions may be omitted The sleeve may be in wrist or elbow length. Pattern is cut in 4 sizes: 8, 10, 12 and 14 years. It requires 4½ yards of 44-inch material for a 10-year size. Price, 10 cents.

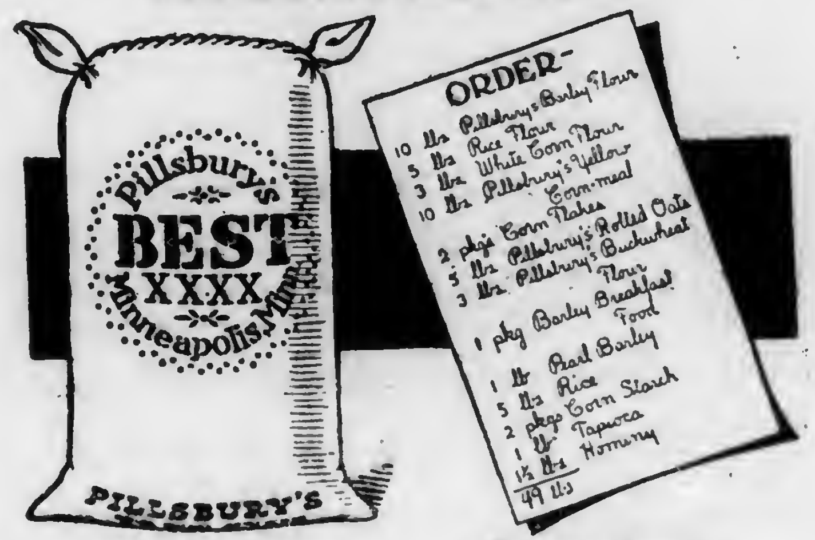
How to buy FLOUR half-and-half

It is developing that enormous waste of wheat-flour substitutes is possible and probable if the Substitute flours are not purchased in the proper proportion and assortment.

Buy Correctly

Adopt the following suggestion and you will not go far astray. You can even cut out the memoranda order and take it to your grocer.

An Ideal Flour Order



Pillsbury's BEST XXXX Minneapolis, Minn.
PILLSBURY'S
ORDER-
10 lbs Pillsbury's Barley Flour
5 lbs Rice Flour
3 lbs White Corn Flour
10 lbs Pillsbury's Yellow Corn-meal
2 pkgs Corn Flakes
5 lbs Pillsbury's Rolled Oats
3 lbs Pillsbury's Buckwheat Flour
1 pkg Barley Breakfast Food
1 lb Pearl Barley
5 lbs Rice
2 pkgs Corn Starch
1 lb Tapioca
1½ lbs Hominy
49 lbs

A 49-lb sack of Pure Wheat Flour —Substitute flours in proper proportion

In the hands of an interested patriotic housewife no accumulation of any item of the above assortment should occur. Used in well-planned menus each of the items can be consumed in about the proportion given and no oversupply will be left to spoil or waste.

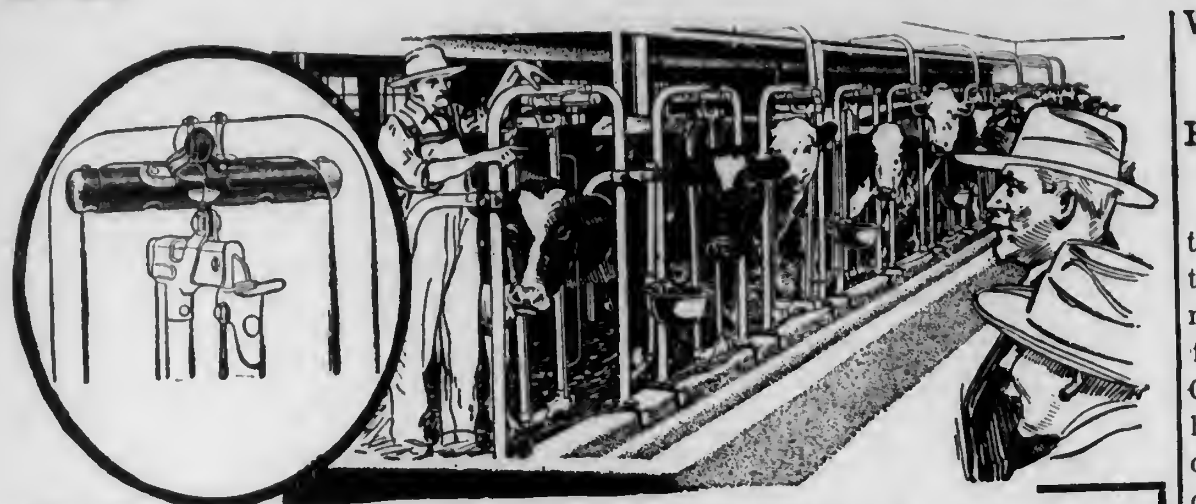
A Free Booklet

If any of these war-time wheat-flour substitutes are new to you and you are not fully informed as to how to use them, send for a copy of a free booklet entitled—

Pillsbury's
40-War-Time Recipes

This book will be mailed to you free upon application. If its recipes are carefully followed, you will find you can prepare delicious dishes in good variety. These recipes will help you avoid poor results and disappointments incident thereto. They will show you that these substitutes are useable and likeable and that you should not be prejudiced against their use.

Pillsbury Flour Mills Company
Dept. F 20 Minneapolis, Minn.



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Long Cows—short cows—and all sizes between—the STAR Adjuster makes STAR Steel Stalls **instantly** fit each animal. One simple turn of a lever lengthens or shortens the cow bed to suit. And the entire operation takes no longer than it does to lock a stanchion.

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The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

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Pennsylvania Farmer, 261 S. Third St., Phila., Pa.

VOCATIONAL SCHOOLS OF AGRICULTURE

How Conducted in Atlantic Co., N. J.

In response to a conviction entertained by a number of persons interested in the development and furnishing of educational opportunities for the young people of Atlantic County, N. J., the matter of establishing Vocational Schools of Agriculture, in accordance with the terms of the law as passed by the Legislature of 1913, was presented at a meeting of the County Boards of Education in January, 1914, by the Assistant Commissioner of Education and the County Superintendent of Schools. The matter was favorably received and the Judge of the Court of Common Pleas was asked, if he saw fit, to appoint a Vocational Board of Education for the County, which he did in June, 1914, selecting five prominent county men, and a banker to act as custodian of funds. The ruling was such that if the county should raise a sum of money for this purpose the state would furnish an equal sum. The schools began operation with $10,000 to meet all expenses.

A director was first chosen by the Board and later in the fall of 1914 four college bred men who had farm experience were chosen as Agricultural Instrutors to take charge of a school in each of four distinct sections in the county Later, the need for a teacher of home economics was felt and a teacher was selected for this position in October, 1915.

The work in the class room is conducted in the winter for a period of 18 to 20 weeks, depending on seasonal conditions. This work is naturally varied to suit the needs of the attendants. The full-time classes of 15 hours per week, the part-time classes of from 2 to 6 hours per week in the afternoon or evening, lecture classes for school pupils who can give but a little time each week are all conducted each winter.

The work in the classroom is developed around a project or subject that is of particular and vital interest to the farmer; it may be peach growing, or sweet potato growing, or poultry, or any such subject. In addition to this a general course is given to full-time men so as to give them in four years a well-rounded course in general agriculture which will be applied to conditions right at home. Among other subjects the following are studied: Soils, fertilizers, general crops, shop work, business arithmetic, business forms, farm machinery, live stock work, value and function of rural organizations and farm management.

During the winter season there are also held a series of evening lectures for a week in each of the important agricultural centers of the county, these meeting called Farmers' Weeks. There are also maintained short courses of six weeks in fruit growing or vegetable growing made up of three units of two weeks each for the benefit of those who cannot attend the whole winter.

Each student is asked to take a project which is to be studied in the school during the winter. In the summer the instructor supervises the working out on the farm of the principles learned in the school. In this way the student has the advantage of close personal touch with the instructor.

The teacher of home economics conducts 6-, 8- or 10-week classes in different centers of the county for women and girls who desire instruction in sewing and cooking. During the summer months her activities are largely directed toward the work of canning and preserving. Individual help is given and clubs are formed for this work.

The work of the staff is not confined merely to the winter teaching or to the students alone. Wherever possible, assistance of any kind is given to all reasonable requests from farmers. By this means much has been done to establish better systems of spray campaigns, better grading and marketing of produce, the introduction of new crops, the introduction of pure bred live stock, the introduction of new fertilizer materials, and many others. The farmers as a whole now buy fertilizers more intelligently and have learned how to combat their insect and disease troubles.

The staff has also been active in the work of stamping out hog cholera. There have been approximately 1300 hogs inoculated by members of the staff to prevent this disease. As a result, hog raising has been put on a sure foundation and considerable pure bred stock has been introduced as a result.

The staff has also had charge of the conducting of a one-day Agricultural Field Day and a three-day County Fair. It has also, with the help of influential parties in Atlantic City, established a Producers' Community Market where prices and goods are right and where the housewives and hotelmen can buy, being assured of courteous and honest treatment.

Another activity is that of the publishing of a monthly Vocational School Bulletin of timely topics and items of prime importance to the agricultural population of the county. This bulletin has a mailing list of 500 and is sent free to those farmers of the county who desire it.

It can be readily seen that the activities of the staff are varied and many. It is the policy of the Board to have the members of the staff give all the service they can to the farmers of the county and the results are being reflected in the fact that the fourth annual sessions of the schools are now being conducted and anyone familiar with the county can note marked improvements in the methods of farming in the last three and one-half years.—McD.

FARMERS' CLUB MEETING

The Ninth District Farmers' Club held its February meeting at the home of Mr. and Mrs. H. L. Kirk. The meeting was well attended and the program was of unusual interest. Two representatives were appointed to go to Washington to attend the Federal Board of Farm Organizations.

Prof. Metzger, of the Maryland College of Agriculture, was present and gave a talk on the selection and testing of seed corn. He emphasized the necessity of taking unusual care to test all seed corn this year as it is found that much of last year's crop will not germinate.

Mr. Knode, the new county agent, was present and invited the members to make use of him. As this was a corn meeting, many of the members brought samples of their corn which was judged by Prof. Metzger. The result was as follows: T. K. McDowell, first; H. L. Kirk. second, and C. H. Morris, third.

The meeting adjourned to meet on March 6.—Mrs. E. R. B.

Among The Granges

Chester and Delaware Counties.—Pomona Grange No. 3 met in February in the Parkesburg Opera House where they were the guests of Sadsbury and Highland Granges. The morning session was opened by the master, Rendall P. Dutton.

About three hundred enjoyed the hospitality of the entertaining granges. At the afternoon session the reports of standing and special committees were heard, as well as the reports from subordinate granges. All reports were very encouraging, and prove that the grange is growing stronger and more influential.

The meeting was then turned over to the Lecturer, Miss Ruth Price. Mrs. George Brown rendered a solo. H. J. Irey, Esq., of Philadelphia, made an address on Conservation of Food.

Mr. Morris T. Phillips, of Highland Grange, then gave an address on "What Most Affects the Farmer Today and His Duty in the Present Crisis." Mr. Phillips is the farmers' representative from this state upon the Federal Food Commission and War Board. He said in part: "The attention of the world is just now fixed upon the farmers of the United States and it is our place to stand firm. We should tell the government clearly what we want and what our needs are. The farmer needs to change his attitude of mind, and if we buckle down there is not a blessed farmer among us who can not do better upon his farm."

He said eggs should be sold at a high price for storage purposes this summer, which will insure plenty of eggs next winter, but if sold cheap we shall have none. The farmer knows best when to sell his hens and he also knows best what to do in other lines. Give him representation and he will feed you. The farmer is slow to make a move, his whole operation is an operation of faith. What we want to do is to stick to this job until we get a satisfactory result.

Dr. Joseph T. Rothrock, of Brandywine Grange, next gave a talk on "The Cause of the War and How the World Proposes to Prevent Another War". He told of the League to Enforce Peace by establishing a World Court for the arbitration of international differences and the prevention of future wars.—R. Chester Ross.

SOLVING LOCAL FARM-LABOR PROBLEMS

In one county of West Virginia last fall, when hands were not available for filling silos, seven farmers bought a silo-filling outfit co-operatively, and each of the seven helped the others—giving a force of seven men at work on each farm filling silos. Thus each farmer found that particular labor problem solved and the silos filled—by co-operation.

In a county where a great many tomatoes were raised last year, it seemed impossible to get enough hands to harvest them. The county agent and farmers who had automobiles went to the nearby towns each morning and took men, women, and children back to the farms to work during the day, returning them to their homes at night. Appeals were made thru the newspapers and otherwise, and the town people volunteered gladly. Sufficient labor was secured without difficulty, and the tomato crop was saved.

Champion

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THINK of the tremendous and constantly varying pressure which the spark plugs must stand in the engines that drive the war tanks.

As it rears and plunges over trenched and shell torn ground, the load which the motor must pull is terrific or negligible in rapid succession.

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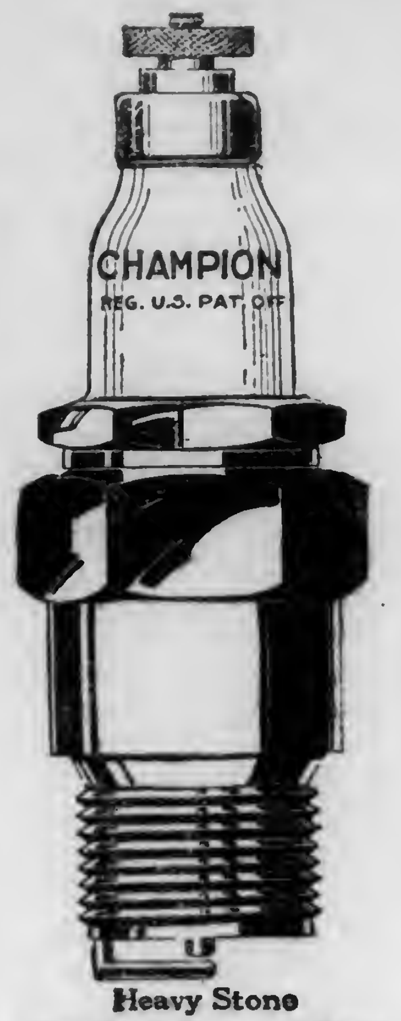
It takes over a million Champions every ten working days to supply the world-wide demand for dependability in spark plugs.

When you want to equip your motor dependably, see that the name "Champion" is on the porcelain—not merely on the box.



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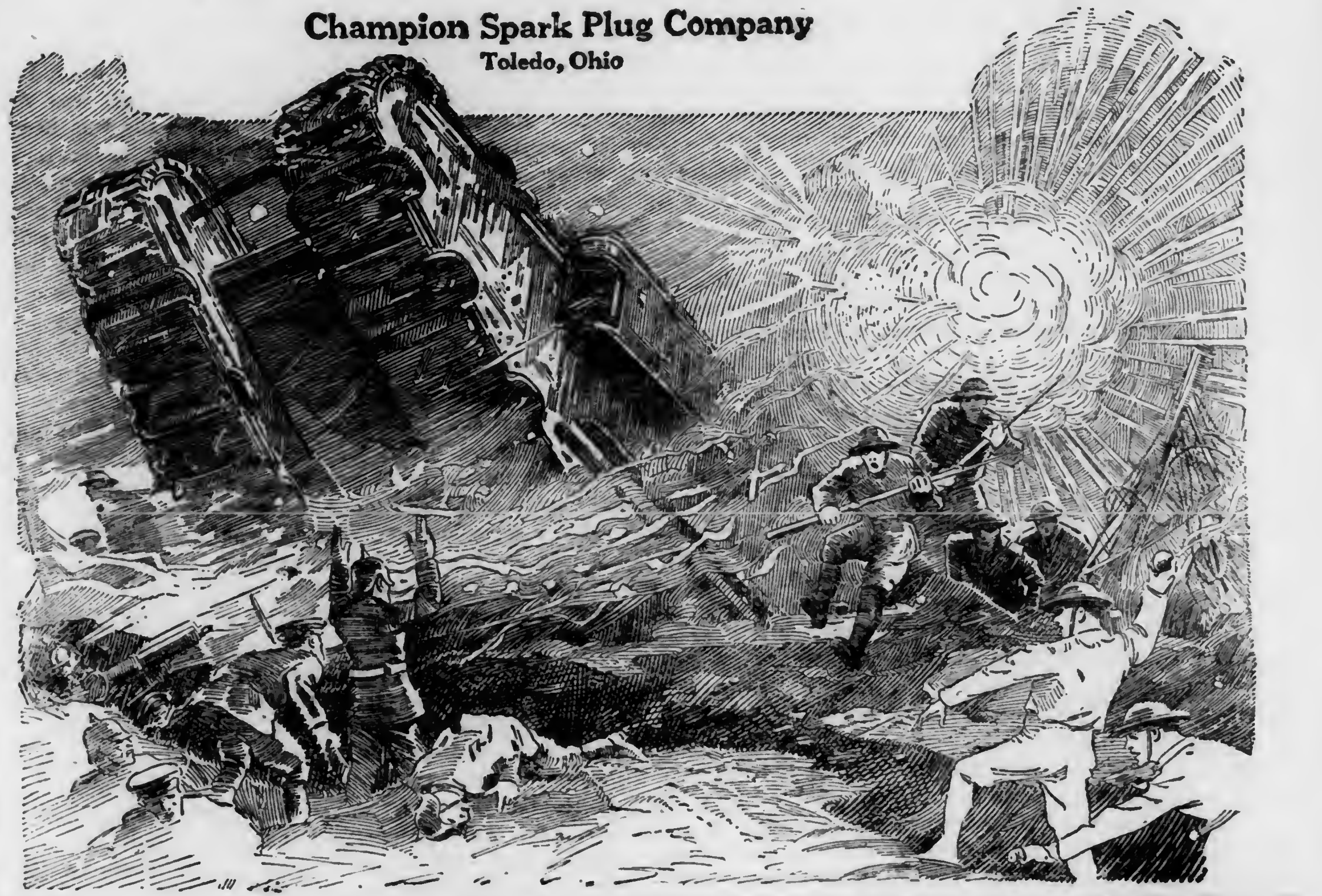

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installed, supplying you with pure running water wherever you want it at the mere turn of a faucet and protecting you against fire? Now is the time to consider just what help a system would be to you. Let us send you literature and quote a price—There is a Neptune System especially designed to take care of your problem. *Write today—Dept. 42*

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McGrath Got an Engine

ANOTHER THRILLING RAILROAD STORY

By FRANK H. SPEARMAN.

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This came about thru there being whiskers on the rails. It may not be generally understood that whiskers grow on steel rails; curious as it seems, they do. Moreover, on steel rails they are dangerous, and, at times, exceedingly dangerous.

Their culture depends on conditions. It takes a high, frosty air, one that stays out late, to make whiskers. The day's moisture, falling as the sun drops beyond the hills, is drawn into feathery, jewelled crystals of frost on the chilly steel, as a glass of ice-water beads in summer shade; and these dewy stalagmites rise in a dainty profusion, until when day peeps into the canyons the track looks like a pair of long white streamers winding up and down the levels. But beware that track. It is a very dangerous track, and its possibilities lie where Samson's lay —in the whiskers.

Aloysius McGrath was a little sweeper; but he was an aspiring one, for even a sweeper may aspire, and in point of fact most of them do aspire. Aloysius worked in the roundhouse at the head of the Wind River pass on the West End Mountains. It is an amazingly rough country; and as for grades, it takes your breath merely to look down the levels. Three percent, four percent, five percent—it is really frightful! But Aloysius was used to heavy falls; he had begun working for the company as a sweeper under Johnnie Horigan, and no engineer would have thought of running a grade to compare with Johnnie's headers.

Horigan was the first boss Aloysius ever had. Now Aloysius, if caught just right, is a very pretty name, but Johnnie Horigan could make nothing whatever of it, so he called Aloysius, Cooney, as he said, for short—Cooney McGrath—and, by the way, if you will call that McGraw, we shall be started right. As for Horigan, he may be called anything.

Johnnie was ordinarily boss sweeper. He had suffered numerous promotions—several times to wiper, and once to hostler; but his tendency to celebrate these occasions usually cost him his job, and he reverted to sweeping. If he had not been such an inoffensive, sawed-off little old nubbin he wouldn't have been tolerated on the pay rolls; but he had been with the company so long and discharged so often that foremen grew tired of trying to get rid of him, and in spite of his very regular habits, he was hanging on somewhere all the time.

When Johnnie was gone, using the word in at least two senses, Aloysius Cooney McGrath became, ipso facto, boss sweeper. It happened first one Sunday morning, just after pay day, when Johnnie applied to the foreman for permission to go to church. Permission was granted, and Johnnie started for church; but it is doubtful whether he ever found it. At all events, at the end of three weeks he turned up again at the roundhouse, considerably the worse for his attempt to locate the house of prayer —which he had tried to find only after he had been kicked out of every other place in town.

Aloysius had improved the interval by sweeping the roundhouse as it never had been swept before; and when Johnnie Horigan returned, morally disfigured, Aloysius McGrath was already promoted to be wiper over his old superior. Johnnie was in no wise envious. His only move was to turn the misfortune to account for an ulterior purpose, and he congratulated the boy, affecting that he had stayed away to let them see what stuff the young fellow was made of. This put him in a position to negotiate a small loan from his protege—a position of which he never neglected the possibilities. It was out of the question to be mad very long at Johnnie, tho one might be very often. After a time Aloysius got to firing; then he wanted an engine. But he fired many months, and there came no promotion. The trouble was, there were no new crews added to the engine service. Nobody got killed; nobody quit; nobody died. One, two, and three years without a break, and little Aloysius became a bigger Aloysius, and was still firing; he became also discouraged, for then the force was cut down and he was put back wiping.

'Never y' mind, never y' mind, Cooney," old Johnnie would say. "It'll come all right. You'll get y'r ingin' yet. Lind me a couple till pay-a-day, Cooney, will you? I'll wahrant y' y'r ingin' yet, Cooney." Which little assurance always cost Aloysius two dollars till pay day, and no end of trouble getting it back; for when he attempted collection, Johnnie took a very dark view of the lad's future, alluding vaguely to people who were hard-hearted and ungrateful to their best friends. And tho Aloysius paid slight attention to the old sweeper's vaporings, he really was in the end the means of the boy's getting his engine.

After three years of panic and hard times on the mountain division, the mines began to reopen, new spurs were laid out, construction crews were put on, and a new activity was everywhere apparent. But to fill the cup of Aloysius' woe, the new crews were all sent up from McCloud. That they were older men in the order of promotion was cold comfort—Aloysius felt crowded out. He went very blue, and the next time Johnnie applied for a loan Aloysius rebuffed him unfeelingly; this in turn depressed John.

"Never mind, never mind, Cooney. I'll not be speakin' t' Neighbor again t' set y' up. If y' like wipin', stick to ut. I'll not be troublin' Neighbor agin." Johnnie professed a great pull with the master mechanic.

But the memorable morning for Aloysius came shortly thereafter. It was one of those keen October mornings that bite so in the Hills. The construction train, Extra 240 West, had started about five o'clock from the head of the pass with a load of steel for the track layers, and stopped for a bite of breakfast at Wind River. Above the roundhouse there is a switchback. When the train pulled in, the crew got off for some hot coffee. Johnnie Horigan was around playing good fellow, and he climbed into the cab to run the train thru the switchback while the crews were at the eating house. It was irregular to leave the engine, but they did, and as for Johnnie Horigan, he was regularly irregular. There were sixteen cars of steel in the string, besides a cabooseful of laborers. The backing up the leg of the nipper was easy. After the switch was newly set, Johnnie pulled down the lower leg; and that, considering the whiskers, was too easy.

When he pulled past the eating house on the down grade, he was going so lively with his flats that he was away before the crew could get out of the lunch room. In just one minute everybody in Wind River was in trouble; the crew, because their train was disappearing down the canyon; the eating house man, because nobody paid him for his coffee; and Johnnie Horigan, because he found it impossible to stop. He had dumped the sand, he had applied the air, he had reversed the engine—by all the rules laid down in the instruction car she ought to stop. But she didn't stop, and—this was the embarrassing feature—she was headed down a hill twenty miles long, with curves to weary a boa-constrictor. John hung his head wildly over the drivers, looked back at the yelling crew, contemplated the load that was pushing him down the grade and his head began to swim. There appeared but one thing more to do; that was to make a noise; and as he neared the roundhouse he whistled like the wind. Aloysius O'Cooney McGrath, at the alarm, darted out of the house like a fox. As he reached the door he saw the construction train coming, and Johnnie Horigan in the gangway looking for a soft place to light.

The wiper chartered the situation in a mental second. The train was running away, and Horigan was leaving it to its fate. From any point of view it was a tough proposition, but tough propositions came rarely to ambitious railroad men, and Aloysius was starving for any sort of a proposition that would help him out of the waste. The laborers in the caboose, already bewildered, were craning anxiously from the windows. Horigan, opposite the roundhouse, jumped in a sprawl; the engine was shot past Aloysius; boarding was out of the question.

But on the siding stood a couple of flats, empty; and with his hair straight on centers, the little wiper ran them and mounted the nearest. The steel train was jumping. Aloysius, bunching his muscle, ran the length of the two flats for a head, and, from the far corner, threw himself across the gap, like a bat, on a load of the runaway steel. Scrambling to his feet, he motioned and yelled to the hoboes, who were pouring frantically out on the hind flat of the string, to set brakes; then he made ahead for the engine.

It was a race with the odds all wrong, for with every yard Aloysius gained, the train gained a dozen. By the time he reached the tender, breathless, and slid down the coal into the deserted cab, the train was heading into Little Horn gap, and every Italian aboard was yelling for life. Aloysius jumped into the levers, poked his head thru the window and looked at the drivers. They were in the back motion, and in front of them the sand was streaming wide open. The first thing he did was to shut it half on—the fight could not be won by wasting ammunition. Over and over again he jerked at the air. It was refusing its work. Where so many a hunted runner has turned for salvation there was none for Aloysius. He opened and closed, threw on and threw off; it was all one, and all useless. The situation was as simple as it was frightful. Even if they didn't leave the track, they were certain to smash into Number Sixteen, the up-passenger, which must meet them somewhere on the hill.

Aloysius' fingers closed slowly on the sand lever. There was nothing on earth for it but sand, merely sand; and even the wiper's was oozing with the stream that poured from the tank on the whiskered rails. He shut off a bit more, thinking of the terrific curves below, and mentally calculated—or tried to—how long his stream would last to reverse the drivers—how he could shovel coal and sand the curves at the same time—and how much slewing the Italians at the tail of the kite could stand without landing on the rocks.

The pace was giddy and worse. When his brain was whirling fastest, a man put a hand on his shoulder. Aloysius started as if Davy Jones had tapped him, and between bounces looked, scared, around. He looked into a face he didn't know from Adam's, but there was sand in the eyes that met his.

"What can I do?"

Aloysius saw the man's lips move, and, without taking his hands from the levers, bent his head to catch the words.

"What can I do?" shouted the man at his elbow.

"Give me steam—steam," cried the wiper, looking straight ahead.

It was the foreman of the steel gang from the caboose. Aloysius, thru the backs of his eyes, saw him grab the shovel and make a pass at the tender. Doing so, he nearly took a header thru the gangway, but he hung to the shovel and braced himself better.

With the next attempt he got a hovelful into the cab, but in the lelivery passed it well up Aloysius' neck. There were neither words nor grins, but just another shovelful of coal a minute after; and the track-layer, in spite of the dizzy lurching, shot it where it belonged—into tho furnace. Feeling that if one shovelful could be landed, more could, Aloysius' own steam rose. As they headed madly around the Cinnamon bend the dial began to climb in spite of the obstacles; and the wiper, considering there were two, and the steam and the sand to fight the thing out, opened his valve and dusted the whiskers on the curve with something more than a gleam of hope.

If there was confusion on the runaway train, there was terror and more below it. As the spectre flitted past Pringle station, five miles down the valley, the agent caught a glimpse of the sallow face of the wiper at the cab window, and saw the drivers whirling backward. He rushed to his key and called the Medicine Bend despatcher. With a tattoo like a drum-roll the despatcher in turn called Soda Springs, ten miles below Pringle, where Number Sixteen, the up-passenger, was then due. He rattled on with his heart in his fingers, and answer came on the instant. Then an order flashed:

To No. 16.

Take Soda Springs siding quick. Extra 240 West has lost control of the train. D1.

There never was such a bubbling at Soda Springs as that bubbling. The operator tore up the platform like a hawk in a chicken yard. Men never scattered so quick as when Number Sixteen began screaming and wheezing and backing for the clear. Above the town, Aloysius, eyes white to the sockets, shooting the curves like a meteor, watched his lessening stream of sand pour into the frost on the track. As they whipped over bridges and fills the caboose reeled like a dying top—fear froze every soul on board. To leave the track now meant a scatter that would break West End records.

When Soda Springs sighted Extra 240 West, pitching down the mountain, the steel dancing behind and Aloysius jumping before, there was a painful sensation—the sensation of good men who see a disaster they are powerless to avert. Nor did Soda Springs know how desperate the wiper's extremity had become. Not even the struggling steel foreman knew that with Soda Springs passing like the films of a cinematograph, and two more miles of down-grade ahead, the last cupful of sand was trickling from the wiper's tank. Aloysius, at that moment, wouldn't have given the odd change on a pay check for all the chances Extra 240 and he himself had left. He stuck to his levers merely because there was no particular reason for letting go. It was only a question of how a man wanted to take the rocks. Yet, with all his figuring, Aloysius had lost sight of his only salvation—maybe because it was quite out of his power to effect it himself. But in making the run up to Soda Springs Number Sixteen had already sanded the rails below.

He could feel the help the minute the tires ground into the grit. They began to smoke, and Aloysius perceived the grade was easing somewhat. Even the dazed foreman, looking back, saw an improvement in the lurch of the caboose. There was one more hair-raiser ahead—the appalling curve at the forks of the Goose. But, instead of being hurled over the elevation, they found themselves around it and on the bridge with only a vicious slew. Aloysius' hair began to lie down, and his heart to rise up. He had her checked—even the hoboes knew it—and a mile further, with the dangers past, they took new ones by dropping off the hind end.

At the second bend below the Goose, Aloysius made a stop, and began again to breathe. A box was blazing on the tender truck, and, with his handy fireman, he got down at once to doctor it. The whole thing shifted so mortally quick from danger to safety that the two never stopped to inventory their fears; they seemed to have vanished with the frost that lured them to destruction. They jumped together into the cab; and whistling at the laborers strung back along the right of way Extra 240 West began backing pluckily up hill to Soda Springs. The first man who approached the cab as they slowed down for the platform—in fact, people rather stood back for him—was Bucks, Superintendent of the Division; his car come in attached to Number Sixteen.

"How did your train get away from you?" he asked of Aloysius; there was neither speculation nor sympathy in his manner and his words were bitten with frost.

"It didn't get away from me," retorted Aloysius, who had never before in his life seen the man, and was not aware that he owed him any money. But the operator at the Springs, who knew Aloysius and the superintendent both, was standing behind the latter doing a pantomime that would shame a medicine man.

"Quick talking will do more for you than smart talking," replied the superintendent, crisply. "You'll never get a better chance while you're working for this company to explain yourself."

Aloysius himself began to think so, for the nods and winks of the operator were bewildering. He tried to speak up, but the foreman of the steel gang put in: "See here, sport," he snapped, irreverently, at the angry official, "why don't you cool your hat before you jump a fellow like that?"

"What business is it of yours how I jump a fellow?" returned the superintendent, sharply, "who are you?"

"I'm only foreman of this steel gang, my friend; and I don't take back talk from anybody."

"In that case," responded Bucks, with velvet sarcasm, "perhaps you will explain things. I'm only superintendent of this division; but its customary to inquire into matters of this kind."

Aloysius at the words nearly sank to the platform; but the master of the hoboes, who had all the facts, went at the big man as if he had been one of the bang, and did not falter until he had covered the perspiring wiper with glory.

"What's the reason the air wouldn't work?" asked the superintendent, turning, without comment, when the track-layer had finished, to Aloysius.

"I haven't had time to find out, sir."

"Find out and report to me. What's your name?"

"McGrath."

"McGraw, eh? Well, McGraw, look close into the air. There may be something in it for you. You did the firing?" he added, turning short again on the unabashed steel foreman.

"What there was done."

"I'll do a little now myself. I'll fire you right here and now for impertinence."

"I supopse you're the boss," responded the man of ties, imperturbably. "When I made the crack, I'd made it harder if I had known who you were."

"You know now, don't you?"

"I guess so."

"Very good," said Bucks, in his mildest tones. "If you will report to me at Medicine Bend this afternoon, I'll see whether we can't find something better for your manners than cursing hoboes. You can ride down in my car, sport. What do you say? That will save you transportation."

It brought a yell from the railroad men crowding around, for that was Bucks' way of doing things; and the men liked Bucks and his way. The ex-captain of the dagoes tried to look cool, but in point of fact went very sheepish at his honors.

Followed by a mob, eager to see the finish, Superintendent Bucks made his way up the track along the construction train to where Aloysius and the engineer of Number Sixteen were examining the air. They found it frozen between the first and the second car. Bucks heard it all—heard the whole story. Then he turned to his clerk.

"Discharge both crews of Extra 240. Fire Johnnie Horigan."

"Yes, sir."

"McGrath, run your train back to Wind River behind us. We'll scare up a conductor here somewhere; if we can't, I'll be your conductor. Make your report to Medicine Bend," Bucks added, speaking to the operator; and without further words walked back to his car.

As he turned away, the engineer of Number Sixteen slapped Aloysius on the back:

"Kid, why the blazes didn't you thank him?"

"Who?"

"Bucks."

"What for?"

"What for? Jiminey Christmas! What for? Didn't he just make you an engineer? Didn't he just say, 'Run your train back behind us to Wind River'?"

"My train?"

"Sure, your train. Do you think Bucks ever says a thing like that without meaning it? You bet not."

Bucks' clerk, too, was a little uncertain about the promotion. "I suppose he's competent to run the train back, isn't he?" he asked of Bucks, suggestively.

Bucks was scrawling a message.

"A man that could hold a train from Wind River here on whiskers, with nothing but a tankful of sand and a hobo fireman, wouldn't be likely to fall off the right of way running back," he returned dryly. "He's been firing for years, hasn't he? We haven't got half enough men like McGraw. Tell Neighbor to give him an engine."

THE END

Uncle Amos says: "While we talk about this bein' a democratic-republic, still we've got a King an' his name is CORN. He an' his consort, wheat, makes this a mighty good country to live in an' so long as subjects do their duty they need not fear about havin' something to eat. His government is the kind they call a 'benevolent despotism' because while he is very exactin' about good seed, good soil, good cultivation and plenty of heat, he dispenses life, joy an' riches to his loyal subjects."

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Mother's Old Chair

Louise White Watson

The shadows were beginning to lengthen one afternoon in late September. The houses in the little village, boasting of but one main street, were few and far between and had all been built facing an undulating meadow.

To many, the spot would have been a dreary outlook in life's passing, but to the little old woman, sitting on the vine-shaded porch of one of the prettiest of the houses, it had meant home to her thruout the many years that had waited at her threshold.

Here her girlhood days had laughed thru the sunlight; had skipped thru the shadows and danced life's holidays. As a bride, a mother, a widow, the old place had listened, thrilled and sorrowed with her.

Now, as an old woman, she was sitting in an old-fashioned rocking-chair with her feet resting on an equally old-fashioned stool. Her wrinkled hands lay folded in her lap and her head seemed to snuggle cosily into the padded back of the old rocker with its quiet calico cover. A shawl had been thrown around her shoulders but it had slipped down, revealing the frail form of the waiting pilgrim, for today her home was to be broken up and she was to take up her residence with her married daughter, Mrs. Comfort, who lived in one of the prettiest homes on the heights.

A moving-van, filled with old-fashioned furniture, stood in front of the cottage. The driver waited, standing patiently near his horses and now and then glancing furtively at the little old woman, so pathetically waiting for the great change in her life.

He had known "Auntie," as he fondly called her, ever since he was a little boy and had joyously received her cookies and other little helps that filled his heart with bubbling joy.

"A plagued shame!" he muttered, rubbing old Bill's nose. "She's no more set on wanting to keep that little bit of old stuff—just that old rocker and footstool — than her daughter is on having them all carted off and sold!"

Once he thought he saw her beckon to him. Going casually up the walk, that he might not attract the attention of the busy woman within who was putting the finishing touches to the day's upheaval, he stood near enough to hear the little woman's agonized whisper:

"Gus, I can't let these two go! You loaded in all the rest and I never made a murmur, but these two are all I will have left of my very own. It won't be long at the best, Gus, before I'll have no need of them, and then," but her voice choked and Gus hurriedly broke in: "Don't worry any more about them, Auntie, there'll be a way out, I know," consolingly.

"Yes, Gus," she nodded thru her tears. "I always believe the clouds will shift somehow or other." Then smiling reminiscently, "Mother used to tell us every trouble was just the forerunner of a rainbow with its pot of gold at the foot of it."

Her voice had broken again but Gus heard her whisper, "I'm holding hard to His promises," then turning her face to him, her tired eyes filled with tears, she said apologetically, "I'm not stubborn, Gus, I'm just hungering for them!"

It was growing dusk. As Gus passed down thru the yard to his team, a happy thought struck him. Glancing at his watch he knew John Comfort had reached his home and, no doubt, was wondering at the prolonged absence of his wife. "No time like the present," he exclaimed to himself, and started off for Mr. Comfort's home, knowing if any one could assist in finding the solution it would be the big-hearted son-in-law of the worried little woman. "I'll just run across, and if he is home, I'll fetch him back with me."

Mrs. Comfort, coming out of the cottage, stood quietly by the old rocker. "Mother, won't you help me?" she questioned tenderly. "You know you should not live here all alone, and you also know the furniture must be sold Why don't you listen to reason, dear? You've sat out here nearly all day and with but very little to eat You are worrying yourself and me sick. See, it is almost dark and you are running a great risk of catching cold." Lovingly she drew the shawl up around her mother. Stooping to make it secure this time, she gazed pleadingly into the time-worn face of the little woman.

"We're not fair to Gus, Mother. He wants to go home. If I could make you see, dear, how these old things will look among all the pretty furniture I have placed in your room, I know you would never give them another thought. Come, Mother, let's go home."

The frail little woman leaned eagerly forward as tho to make another request, but her daughter hurriedly interrupted:

"Now, Mother dear, don't begin all over again. I don't want to dictate against your wishes, but these old things are just as liable to bring up sad memories as they are to cause you to live with pleasant ones. Once they are out of your sight you will be surprised how quickly they are forgotten. These," touching the back of the old rocker and glancing unsentimentally at the worn footstool, "will shabby your whole room."

Her mother's despairing eyes were fixed on the rolling meadow opposite, where the frogs for so many years had proclaimed the glad coming of spring, and where the pasturing cows had turned appreciative eyes toward her as she occasionally fed them big bunches of carrots. Her lips moved as if in prayer.

Mrs. Comfort, baffled, stood gazing off into the gathering darkness. The quiet and the hour seemed to give the little mother strength for one last appeal. Looking pleadingly into her daughter's face, one withered hand in loving touch on an arm of the old rocker, the other hand feebly extended, she almost whispered:

"Daughter, just let me keep these two! All the rest you may take away and sell, but these—oh, daughter, your father died in this very chair. I knelt at his feet on the old footstool, holding his hands in mine. He said he could go into the shadows easier if he felt me near him. And then—when the great loneliness settled down on the heart until it seemed at times as tho I couldn't breathe —I would sit in this old chair until the load had lifted and I could again say: 'Not my will but Thine, oh, Lord!' I can't begin all over again. Just let me keep this one touch of the old life. It means so much to me and it won't be for long."

"But, Mother," then hearing approaching footsteps, she turned. "There is some one coming up the path with Gus. It looks like John. It is John! And I did not want him to know how persistently you are holding out on this trifling matter, but I'm too worn-out now to care!"

John Comfort, smiling happily, stooped and tenderly kissed the trembling little mother. Then, quietly taking his wife in his arms, he held her there until the tense nerves had relaxed, and he heard her saying thru her sobs: "Oh, John, I can't get Mother to budge."

Wisely refraining from any comments, John Comfort was soon master of the difficult situation. Calling heartily to Gus at the gate, he said: "Come up here, Gus, will you, and get Mother's chair. This old footstool must go, too. We haven't any in our new home, little Mother, that can rest a tired back and wearied feet as these will do. Why, Mother, you've sat so long in this old rocker, you wouldn't be Mother, once let you get loose in one of these up-to-date models."

The old woman's face illumined. Gazing timidly at her daughter, she showed an uncertainty as to how John's kindness to her would be received.

Mrs. Comfort had intercepted the great wave of tender joy that passed from her mother to John. But when this was quickly followed by an overshadowing of trembling doubt, the daughter's heart was deeply touched. That timid glance of her mother's had broken down all barriers. No further arguments were necessary. Going quickly to her mother's side, she knelt on the old footstool, and then the younger woman took her little mother into a close embrace.

Not a word was spoken. A flood of sympathetic vision swept Mrs. Comfort back over the years. She lived the scenes her mother had lived. She saw the little woman, kneeling on the old footstool, knowing the great blackness of despairing loneliness was settling down over her, yet bravely holding the hands of her dear one in the old chair, that he might feel her presence near as he "entered the shadows". She, too, felt the blankness of succeeding days when the great hunger for a loved one tugged feverishly at the heart. The old chair, the worn footstool needed no other advocate now to speak for their presence in the home. She pressed her cheek in love's interpreting touch to that of her mother's and remained a moment longer in silence.

Gus, standing near his horses, was deeply touched. One moment he glanced off across the distance, and then he began whistling a lively tune. This had the happy effect of breaking the tenseness, for rising quickly, Mrs. Comfort joyously exclaimed: "John is right! This old rocking-chair and this time-honored footstool belong to you, Mother, dear, now, henceforth, and forever."

John laughed with understanding joy; Gus threw his cap into the air, and the little mother raised her face to heaven, tear-stained and glory-kissed.

"Your room is to be your home," continued Mrs. Comfort. Then alert on giving happy orders, she called: "John, help Gus get this old bedstead down from the wagon, and its fat feather companion. Where did we put that box of bedclothers? We must have them. The old blue-and-white coverlets, the patch-work quilts, the dainty valances and overhanging ones to match, curtains too. Mother, I've often wondered if any one's curtains could be whiter than yours."

"Want this glass-knobbed bureau?" John called from the top of the load.

"Want it? I should say we do. And the sewing-stand that just matches it. Gus," she called gaily, "do you recall where you put that box of pictures? I remember every one of them, from childhood up. 'Washington Crossing the Delaware', 'Robert Burns and His Highland Mary', 'The Landing of the Pilgrims', —I've often wonered why they dressed the little Pilgrim in an exact counterpart of her mother Pilgrim. Good! I've found the big turkey-feather fan. Mother, we're going to have two homes in one. Won't we do a lot of visiting? You'll visit me and I'll visit you; we'll dine and we'll sup off of old dishes blue," she improvised swinging the lantern to and fro much to the amusement and the hindrance of her husband and Gus.

"Mother mine," she laughed, giving the woman an extra hug, "we younger generation think we know enough to regulate the whole universe. We're going home now, to your home and mine."

A beautiful benediction dropped softly from the mother's lips: "I was holding hard to His promises and He failed me not."

"How about the rainbow now, Auntie," laughed Gus, tucking her in for the short journey home.

"I didn't want to worry you, daughter," the little woman explained softly, "but the foolish tears would flow."

"Don't ever call them foolish tears again, Mother," returned Mrs. Comfort, repentantly. "Why, without the shower how could we have had the rainbow? The blessed rainbow," she repeated softly.

THE END

MOTHER'S LOVE

Hast thou sounded the depths of
yonder sea,
And counted the sands that under it
be?
Hast thou measured the height of
heaven above?
Then thou may'st speak of a mother's
love!

There is not a grand, inspiring
thought,
There is not a truth by wisdom
taught,
There is not a feeling pure and high,
That may not be read in a mother's
eye!

There are teachings on earth, and
sky, and air;
The heavens the glory of God declare;
But louder than voice beneath, above,
He is heard to speak thru a mother's
love.

Submitted by—
Elsie Rinehart, Culpeper Co., Va.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

ARMER AND FOOD ADMINISTRATION

There is a common saying among e Pennsylvania German people that hat is one's bread is another's eath; i.e., the gain of one is the ss of another. It is, however, an tremely difficult problem to solve ith the present Food Administraon as to who is the gainer or who the loser. The assertion has been ade that the farmer is the gainer nd the consumer the loser; others ay say that the reverse is true, and ill others that neither the producer or the consumer have seen any in as a result of the operations of e Food Administration. Up to the resent the farmer has been benetted very little if any. We all know hat the Food Administration stands etween the producer and the conmer as a bridge over which is arried the products of the farm, but e may not all know that there is mething under this bridge that is ating up the gain that belongs to nd is intended for the producer and nsumer while the Food Administraion stands helplessly by.

Let us take a glance at the price f wheat flour and its substitutes. Wheat flour sells at 6 cents a pound r a little more. Rye flour, being he cheapest recognized substitute, ells for a little more. Corn and uckwheat flour sell at 8 to 9 cents pound. Oat meal, cornstarch and other substitutes are still higher. The question arises: How long can he recognized substitutes be had at ll? How much of the corn crop of he United States is left after feeding he live stock? All these uses must eceive preferred attention. What ith the buckwheat crop? Who ould attempt to certify that this or he rye crop would hold out for any ength of time? The former is almost unprocurable already. The ame holds true with all other recognized substitutes.

The writer is anxiously awaiting he outcome of the restrictions placed upon the killing of poultry. Hundreds of small poultry farmers have a flock of chickens that does not come anywhere near paying for the feed it gets. Many of them contemplated selling their stock in order to save their hard cash and the high priced feed. They are now compelled to keep the flock, feed it at a loss until he first of May. Then they will ush their chickens to market and n a few days the market will be glutted with heavy shipments of poultry. What will the farmer receive for them?

These poultry restrictions, however, have some good in them for some one. Last fall, when every farmer wanted to dispose of his hogs when winter set in, the meat packers took a chance and down went the price of hogs. With no poultry on the market, the demand for beef and pork will increase. The doors of the storage houses will swing open and out pours the contents at a premium. The poultry farmer who had intended to cull out his flock preparatory to hatching is compelled to keep his culls and unless he has the means to accommodate them in separate quarters, must hatch eggs from chickens that are scarcely worth the name.

But, where is the source of all this turmoil? What is it that has brought about existing conditions? Can the cause solely be attributed to the war? I am certain when the cause of existing conditions is fully traced, it will lead to the threshold of the consuming public.

If the Food Conservation plan can accomplish nothing beyond the elimination of the enormous waste of precious food, we can only be very glad for its existence. It is safe to say that in some city districts enough food is wasted to feed another district of equal population, the inhabitants of which would be only too glad to have it. The butcher, the baker, the grocer, all are compelled to make daily deliveries in order that their goods may be had perfectly fresh. There is an immense amount of material for a Food Administration to work upon without constantly and incessantly bearing on the man that produces the food. It is folly to attempt to teach a farmer how to save food when he was all his lifetime compelled to save in order to make a decent living.—J. W. Miller, Lehigh Co., Pa.

TWO SUGGESTIONS FOR "UNCLE SAM"

"Uncle Sam" wants farmers to increase food products, especially meat. Also, farmers must conserve labor—make it accomplish biggest results. What will do more in these two lines than silos and farm tractors? Here is the "how"—and not cost "Uncle Sam" a cent—to make a little profit instead.

Start with an appropriation of $100,000,000 (all coming back almost "suddenly"), and then some more when he sees it "panning out". Help farmers build 100,000 silos, 100-ton capacity each. They may cost $300 each, making $30,000,000. "Uncle" borrows money at 4 percent; farmers pay him 5 percent, making 25 percent profit on the loans. Let the farmers pay the loan in five annual instalments—make it a lien on the land, and payable as a tax, with other taxes—safe as Gibraltar.

Here are 10,000,000 tons of silage yearly; ideal stock feed, worth 50 percent more than the same labor-cost of feed without the silo—say $50,000,000 "profit" for farmers, $250,000,000 in five years, to pay back the $30,000,000 borrowed from "Uncle". How many million pounds a year extra beef for hungry soldiers and industrial workers? You figure it up.

Now let "Uncle" start the other "drive" by buying 50,000 farm tractors. He can get that many at half what farmers have to pay now. At an average cost of $1,000 each it would cost $50,000,000. The tractors would do the labor and do it better than an army of 250,000 hired men. "Uncle" could sell these tractors to farmers, $100 down, each; balance in sixty monthly instalments of $15 each, plus interest at 5 percent. This would make a 25 percent profit for "Uncle". Sell the tractors only to farmers who will keep them "busy" for neighbors or selves — plowing, cultivating, harvesting, threshing, silo-filling, sawing, hauling, etc.

The entire transaction could be carried on under supervision of the Department of Agriculture, approving size, cost, kind of silos and tractors, the use to be made of them—the standing of the men—all under prescribed rules free from favoritism. Why not?

Do it—and do it quick!—John B. Alden, Somerset Co., N. J.

Note.—Writer asks why not. Here are two why nots. Farmers will see others. Corn is now so scarce that corn feeds are practically "out of reach". Forcing more corn to silage must be at the expense of the corn grain yield. The number of silos mentioned would not be a big factor, but it would be felt. As to tractors, under the supervision suggested the farmers would be paying too much for the "credit service" advanced. They would prefer to pay a little more and operate the machines to suit themselves.—The Editors.

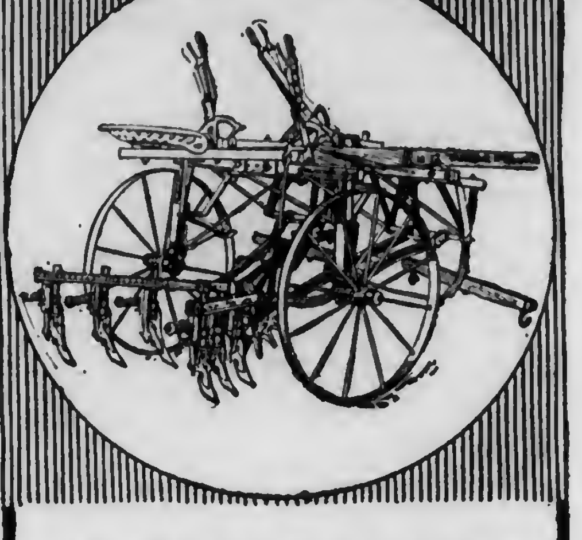
THE FARM HAND PROBLEM

Editors' Note.—We frequently receive letters from farm hands, those who depend upon working upon farms for a living, and it is very seldom that these letters are not severe in their criticism of the wages received and the conditions under which they must labor. Farmers usually listen sympathetically to recitals of complaints coming from miners, factory people, sweatshop employes, steel mills, etc. The question we wish to raise is, is the average married man who is depending upon farm labor for his living, which labor the farmer must have, receiving the wage he should have and is he provided with proper accommodations? In other words, have farmers made an honest effort to solve the farm labor question by adopting methods which would attract and keep a sufficient amount of intelligent, competent help on the job?

We would like to receive short articles of constructive criticism from both sides on this subject. We have not space to devote to criminations and fault finding of one by the other, but those who have a helpful plan to suggest whereby both farmer and farmhand will be mutually helped and satisfied are invited to submit their ideas. A late letter received contains the following:

"I was born and raised on a farm, and have always worked on a farm. I can handle any kind of machinery and care for any kind of live stock. I like farm work but find that I will have to quit as the only thing I have to show for the five years' work since I married is a debt of $100. My wife is a good cook and a good manager. We find that the raising of a pig and chickens which so many people talk about as being clear gain is a losing business. Fruit will often go to waste on the farm but the owner will see it rot before he will let you have it without pay. The garden must be worked at night or on Sunday if we have anything I have found the farmer to be as selfish and greedy as any other class of men. The conditions do not show that they have gained by their disposition to skin the hired man.

"I like the farm and would like to raise my children on the farm, but I will have to quit if they are to have any chance or any educational advantages."—A Regular Reader.



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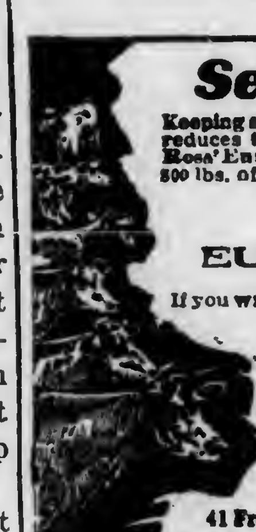

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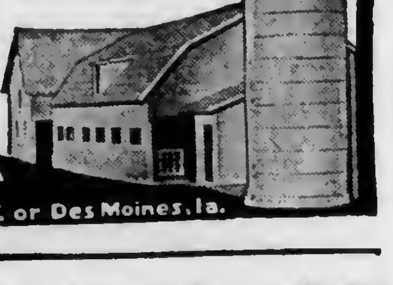

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March, 11, 1918.

With the supplies of potatoes continuing ample for the demand the potato market continues weak and the movement draggy. The nearby Pennsylvania and Jersey farmers are hauling in liberal supplies every day and these are being sold all the way from 40 to 60 cents per ⅝-bushel basket. Pennsylvania potatoes in bulk are selling generally from $1.50 to $1.60 per cwt., and New York State stock from $1.40 to $1.50. Eastern shore stock is selling from $1.75 to $2.25 for No. 1's with No. 2's mostly at $1.25. There have been no important arrivals of new potatoes since our last report, when sales were being made at $7 to $8 per barrel.

Sweet potatoes are somewhat lower than last week with best Jerseys now selling from $1.25 to $1.40 per ⅝-bushel basket. Southern stock in bushel hampers is selling from $1.50 to $1.75, with No. 2's from 75 cents to $1.

Vegetables

Dried beans are showing practically no change from last week, Marrows selling from $15 to $15.25; pea and medium, $13.50@14; red kidneys, $13.75@14 per cwt. Asparagus has made its appearance on the market and is drawing good prices. Collossal is selling at $7.50 to $10 per dozen bunches; fancy, $6 to $7; extras, $4 to $5.50. Florida green beans under the gradually increasing supply are easing off according as the supplies increase and today best stock is selling at $4.50, with poorer grades from $3 to $4. Wax beans are likewise selling all the way from $3 to $4.50, as to quality. New beets have held steady at the decline reported in these columns last week, with sales being made at $1.25 to $1.75 crate. Old beets have declined still further and are now selling at $1.50 to $2 per barrel, with supplies fully equal to all demands.

Old cabbage, while selling lower than last week, seems to be reacted and prices may go higher. Sales are now being made on fair to good stock at $20 to $30 per ton. New cabbage is quite a little higher than last week, selling mostly from $1.25 to $1.50 per hamper. Strictly fancy old carrots are bringing as high as $2, but there is very few of such here. Poor and ordinary carrots, however, are very plentiful and on such the market is slow and draggy at $1 to $1.25 per barrel. Cauliflower continues about steady at $1.25 to $1.40 per crate with poor and yellow selling from 50 to 75 cents. There has been a big improvement in the celery market, with Florida stock now selling from $1.25 to $2 per crate; California from $2 to $3 per crate; Pennsylvania, 8 to 12 cents bunch. Eggplants are in light supply and when here sell generally from $4.50 to $5 for best. Endive and escaroi have been quite plentiful and market is easier, with sales ranging all the way from $2 to $3 per barrel, as to quality. There has been a decline in the horse radish market, prices now ranging from $5 to 7 per barrel. Norfolk kale is now quite plentiful and selling from $1.25 to $1.50 per barrel.

Lettuce is very plentiful and quite a little easier. Altho some strictly fancy Florida stock sold up to $2.25 per hamper, the bulk of the supplies is selling from $1 to $1.75 per hamper with some very poor as low as 50c. California Iceberg lettuce is also much lower, best selling at $2 with poor from 75 cents to $1.25. Mushrooms are more plentiful and easier, selling from 30 to 45 cents per pound. The bottom seems to have dropped out of the onion market and the movement is slow and draggy at $1 to $1.25 per cwt. Following the big decline of $1 a barrel as reported last week, parsnips are again easier and now selling at $1.50 to $2.25 per barrel. Parsley also continues firm, New Orleans now selling at $2.50 to $3.50 a barrel and California $4 to $5 per drum. Fancy peas are very scarce and drawing high prices. Best California is selling from $10 to $12 per drum, while Floridas, which are mostly poor in quality, are selling at $2 to $5. Peppers are in light supply and firm at $4 to $5.50 a crate. Radishes are in very light supply and high reds are selling at 4 cents a bunch, and white at 5 cents. With the Norfolk season opening up, spinach is much more plentiful and lower. Norfolk stock is selling at $3 to $3.50 a barrel and Texas from $1.25 to $1.40 a bushel. Scullions from Delaware have been in very liberal supply but meeting a good demand at 50 cents to $1 per 100. Tomatoes continue in light supply and sell at high prices. Fancy 144-size ranges from $5 to $6 per crate, and choice 180-size, $4 to $5, with the Gems, or 216-size, $3 to $4. A car of Cuban tomatoes sold mostly at $4.50 per crate. Hot house tomatoes are selling from 35 to 45 cents per pound. Rutabagas are more plentiful and lower, ranging from $1.50 to $1.85 per cwt. Turnip greens, from Maryland and Delaware points, are bringing the fine prices of $1.50 to $2 per bushel hamper. Watercress is in light supply and active at 1½ to 2½ cents a bunch.

Fruits

The apple market is lower, but at the same time there are a few strictly fancy apples which are bringing full former values. For instance, some extra fancy Baldwins have sold up to $6; York Imperials, $5.50, Greening, $6. These, however, are extreme and outside prices. Supplies on hand are quite liberal. As the market did not clean up last week several cars were carried over which added to this week's offerings brought the supplies up to fully equal or more than the demand. The great majority of the apples are running from poor to fair quality and upon this line of fruit the market is weak and irregular. The range of prices is about as follows: Baldwins, $3 to $5; extra fancy $5.50 to $6. Ben Davis, $2.50 to $4.25. Black Twig, $3 to $5; Ganos, $3 to $4.25. Greenings, $3 to $6; Kings, $3 to $5.50. York Imperials, $3 to $5; Extra fancy, $5.50. Winesaps, $3.50@5.75; Hubbardsons, $3 to $5; Northern Spys, $3 to $5.50; Stayman Winesaps, $3 to $5.50; Rome Beauty, $4 to $5.50; Russett, $3 to $5; unclassified, mixed, common, $1.50 to $3.25. Receipts of box apples are also quite liberal with fruit showing a wide range in quality Range in values is about as follows: Yellow Newtown Nippins, $1.50 to $2.25; Rome Beauty, $1.50 to $2.25; Spitzenberg, $1.50 to $2.50; Winesaps, $1.75@2.50; Ben Davis, $1.25 to $1.75; Pearmain, $1.50 to $2.50; Stayman Winesap, $1.75 to $2.50.

Keiffer pears are meeting very slow sales at $2 to $2.50 per barrel. Strawberries in open crates have made their appearance on the market and at this writing are bringing from 22 to 30 cents per quart. Refrigerator strawberries are showing a very wide range in quality, best selling from 30 to 35 cents per quart, with poor and soft at 20 to 25 cents.

Poultry

Live poultry is showing practically no change from last week. The ruling of the Federal Food Administration prohibiting the sale of fowls and pullets for food purposes has stopped all business in them. Soft meated young roosters are selling from 28 to 32 cents; staggy young roosters, 27 to 28 cents; old roosters, 24 to 26 cents; ducks, 28 to 34 cents; geese, 28 to 32 cents; guineas, 75 cents to $1.10 per pair. Pigeons, 30 to 40 cents per pair.

Eggs

The egg market is still unsettled and fluctnates from day to day, advancing or declining in accordance with the supplies. Since our last report prices have been 4 cents a dozen higher than last week, but they did not hold at this advance for long. At this writing nearby firsts are selling at 36 cents; firsts, 37 cents; western extra firsts, 37 cents; western firsts, 36 cents and southern eggs, 34 to 35 cents. The indications are that for the present the market will hold about steady at these prices, fluctuating a little in either direction until the weather becomes more settled and supplies show a steady increase.

PITTSBURGH PRODUCE

Pittsburgh, Pa., March 11, 1918.

Produce.—Trading was fairly active in produce during the week and the vegetable market showed a tendency for weakening. Lower prices were quoted for white potatoes, sweet potatoes, onions, beets, cabbage, turnips, carrots, parsnips, mushrooms, celey, spinach, parsley, peas, rutabagas and horseradish. Quotations were advanced for tomatoes, lettuce, eggplant and cucumbers. Florida peppers and eggplants were scarce last week and prices were high. New shipments of kale, green asparagus and watercress were received. A good demand prevailed for apples.

Potatoes, car lots, $1.65@1.75 cwt; sweets, $1.75@2 hamper. Onions, yellow, $1.25@1.50 per 100-lb. bag; do., white, $1.75@2. Cabbage, 3@3½c lb. Parsnips, $1@1.25 bu. Rutabagas, $2.50@3 bbl. Turnips, $1@1.25 bu. Carrots, $1@1.25 bu. Lettuce, 40@45c basket. Celery, $1.50@3 crate. Apples, $5@6 bbl.; $1.75@3 box. Strawberries, 30@35c qt.

Poultry.—The poultry market was quiet and prices remained at high levels. The only shipments of poultry arriving here are frozen stocks. Hens, 34@40c lb; springers, 38@40c; broilers, 42c; roosters, 32c; ducks, 35@37c; turkeys, 40@42c.

Dairy Products.—Creamery butter quotations were advanced ½-cent a pound by wholesale dealers Saturday afternoon following the ruling of the western markets. Under the new prices prints were listed at 51 cents to 51½ cents and tub butter at 50 cents to 50½ cents. The egg market was weaker and prices were decreased 2 cents a dozen. Fresh select eggs were quoted at 37 cents to 38 cents and those at mark were offered at 36 cents to 37 cents. Prices were steady for cheese.

NEW YORK PRODUCE

New York City, March 11, 1918.

Butter is ruling quiet and easy. Cheese slow and weak. Eggs a little higher, closing firm. Dressed poultry quiet. Apples are arriving in ample supply with market tending downward. Fair demand for fancy potatoes and onions.

Butter. — Creamery, extras (92 score), per pound, 46@47½c; higher score, 47½@48c; thirds to firsts, 42½@46c; state dairy, 40@47c; ladles, 34@37c.

Cheese. — Colored specials, 25¾@26c. Daisies, 26¼@26¾c.

Eggs.—Fresh gathered extras, 39c; extra firsts, 38@38½c; nearby white, fine to fancy, 44@45c; ordinary to good, 41@44c; browns, 39@40c.

Vegetables and Greens. — Beets, per 100 bunches, $2@4. Onions, per 100-lb. bag, 75c@$2. Potatoes, Jersey, $1.25@1.81 per 100 lbs.; state and western, $1.66@1.96 per 100 lbs. Carrots, 50c@$1 per barrel.

Apples.—Winesap, $4@6; York Imperial, $3.50@4.50; Twenty Ounce, $4@5.25; King, $4@6; Baldwin, $3.50@5.50.

BALTIMORE PRODUCE

Baltimore, Md., March 11, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.50@1.75 cwt; do., New York, $1.50@1.75 cwt; Eastern Shore, $1@1.25 cwt. Sweet potatoes, yellow, $3 bbl; $1@1.10 hamper. Cabbage, danish, $50@55 ton. Celery, New York, $1.50@3.50 crate; do., native, 6@8c bunch. Lettuce $1@2 basket. Onions, yellow, $1.25@1.50 per cwt. Spinach, $2.50@3 bbl. Tomatoes, $6@7 crate.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5.50; New York State, $4@6; do., No. 2, $3@3.50. Strawberries, 20@30c qt.

Butter.—Creamery, western, extras, 50c; firsts, 48@49c; pounds prints, 51@52c; do., firsts, 49@50c. Nearby creamery, 46@47c; do., firsts, 45@46c. Dairy prints, 36@37c; do., firsts, 35@36c.

Eggs.—State, Pennsylvania and nearby, 36c; Eastern Shore and Virginia, 36c; Southern, 34@35c.

Live Poultry.—Chickens, 36@38c; do., rough, 32@33c; old roosters, 25@27c; ducks, 32@34c; turkeys, 28@32c.

Grains.—Wheat, $2.05@2.20. Corn, ear, $9@10 bbl. Oats, standard white, $1.07½; No. 3 white, $1.07. Rye, $2.80; do., in bag lots, $2.25@2.35.

Hay and Straw.—No. 1 timothy, $33; standard timothy, $32@32.50; No. 2 timothy, $31.50@32; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover, $33@34; No. 2 clover, $31@32. No. 3 do., $28@29. No. 1 straight rye straw, $24@25; No. 1 tangled, $20@21; wheat straw, $18.50 to 20; oat straw, $17@21.

Mill Feed.—Middlings, $40.50; do. white, $47.50. Winter bran, $38.50.

LANCASTER PRODUCE

Lancaster, Pa., March 11, 1918.

Potatoes came into their own today after an absence in quantities for many weeks. They, and eggs, ruled the market. Prices for the latter declined to as low as 32 cents, and potatoes sold for $1 and $1.25. Other prices remained steady and dealings were large.

Butter and Eggs.—Creamery butter, 55@58c per lb; country butter, 55@58c; fresh eggs, 32@35c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25 each; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Fruits.—Spinach, 25c ½ pk; turnips, 15@18c ½ pk; potatoes, 12@20c ½ pk; do., $1 to $1.25 per bu; sweet potatoes, 25c ½ pk; lettuce, 5@12c head; lima beans, 18c pint; apples, 20@30c ½ pk.

Miscellaneous.—Mince meat, 16c lb; cornmeal, 10c qt; ponhaus, 10@12c lb; lard, 32c lb; hominy, 6c pint.

Grain Market.—Milling wheat, $2 bu; new ear corn, $1.65; rye, $1.65; oats, 70c; No. 1 timothy hay, $27 ton; clover hay, $22; wheat straw, $16; oats straw, $10.—R.

YORK PRODUCE MARKET

York, Pa., March 11, 1918.

About the only change made in the markets was caused by the unprecedented drop of 50 percent in eggs, or a little more than 50 percent; they came down from 52 to 22 cents per dozen. They have rallied again, sellers asking 30@35 cents per dozen. But such a squeal when they raised again! The writer was on a car filled with folks returning from the Tuesday markets and they certainly gave it to the farmer for having the impudence to raise like that.

Eggs.—22@35c per dozen.

Butter.—Country, 45@48c lb; separator, 48@55c. Milk, 10c qt.

Poultry.—Dressed, 65c@$1.75 each.

Vegetables.—Potatoes, 10@12c ½ pk; $1 per bu. Lettuce, 5@15c head. Onions, 10@12c box; 25c ½ pk. Lima beans, 18c pt. Beets, 3@5c bch. Radishes, 6c bch. Soup beans, 15@18c pt. Celery, 5@10c stalk. Turnips, 20@25c ½ pk. Corn meal, 10@12c qt.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c lb; backbone, 24@28c lb; ribs, 32c lb; tenderloin, 45c lb; steak, 34@38c lb; pudding, 24@28c lb; cured meat, 40@42c lb; lard, 32c lb.

Fruit.—Apples, 10@40c ½ pk.

Wholesale Grain Market.—Wheat, $2.10@2.15, corn, $1.72; oats, 75c, rye, $1.70; bran, $42 per ton; middlings, $50@57.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 90c; rye, $1.85 cwt; middlings, $2.65.—W.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 11, 1918.

Beef Cattle.—Steers and cows were in fair request and steady under moderate offerings. Calves were steadily held, but demand was only moderate.

Steers, choice, $12.75@13.75, extra, higher; fair to good, $11@12.50; bulls, $8@10.50; cows, fat per lb., choice, 8@9½c; fair to good, per lb., 7@8c; bologna cattle, 5½@7c; calves, extra choice, $17@17.50; fair to good, $15@16; common, $12@14; Tennessee and southern, $8@15.

Sheep and Lambs. — Offerings of sheep were only moderate and prices were well maintained, but trade was quiet. Lambs of fine quality were scarce and slightly higher; but medium qualities were quiet and without quotable change.

Sheep.—Wethers, extra, $14@14.50; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $12@13. Lambs.—Choice, $17.75@18.25; do., medium, $16.50@17; inferior, $14.50@15.50.

Hogs.—Demand was good and the market ruled firm and higher under light offerings. Receipts at western points were light and advices from there were strong. Quotations for best western, $20@20.50.

City Dressed Stock.—Steers, heifers and cows sold slowly, with moderate but ample offerings at former rates. Lambs were in fair request and a shade firmer, with supplies well under control. Other descriptions showed no quotable change.

Steers, 16@21c; heifers, 15@19c; cows, 12@18c; calves, 23@24½c; southern and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 25@27c; extra, 30c; hogs, 25c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 11, 1918.

Cattle.—The supply on sale was 60 loads compared with 70 loads the week before. The market ruled steady to strong on light and tidy fat cattle while the medium and heavy grades were slow at barely steady prices. Heifers were in fair supply and the market ruled steady. Cows were in liberal supply, and the market ruled lower on all grades, especially bolognas and cutters. Bulls sold steady on all grades. Best fresh cows rued steady, but others slow and not wanted. Today's supply was 55 loads. Owing to the light supply, the market ruled active and strong on all grades of steers at prices steady with last week.

Good to choice	$12.75@13.25
Good, 1300-1400 lb.	12.25@13.75
Medium to good 1200-1300 lb.	11.60@12.00
Tidy, 1050-1100 lb.	11.00@11.50
Fair to medium, 1000-1100 lb.	9.50@
Fair, 900-1000 lb.	9.25@
Common, 700-900 lb.	6.50@
Rough, half-fat, 1000-1300 lb.	9.00@
Common to good fat oxen	6.00@
Common to good fat bulls	5.50@
Common to good fat cows	5.75@
Heifers, 700-1100 lb.	7.00@
Bologna cows	5.00@
Fresh cows and springers	$30@

Calves.—Receipts of calves were light, the market closed 50 cents per cwt. a Monday's prices. Today's receipts 600 head. Market active at steady p

Veal calves	$12.00@
Heavy and thin calves	5.00@

Hogs. — The supply during the early of the week was fair, and the market stronger, but later in the week re dropped off and prices ruled consider higher, and the close for the week about $1.15 to $1.25 per cwt. above day's prices. Today's receipts were double-deck loads. Market slightly generally.

Prime heavy	$18.75@
Heavy mixed	18.90@
Prime medium weight	19.15@
Best heavy Yorkers	19.15@
Light Yorkers	19.00@
Good pigs	18.25@
Common to good roughs	15.50@
Stags	13.50@

Sheep and Lambs.—The supply of and lambs was light, and with a fair mand prices have ruled steady on and 50 cents per cwt. higher on lambs. day's receipts 5 double-deck loads. M active and higher on lambs, and sheep sold strong at steady prices.

Prime wethers (95 to 100 lb.)	$13.50@
Good mixed	13.00@
Fair mixed ewes and wethers	10.50@
Culls and common	6.00@
Culls to choice yearlings	12.00@
Spring lambs	15.00@

LANCASTER LIVE STOCK

Lancaster, Pa., March 11, 191

Cattle.—Receipts, 627 head, against head last Monday; good to choice steers, @12.50; medium to good, $10.40@11; mon to medium, $9@10; good to choice ers, $10@11.40; medium to good, $8.7 9.50; common to medium, $8@8.40; to choice cows, $8.40@9.25; medium good $7.40@8.15; common to medium, 7; bologna and fair flesh cows, $5.40 good to choice bulls, $10.40@11.40; me to good, $9.60@10.15; common to medi $8.40@9; bologna bulls, $8.25@9.60; to choice stock bulls, $9@9.75; medium good, $8.50@9.10; common to medium, @8.75.

Hogs.—Receipts, 169 head; market prices steady; best grades, $18.50@ roughs, $17@17.50.

NEW YORK LIVE STOCK

New York City, March 11, 191

Beeves.—Receipts, 3,349; easier; st $11.25@14; bulls, $7@11.25; cows, $4. 9.50.

Calves.—Receipts, 1,580; steady; v $13.50@18; culls, $11@13; yearlings,

Sheep and Lambs.—Receipts, 3,670; sh nominal; lambs steady; primes, $18.50@

Hogs.—Receipts, 10,100; firm; med weights, $17.75@18.50.

BUFFALO LIVE STOCK

East Buffalo, N. Y. March 11, 1918.

Cattle.—Receipts, 2,000; steady to stro prime steers, $13.50@14; shipping ste $13@13.25; butchers, $10@12.75; yearli $11@13; heifers, $8@11.50; cows, $ 10.50; bulls, $7@11; stockers and feed $7.50@10; fresh cows and springers, $6 135.

Calves.—Receipts, 1,000; strong, $ 17.75.

Hogs.—Receipts, 8,000; active and stro heavy, $18.75@19; mixed, $19; York $19@19.10; light Yorkers, $18.75@19; p $18.50@18.75; roughs, $17@17.10; st $13@14.50.

Sheep and Lambs.—Receipts, 5,000; ste to strong; lambs, $13@18.75; others changed.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., March, 11, 1918.

Baled Hay and Straw.—Receipts, 60 of hay and 5 cars of straw. The market hay ruled firm, under a fair demand light offerings. Straw was well cleaned at full figures.

Timothy hay, according to location. No. large bales, nominal, $31@32; No. 1 sm bales, nominal, $31@32; No. 2, $29@ No. 3, $26@27; sample, $21@23; no gr $17@19. Clover-mixed hay, light mixed, @30; No. 1 do., $27.50@28.50; No. 2 $24.50@25.50.

Straw.—No. 1 straight rye, $21@21. No. 2 do., $20@20.50; No. 1 tangled $19.50@20; No. 2 do., $18.50@19; No wheat straw, $19@19.50; No. 2 do., $1 18.50; No. 1 oat straw, $19@19.50; No do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $2.0 2.05.

Oats.—No. 2 white, $1.06@1.07.

PITTSBURGH HAY AND GRAIN MARK

Pittsburgh, Pa., March 11, 191

Hay.—Timothy hay easier; receipts been quite liberal lately. Damp, wet monldy hay hard to sell. No. 1 cl mixed still scarce. All arrivals easily pl at full quotations.

No. 1 timothy, $32@33; No. 2 tim $30@31; No. 3 timothy, $28@29; No light mixed, $31@32; No. 1 clover mi $31.50@32.50; No. 2 clover mixed, $ @30.50; No. 1 clover, $31.50@32.50; 2 clover, $29.50@30.50.

Straw.—Straw market remains ste arrivals readily placed at top prices.

No. 1 oat, $17.25@17.50; No. 2 oat, @17.25; No. 1 wheat, $17@17.50; No wheat, $16.50@17; No. 1 rye, $17.50@ No. 2 rye, $17@17.50.

Ear Corn.—Good, sound yellow ear is placed readily at quotations; off not wanted. No quotations.

Oats. — Arrivals more liberal; markets somewhat draggy.

No. 2 white, $1.01@1.01½; standard, $1.00½@1.01; No. 3 white, 99c@$1.

NEW YORK HAY AND GRAIN

New York City, March 11, 1918.

Feed.—There was nothing new regarding the position of this market. Demand is in the market for supplies covering both nearby and future delivery, but there is not much business being placed. The mills are sold ahead and with the difficulties of transportation and the scarcity of wheat they have all they can do to try and meet current contracts. In the meanwhile there is a fair call for oilcake, which buyers are forced to turn to. Milder weather which will relieve the situation for pastures will soon be opening.

All spot prices on feed have been withdrawn.

Hay and Straw.—Offerings are fairly liberal at 33d street shed and there is no material change in the situation. Brooklyn points fairly well cleared, but trade very light, tho prices rule highest of any harbor points. Upper Manhattan stations oversupplied and very weak. Rye straw holds about steady.

Hay.—No. 1 large or small bales, $35@37; No. 2, $32@35; light clover, mixed, $30@32. Rye straw, $21@28 per ton.

Corn.—$2.21.

Oats.—No. 2 white, $1.08@1.09.

Rye.—$2.10@2.30.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., March 11, 1918.

Butter.—The market had a weak tone, because of lower advices from other points, but there was not enough wholesale trading to warrant any important change in prices. The market closed largely nominal.

Western, fresh, solid-packed creamery, extra, 48c; higher-scoring goods, 49@50c; extra firsts, 47½c; firsts, 46½@47c; seconds, 45@46c; sweet creamery, extra, 49c; under grades, 46@48c; nearby prints, fancy, 52c; do., average extra, 49@51c; firsts, 47@48c; seconds, 45@46c; special brands jobbing at 53@55c.

Receipts.—As compiled by the Bureau of Markets, 977 tubs of butter and 2885 cases of eggs.

NEW YORK MILK MARKET

New York City, March 11, 1918.

The demand is only moderate while supply has become a burdensome surplus. The Federal Commission rates are $3.10 a hundred for 3 percent milk; $3.34 or approximately 7.1 cents a quart for 3.6 percent; and $3.50 for 4 percent, plus 12 cents a hundred for recoup of December loss.

Receipts of milk and cream in 40-quart cans for week ending March 9 were as follows:

	Milk	Cream
Railroad	40,210	2,720
Erie	6,572	25
Susquehanna	9,675	864
West Shore	37,795	1,230
Lackawanna	111,241	1,329
N. Y. Central (long haul)	35,909	2,613
Ontario	43,483	612
Lehigh Valley	5,960	50
New Haven	10,650	180
Pennsylvania	5,910	170
Other sources		
Totals	327,405	9,793
Same week last year	352,525	11,834

WOOL TRADE REVIEW

The Boston "Commercial Bulletin" of March 9 says:

Demand for wool during the past week has been limited, altho the local market is generally firm, except for short fine wools, which are a bit easy. The Government's announced intention to exercise its option, confirmed by the visit of the War Emergency Committee to Washington this week, has unsettled the trade more or less, and wool auctions have further distracted attention from the regular market.

The situation at the mills is unchanged.

Ohio and Pennsylvania fleeces.—Delaine washed, 83@85c; delaine unwashed, 75c; ½-blood combing, 77@78c; ⅜-blood combing, 77@78c.

Michigan and New York fleeces.—Fine unwashed, 63@64c; delaine unwashed, 73c; ½-blood unwashed, 75@76c; ⅜-blood unwashed, 77c.

Wisconsin, Missouri and average New England.—½-blood, 70@72c; ⅜-blood, 75@76c; ¼-blood, 74@75c.

Virginia, Kentucky and similar. — ½-blood unwashed, 77@78c; ⅜-blood unwashed, 78@79c.

TOBACCO MARKET

It is estimated that fully one-half of 1917 tobacco crop has been delivered and is now being pushed to the limit. Large sums of money have been paid growers, a single house paying out more than $200,000 in a single day. Should the existing rate of delivery continue the close of the present month will see fully 80 percent of the crop out of the growers' hands. Nothing but adverse weather will halt or hinder delivery.

There was an urgent inquiry for the few unsold crops to be found in many localities. Illustrating the demand it was said that at one point where some six crops remained unsold there were three buyers in a single day and that all the crops were sold at good prices. As usual, many inferior and frosted crops have been left to the last and these are now being taken at prices higher than most growers expected. A grower who had tobacco of the above grade sold at $25 and 12, the proportions of the grade being such as to make an average price of $22.50 per cwt. It is a very common offering that does not bring more than $200 an acre and instances are known in which fancy and heavy crops have brought growers two to three times that amount.—H. F. Tweed, March 11, 1918.

COUNTY NOTES

Lawrence Co., Pa. (W.) March 7.—We have had a strenuous winter with many days of zero weather. Roads have been blocked with snow and all farm work suspended except care of stock and a little marketing of produce. But spring is coming on with a rush and work is already under way. So great is the war demand for food that every farmer is in duty bound to raise more and bigger crops than ever before. We already have the assurance of bigger prices on what we can raise, for the world is face to face with a serious food shortage. It has been for a year, altho most people did not know it until now. The greatest hindrance to bigger crops will be labor shortage. A meeting of farm leaders was held in this county this week to devise ways of drawing out available labor. Considerable help is expected in this way. Another proposition is for the state to purchase a large number of tractors and place them at the disposal of the farmers for plowing, harvesting and other heavy work. It is believed that a great increase of food production could be affected in this way. Then more attention will be given to the war gardens of the country, which were fairly successful last year. Another plan is to turn the clock ahead one hour and gain more "daylight". But after all of these plans have been tried out the feeding of the armies will depend upon the prowess and gumption of the individual farmers working according to tried and proved methods of the past. The issue is work for the farmer or defeat for our cause; food or starvation! A slacker on the farm this year is as bad a curse as ten slackers in the army—his place cannot be filled and their's can be filled with other soldiers. The war is fully absorbing the energies and interests of the people of this county. Red Cross work, war gardens, savings stamps, liberty bonds, meatless days, public war meetings in theatres and churches all add to the daily routine of work and have brought a new and loftier aim into the life of the majority if not all of our people. There is a general determination to so live and so work as to win victory over the treacherous enemy.—J. C. M. Johnston.

Ontario Co., N. Y., (S.W.) March 5.—Our March seems more like April and the great frost that was driven into the ground is slowly letting loose. Near Livonia, N. Y., frost was found five feet below the surface, and in Naples where water mains are laid five feet below the streets, it was necessary to keep the faucets running in order to keep the water "alive". The potato market is in a demoralized condition, due, I expect, to reports that in farmer's hands was a gigantic number of bushels. Men who have carefully investigated this report have decided it to be only a price-maker put up by the dealers to bring them down where they can reap a rich profit. Deducting the potatoes damaged before digging and those frozen in storage, the stock at present in hands of farmers appears only about as large as last year at this time. This being the case, prices are likely to soar before another month has passed. Anyone wishing to buy seed potatoes had better do so while the price is low. They are now $1.25 per hundred weight for firsts. Farmers are going to take advantage of high prices of beans by large and earlier planting than last year, so that they may ripen. Seed will be expensive, but the crop is sure to be high so long as the war goes on. At present, Model Yellow Eyes are selling at $12 per hundred, and will probably go higher. Hay has reached an almost out-of-sight price of $25 to $30 per ton, and a few are securing hay land for the coming season, either by purchase or rental. This is a wise move, as hay will be good property for some years to come. Seeding to clover will be expensive this spring, with seed nearing $25 per bushel. Farm help costs about $40 per month and board and not much help is available at that price. Large farmers are put into serious straits, and about the only way is to exchange work among themselves. This became necessary in the last potato digging, when day help was scarce.—C. M. Drake.

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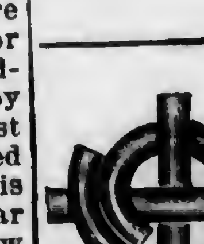

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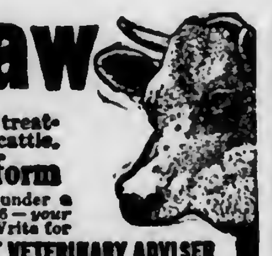

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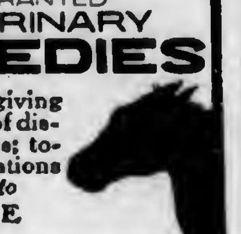

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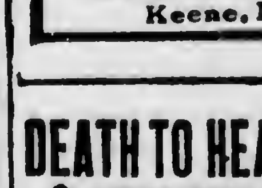

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COUNTY NOTES

Lebanon Co., Pa., (S.E.) Feb. 18.—Weather was warmer last week, causing snow to melt and fields were consequently flooded. Wheat is looking pretty fair. The heavy snows protected it fairly well from the below-zero weather. Hens have started their egg offensives and everything points to an early spring. Tobacco stripping is going ahead rapidly r w and will soon be finished. Buyers are again in the field and bought some of the unsold crop for 28, 15 and 8 per pound. Public sales are held every day and are largely attended. Cows are selling from $'0 to $150; horses, $100; hogs, $17 and $18 per cwt. Farmers' Institutes were held last week and were well attended. Corn is $1.90; oats, 90c; potatoes, $1.20; milk, $3.30; eggs, 48c doz. Farmers are looking around for hired men and the question of farm help is likely to become an acute one until summer.—Leonard F. Strickler.

Broome Co., N. Y., (S.E.) Feb. 16.—Warm weather for several days has left quite a little bare ground in sight. Everything frozen up solid again. Many cellars froze that never did before. Eggs, 70c; butter, 50 and 58c; beans, $7.50 and $8 bu; cabbage 2 and 3 cents lb; potatoes, $1.40 to $1.50 bu; onions, $1.50 bu; apples, $2 bu; wheat, $2.30; oats, $1; corn, $2.50; bran, $49 ton; hay, $14 to $17 ton.—C. H

Cumberland Co., N. J., (S.) Feb. 27.—The weather is more moderate. The frost is nearly all out of the ground. All live stock is selling higher than it did two months ago. Fowls have sold as high as 37 cents per pound at public sales. Milk is 7½ cents per quart at the barn. Country butter is 50 cents per pound. Many farmers are hauling potato fertilizer. The potato acreage is going to be much smaller than usual. The tomato acreage is going to be larger. Some farmers are paying $50 per month and board for help.—Everett H. Sheppard.

POTATO SITUATION

Mr. C. J. Tyson, Farmer Representative of the U. S. Food Administration for Pennsylvania, concerning the present potato situation says:

"The Committee of Public Safety and the Food Administration fully realize the seriousness of the present potato situation, and are doing everything possible to encourage free movement and generous consumption of potatoes. Right now the markets are full of more or less frosted stock, which is selling low because of its quality, and is depressing the market to a greater extent than conditions really warrant. It may be wise to hold back the sound potatoes for a week or two until the frozen stock has moved out.

"We have information from many sources that growers will not plant as extensively this spring. We are firmly convinced that the wise grower will stay by the game and will plant just as many potatoes as he can conveniently handle. Let the farmer who does not have potato soil grow corn, oats, barley or buckwheat. These crops will pay better on such soils and their production will help the food situation to a greater extent."

THE FARM GARDEN IN THE NORTH

Farmers' Bulletin, No. 937, published by the Department of Agriculture, Washington, D. C. Free upon request; contains 52 pages and is fully illustrated. This timely bulletin discusses the economic value of farmers' gardens and treats of the best methods of management in regard to fertilization, planting and cultivation. It treats of the best methods of producing all the principle vegetables and presents planting tables, seed tables and systems of rotation.

FAKE MAPLE SUGAR REPORTS

Fake reports have gone out the government intends to commandeer all maple products at low prices. This is in line with a number of absurd reports that get out from time to time. If any denial is required, the state and the federal food administrations both have authorized the statement that no such step has ever been contemplated. Owing to the condition of the sugar market it is not only desirable that as large quantities of maple products as possible be produced, but it will be wise economy for all who have maple trees to provide themselves with these products for home and local consumption. Prices on maple products promise to be very good this year.

PARCEL POST LIMITS INCREASED

Postmaster General Burleson has announced that weight limits on parcel post regulations have been increased, taking effect on March 15. Packages, when mailed in the first or second zones for delivery in the first, second or third zones, may weigh up to 70 pounds as against 50 pounds under the old rate. The weight limit for all other zones was increased from 20 to 50 pounds. It is expected that this change will stimulate a greater movement of farm products by mail.

NEW BOOK

Successful Farming. By Frank D. Gardner, Professor of Agronomy, Pennsylvania State College. Bound in cloth; contains 1088 pages and over 400 illustrations. Published by The John C. Winston Company, Philadelphia. For sale thru Pennsylvania Farmer. Price, $3.00.

A thoroly practical and helpful handbook, entirely new and up-to-date, explaining latest methods of farming, farm management and stock raising for all sections of the country. The book covers the subject of soils and soil management, farm crops, horticulture, forestry, floriculture, livestock management, dairy farming, plant and annual diseases, insect enemies, etc., together with tables of weights, measures and statistics. Written in easily-understood language. It is not a dry text book, but a reference book to counsel and guide the practical farmer.

NEW JERSEY POTATO ASSOCIATION

Prominent potato growers of New Jersey gathered recently and organized the New Jersey Potato Association. The objects of this association are "to organize the potato growers of the state for mutual advantage and to group together these growers for the development of local interests; to co-operate with and serve the interests of the U. S. Food Administration and the U. S. Potato Association; to assist in standardizing potato grades and to establish better markets for New Jersey potatoes; to assist the State Experiment Station in carrying on fertilizer and other experiments for the benefit of potato growers; to serve as the official medium thru which potato growers of the state may acquaint the National Department of Agriculture with their needs and as the medium for disseminating information to growers from that department; to gather information looking toward the securing of better seed potatoes."

Each potato growing county in the state will have representatives on the Executive Committee of the State Association as soon as there are fifteen men in that county who are members of the State Association. Each Farmers' Exchange will also have a representative on the committee and it is expected that the association will reach each individual potato grower in the state. The association is desirous of coming in touch with all those interested in potato production and will seek to further their interests. It is probable that a campaign will be started for the consumption of potatoes as a substitute for the grains which are needed by our allies.

The officers of the new potato association are: President, Earle Dilatush, of Robbinsville; Treasurer, Walter L. Minch, of Bridgeton; Secretary, W. B. Duryee, of the State Department of Agriculture in Trenton.

Order seeds as soon as possible, if your order isn't already in. This will help the seedsman meet your needs and give you the best that he has. Seed purchased at planting represents what is left and you may have to take poor stuff or go without.

Any corn that is fit for seed should be saved for planting. The seed-corn shortage is country-wide.

Winterthur Farms
Offer For Sale Sons of
SIR INKA PRILLY SEGIS
Who is a son of King Segis out of a 30-lb. granddaughter of the noted foundation cow Prilly. We have 65 of his young daughters born at Winterthur, the first of which will freshen in 1918:

No. 21—Born January 19th, 1918. He is about four-fifths white and a good growthy fellow. His 14 nearest tested dams average 26 lbs. butter in seven days. His dam, Mayflower Topsy Walker 308597, is a 16-lb. two-year-old granddaughter of King of the Pontiacs.

No. 16—Born January 1st, 1918. He is a nicely marked, deep bodied, heavy-boned individual with a good top line. His dam, Lady Pauline Homestead Fietje 186262 with one-half udder she made 17.49-lbs. She and 17 of her sisters by the same sire are in our herd, including one 31-lb. and two 34-lb. three-year-old cows.

No. 25—Born January 31st, 1918. This bull is nearly all white and is an extra good individual. His twelve nearest dams average 26.2 lbs. butter in seven days. His dam, Pauline Ideal 296780, is a 19.17-lb. two-year-old granddaughter of King Segis Pontiac.
Full particulars including pedigrees and photographs will be furnished on request to
WINTERTHUR FARMS
Winterthur, Delaware.

A Pure Bred HOLSTEIN BULL
is the short cut to greater dairy profits. In one instance the daughters of a pure-bred Holstein bull averaged 2,756 pounds milk and 125 pounds butter more than their scrub dams. Granddaughters averaged 8,040 pounds milk, 270 pounds butter more than scrub granddams.
Let Us Show You More Facts
Write for Free Booklet

THE HOLSTEIN-FRIESIAN ASS'N OF AMERICA, Box 218, Brattleboro, Vt.

7-8 Holstein Calves
either sex $15 to $20 each express prepaid in lots of 5. 45 high grade 2 year olds close springers $65 to $80 each. 40 yearlings not bred. 30 registered heifers ready to breed $125 each. 28 registeerd bulls, registered and high grade cows at Farmers' prices.
John C. Reagan, Tully, N. Y.

Maple Lawn Holsteins
Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.
C. W. ELLIS, Jr., Cortland, N. Y.
Office, 31 1-2 Main St. Bell phone.

REGISTERED HOLSTEIN BULL
of World's Record breeding, born March 22, 1917. Dam an A. R. O. cow.—A beautiful individual, ready for service. Price $150, delivered, express paid your station. Your money back if not perfectly satisfied.
ALLAMUCHY FARMS
Arthur Danks, Mgr. Allamuchy, N. J.

"NO HORNS"
Naturally Polled Holstein-Friesian
bull calves, sired by a son of the World's Record senior 4 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp.
GEO. E. STEVENSON & SONS, Clarks Summit, Pa.

MILL HILL FARM
offers Guernseys; bulls ready for service and calves. Tuberculin tested. Oscar Bolick, McKeansburg, Pa.

Beau Rio seventeen months old, registered. Hereford Bull for sale. Weighs 1,290 lbs. Sire, Beau Donald 37th, No. 469301; dam, Lady Geneve 2nd, No. 352467. Champion type. Fed by my twelve-year-old son, Edson. Write ROSS F. STOUT, Clarksburg, W. Va., for price.

Jersey Bull ready for service. Dams record over 500 lbs. butter in 1 year. Sire's Dam 22 lbs. in 7 days. Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us.
J. M. MAIN & SONS. SHIPPENSBURG, PA.

$400 will purchase three finely bred Registered Aberdeen Angus heifer calves, weight 400 to 500 lbs. each and a 14 mon. reg. Angus bull by Black Woodlawn, Sire of Champion and Prince It. 50006.
N.B.MILLARD, 48 Beethoven St., Binghampton, N.Y.

"HAMPSHIRES"
have large litters. Free circular. Also registered Guernsey Bulls.
LOCUST LAWN FARM,
Box 2, Bird-in-Hand, Pa.

Reg. & Grade Holsteins 30 head reg. heifers, $250 each; cash or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees.
WALTER M. CRUTTENDEN Wilkes-Barre, Pa.

Holstein Bull Calf six months old; 24 lb. dam, 31 lb. sire.
George M. Carpenter, 41 S. Main St., Wilkes-Barre, Pa.

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd.
BONNYMEADS FARMS, R. D. 1, Harrisburg, Pa.

AYRSHIRE BULL CALVES Advance Registry ancestry. Priced to sell. They will improve your herd.
ROBERT TEMPLETON & SON. ULSTER, PA.

Reg. Chester Whites big type, Guernsey Calves. Write your wants. MOSES EABY. Landenberg, Pa.

Two Registered Guernsey Bull Calves with A.R. backing. Write for pedigree and price. J. I. HERETER, Gettysburg, Pa.

Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M. E. Basehoar, Crystal Spring Stock Farm, Littlestown, Pa.

Milking Shorthorns Bull calves bred from the best milking strains, for sale; also few heifers. C.M. Kennedy & Sons, Ulster, Pa.

Holstein bull calf, grandams have average record of 31 lbs. age 15 months. Price $80.00. Oaks Dairy Farm, Wyalusing, Pa.

Ayrshires young A. R. cows, bull and heifer calves. Best blood lines, reasonable prices. Inspection invited. Robert Templeton & Son, Ulster, Pa.

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Corn.—For the past three years one of my horses has been troubled with corn in fore foot. Would like to know how he should be shod. F. S., Berlin, N. J.—Usually a corn is the result of bruise, often following leaving shoe on too long. The wall of hoof grows over the shoe, allowing shoe to bed into sole, which is very often the case when horses are not regularly shod. There are many other causes of corns. The shoer should keep all pressure off the tender corn. Either apply bar shoe or a strong shoe which will not bend. The foot should be kept moist and cool. Stand horse in damp clay two hours daily. Do not allow shoer to cut out too much sole where corn is located.

Verminous Bronchitis — Lung Worm in Swine. — There has been some exception to my discussion of spasm of larynx or pigs choking on cold slop. A reader suggests that the trouble is really due to lung worms. The lung worm of hogs is of greater importance than most hog raisers believe and I might say it is the most common parasite of swine. When these parasites are present in the air passages in very large numbers they may interfere with the health and thrift of the pig, but in most cases they do not materially interfere with the pig's general health. The lung worm has a thread-like body, from one-half to 1½ inches long. It is of brownish color and the male is smaller than the female. The ova are carried out from the lung in the discharge and may pass out directly or pass into the pharnyx and be eliminated with the foeces. The parasites gain entrance to the animal body in the food or water, infection of swine being easily accomplished. Young pigs seem to be most susceptible. The route of migration is still a disputed question, but doubtless they pass either by way of the blood stream, or by way of the pharnyx thru larynx to the bronchial tubes and are not inhaled as formerly supposed. Altho this ailment is quite prevalent, few pigs die from it. The primary symptom is a cough that becomes more frequent as the disease progresses. In fatal cases the cough becomes paroxysmal, the pig falling to the ground from exhaustion and lack of air. The course of the disease varies from one to three months or even four months. This disease is difficult to treat, because of the location of the parasites and it is always troublesome to control. The only rational treatment is to inject into the windpipe a remedy which will kill the parasites, or let them inhale medicated vapors, but to do this you must have an airtight room. Inhalation of tar, or turpentine fumes may be used, but the general use of such lines of treatment is impractical.

Some of our readers persistently write that I make a wrong diagnosis in saying that pigs choke on food, or that they suffer from spasm of pharnyx, larynx, or throat from other causes, tumbling down in a convulsive spasm, but usually recovering from this fit in a few minutes or less. Such readers believe that these fits are caused by lung worms and nothing else. Fits are not a symptom of lung worms. Guessing is one thing, but knowing is another. The writer has examined hundreds of hogs after death, found them infested with lung worms, but these parasites had nothing to do with causing the pig's death.

Chronic Cough.—I have a horse that has been troubled with a cough for more than a year. I have given him several commercial remedies for cough, but none of them have helped him. W. K., Chittenango, N. Y.—Feed no clover o. musty, dusty, badly-cured fodder of any kind. Give him one ounce doses Glico-Heroin (Smith) 3 times a day. His stable should be kept clean and be well supplied with fresh air.

Poultry

World's Greatest Layers
S.C.W.Leghorns W.Wyandottes
S.C.R.I.Reds Buff Orpingtons
Liberty Belle, our 'World's Champion White Wyandotte, laid 294 eggs in 359 days in International Contest just ended, beating all entries of all breeds. Merely another proof that our perfected English 200-Egg Strain leads in every competition. Other records: 1st prize, Leghorns, International Egg Contest, 5 hens laid 1139 eggs; Reds, 1st prize, 5 hens laid 1043 eggs, highest official Red record; Wyandottes, Missouri Egg Contest, 10 hens laid 2006 eggs, over 200 eggs average. Most profitable poultry known. Order breeding stock now.
Cockerels, pullets and hens from champion pens. Write today for book, "Story of the 200 - Egg Hen." Contains valuable information that will increase your egg yield. Price 10c, refunded on first order.

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Well hatched chicks—sturdy, pure bred from heavy laying strains of Rocks, Reds and Leghorns, etc. Easy to grow big layers from Hillpot chicks. Prices moderate.
Get our FREE BOOK
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HILLPOT QUALITY CHICKS Trade Mark

Eggs White Leghorns Chicks
Do you want the best for your foundation stock, or new blood for your flock? Then order from an Old Established Breeder. We are not a Hatchery.
Single Comb White Leghorns Only
Our prices are as low as can consistently be named under present conditions.
SPRING WATER POULTRY FARM
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WILL SAVE YOUR CHICKS
Any reader of this paper who will write P. J. Kelly the Poultryman, at 73 N. 2nd St., Minneapolis, Minn., will receive a Free Copy of this new booklet "White Diarrhoea in Baby Chicks." It tells how to prevent, remedy and save the whole hatch. It's free and you are urged to write for it at once. Advertisement.

DAY-OLD CHICKS
250,000 for 1918. $10.00 per 100 and up. Pure bred, hatched right. Strong guarantee. 10 leading varieties. Hatching eggs. Western Branch, Augusta, Kansas. Free Catalog. Stamps appreciated.
HUBER'S RELIABLE HATCHERY
332 West Fremont Street, Fostoria, Ohio.

DAY-OLD CHICKS
of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.
GOSHEN POULTRY FARMS, R 23 Goshen, Indiana

Baby Chicks S. C. White Leghorns. $12.50 per 100. Circular.
R. S. GOOD, PEACH BOTTOM, PA.

Hampton's Black Leghorns Day old chicks and eggs. Get my free circular before you order chicks, tells why the Black Leghorn is the greatest laying and most profitable breed on earth. Write today. Also White Leghorn Chicks. A. E. Hampton, Box F, Pittstown, N.J.

Selby Service Satisfies Ship us your produce, poultry and eggs, Penna. Potatoes a specialty. Returns day goods are sold. Ask for our market letter.
SELBY PRODUCE CO., PHILADELPHIA

CHICKS S. C. W. Leghorns from vigorous business bred hens that have lop combs, long bodies, deep egg baskets. The profitable kind. Get our prices.
GUY A. LEADER, Rt. 2 York, Pa.

Over 100 White Holland Turkeys FOR SALE
Hens weighing ten and eighteen lbs., $5 to $10; toms, sixteen to twenty-five lbs., $8 to $15. Satisfaction guaranteed. H. W. ANDERSON, Stewartstown, Pa.

PARADISE POULTRY FARM Breeding of heavy laying Poultry. Trap Nested S.C. White Leghorns Buff Ply. Rocks, 200-Egg Strain. Rhode Island Reds. Day-old chicks. Hatching Eggs and Stock for Sale. Our 1918 Circular Free. Box B, PARADISE, PA.

Tiffany's Superior Chicks Silver Laced, White and Columbian Wyandottes, S. C. R. I. Reds. Barron's Leghorns, Pekin, Rouen and Indian Runner Ducklings.
ALDHAM POULTRY FARM, R. 39, Phoenixville, Pa.

Eggs--Baby Chicks Single comb white Leghorns, trap-nested stock, heavy laying strain. Cat. on inquiry. Book orders early because big demands and shortage of stock. Riverdale Poultry Farm, F. E. McAllister, Prop., Cortland, N. Y.

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EGGS Black and White Langshans, Light & Dark Brahmas, Barred Columbian and Partridge Plymouth Rock, Partridge and Columbian Wyandottes, Pekin Ducks. 15 for $1.50 prepaid.
M. H. MYERS, EDOM, VA.

Turkey Eggs strictly fresh from large selected M. Bronze, B. Red, W. Holland and Narragansett, 9 for $3.25; 15 for $5.25 by mail or Express prepaid. Safe arrival guaranteed. Orders booked now. N. M. Caldwell, Jacobsburg, Ohio.

60 Breeds chickens, ducks, geese, turkeys, guineas, bantams, Hares, Collie and Fox-terrier puppies. Stock and Eggs. Exceptional fine cat. free. Write for yours now. Edwin A. Souder, Telford, Pa.

Look—Chicks $9 per 100 and up, for April delivery. 200,000 for 1918—8 best varieties. Our ninth year. Order early. Catalog free. KEYSTONE HATCHERY, Dept. 19, Richfield, Pa.

Baby Chicks English Leghorns $15.00 per 100. From trap nested stock. Remember we don't run a "Hatchery."
GLENDALE POULTRY FARM, Dillsburg, Pa.

Baby Chicks Our famous winter laying varieties. White and Bar-Rocks, Reds, Leghorns, Anconas. Get prices before buying chicks. E. R. HUMMER & CO., Frenchtown, N.J. R.D.y

S. C. R. I. Reds Eggs $8 per 100; $1.50—15. Healthy vigorous utility hens—no pullets.
E. R. JOHNSON. Center Bridge, Pa.

S. C. White Leghorn baby chicks, Tom Barron Strain, 12 to 15c each, according to season. The world's greatest layers.
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For Sale Chicks, 20 varieties. Write Desk E. 529 Hamilton Street.
NORTH SIDE POULTRY CO., Allentown, Pa.

Baby Chicks S. C. White Leghorns, price right. Order now for spring and summer delivery. Howard G. Allen, New Park, Pa.

Thoroughbred Poultry Best 20 varieties. Eggs 15, $1.00; 40, $2.50 up. Cat. free. H. K. Mohr, Quakertown, Pa.

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Hatching Eggs S. C. White and Buff Orpington and Black Minorcas. 15 for $1.50; 50 for $3.50. Postpaid. W. J. Widney, Doylesburg, Pa.

Extensive Cat. free. Varieties fine poultry, turkeys, geese, ducks, guineas, bantams, hares, dogs, pigeons, eggs, stock. Pioneer Farm, Telford, Pa.

Barred Rocks "Ringlets" S.C.Reds, Owen Farms eggs $2 per 15; $3.50 per 30. Fred G. Keller, Millersport, Ohio

WANTED 200 old hens, any breed. 200 bushels Potatoes.
H. C. TILLEY. RYE, N. Y.

S. C. White Leghorn Eggs for hatching. $5.00 per 100.
CHAS. H. REED, NOTTINGHAM, PENNA.

Swine

O. I. C. Pigs
Three extra fine litters, brood sows to farrow in April and May. 2 boars ready for service. Overstocked, they must move quickly. Write at once.
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O. I. C. SWINE Big Type. Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants.
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Reg. P. Chinas, Berkshires, C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry.
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For Sale O. I. C. pigs bred from prize-winners of the very largest type. Remember the best hog today is the one that will farrow a good sized litter and raise them. That is an O. I. C.
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Poland Chinas Registered and cholera immunized. Sired by or bred to half-ton boars from dams that weigh up to 800 lbs.
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Poland China Sows (three) bred to best Poland Boar in County. Two have second litter of pigs, one bred now for first time. R. F. EPPLEY, R. F. D. 6 Zanesville, Ohio.

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Large Berkshire Swine Registered High Grade. Prices reasonable. Write HOME FARM, CENTER VALLEY, PA.

O. I. C. & C. W. pigs, shipped C. O. D. Sired by and out of champions. Mischief 2d weight 500 lbs. at 12 mos.
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O.I.C. & Chester White Spring pigs ready soon. Satisfaction & safe delivery guar.
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More profitable than poultry. Big demand. Thousands needed. Experience unnecessary. Send for our money-making proposition and big free illustrated book, explains all.
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ELIZABETH FARMS, R. F. D.
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Imported Percheron Stallion for sale. Registered; color brown, weight 1650. Must sell to reduce stock. Price low. Joseph Seals, R. D. Hackettstown, N. J.

Clydesdale Stallions Young horses, ready for service. Fine individuals; prices reasonable.
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Make Money RAISING HARES and reduce cost of living. GARLAND ZOOLOGICAL COMPANY, OLDTOWN, MAINE

Hampshire Ram Lambs Beautiful form. Excellent breeding. Vigorous and stocky. Manetto Hill Farm, Hicksville, L.I.

NOW, more than at any other season of the year, the kind of ration you feed your dairy cows is of the greatest importance. They have been on dry feed for several months and apt to be showing a dropping off in their milk production. They should have a ration of exceptional PALATABILITY and particularly one containing the WIDEST VARIETY of grain products which are high in quality of both carbohydrate and protein content — a ration that will "whet" the appetites and induce maximum production over long milking periods.

In SCHUMACHER FEED and BIG "Q" DAIRY RATION you have a combination of milk producing materials which are most ideal. They furnish the five essentials of a successful dairy ration—PALABILITY—DIGESTABILITY—VARIETY—NUTRITION and BULK, so scientifically balanced that your cows will relish them day after day, year in and year out, and maintain their maximum flow and keep in vigorous, healthy condition.

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SCHUMACHER FEED has been the "stand-by" and standard of dairy feeds for years. It has to it's credit more World's Champion Long Distance Milk and Butter records (as the carbohydrate portion of the ration) than all other feeds combined. Of 27 World's Champion Records to its credit — 20 were on YEARLY production — and you know that LONG DISTANCE PRODUCTION means increased LONGER profits for you.

Fed in conjunction with BIG "Q" DAIRY RATION—our new high protein feed—you have a mixture which can be made suitable for any cow, in any lactation condition. The secret of the exceptional merit of SCHUMACHER is in the fact that it supplies the ENERGY, STAMINA, "BACK-BONE" VIGOR "STAND-UP-ABILITY" so vitally necessary for long milking periods.

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Try Feeding the Following Suggested Rations and Let Your Own Cows Render the Verdict:

General Ration with Ensilage or Roots	One part Schumacher Feed One part Big "Q" Dairy Ration
To Fresh Cows with Green Feed......	Two parts Schumacher Feed One part Big "Q" Dairy Ration
To Dry Cows..............................	Four parts Schumacher Feed One part Big "Q" Dairy Ration
Test Ration................................	One part Schumacher Feed Two parts Big "Q" Dairy Ration

(Increase Big "Q" Ration if cow can handle more protein without bad effects)

Now is the time to force your milk production. Every extra pound of milk you produce by liberal feeding up to the capacity of the cow is two-thirds profit. That's why it pays big to feed these two ideal feeds. (67)

The Quaker Oats Company, Address Chicago, U.S.A.

FUL-O-PEP POULTRY FEEDS

We have just issued a valuable new Poultry Book and Poultry Calendar which tells in detail why hens do not lay more eggs—why they stop laying in winter and how to overcome these conditions. It is full of interesting hints and tips. It is a book you will value, use and keep. We will gladly send you a copy free on request.
THE QUAKER OATS CO., Poultry Dept., Chicago, U.S.A.

FUL-O-PEP POULTRY CALENDAR

PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880
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Library Agri College Experiment Station

Uncle Sam Wants More Pork

Producing and Feeding Hogs For Market---Fred S. Hultz, Penna.

In these times of war and unprecedented high prices it behooves every feeder to observe the utmost economy in production. Each pound of concentrate or roughage saved means an added food supply later on. A profitable system is indispensable. Unless the man who feeds live stock for market is assured of a fair profit for his labor he will not continue to produce and sooner or later the country will suffer from the shortage of market meat which will follow. There is a shortage today, both in feeds and live stock, due to several causes, and it is up to the farmer to make good this deficit as best he may. We must have food if we are to win this war.

No food is in greater demand than that furnished by hog products. There is practically no waste to a hog when he goes to market. The suggestion has been made that vegetable oils can be used to replace the animal oils, such as are obtained from fat hogs, but even if such substitution were to be attempted the pork producer need not fear his product will not command fair prices. The supply of vegetable oils is too limited to make it a serious factor of competition to pork marketing.

Boarder Sows

There are two distinct branches of pork making, the production of the pigs themselves in sufficient numbers to supply our feed lots, and the economical growing and fattening of hogs for market.

There are too many "boarder" sows on our farms, sows that produce too few pigs or are non-breeders. These animals are a drain on hog profits. In many instances non-breeding sows may be treated successfully if the cause is the result of poor care or improper attention to the details that go to make up prolificacy and fertility. The value of the sow or sows may not be enough to warrant the expenditure of consulting a veterinarian, in which case they should be fattened for immediate market.

Rations for the Sow

An important element of profit or loss is the care of the brood sow at farrowing time, in order that her pigs may all be saved, and that they may be healthy and strong. Much is dependent upon the system of feeding used for the sow prior to farrowing. If she is to bring forth a large, strong litter, she must be provided with plenty of the food elements which go to make up muscle and bone in the pigs she is carrying. Alfalfa hay, supplemented with middlings or crushed oats, to be fed in connection with a very light corn ration makes for good breeding condition. Barley may be substituted for corn when it is at least 10 percent cheaper than corn. Barley is not quite so heating and for that reason is more desirable for the brood sow, altho it cannot be fed whole as the hard coat makes mastication difficult. Barley should be cracked or soaked before feeding.

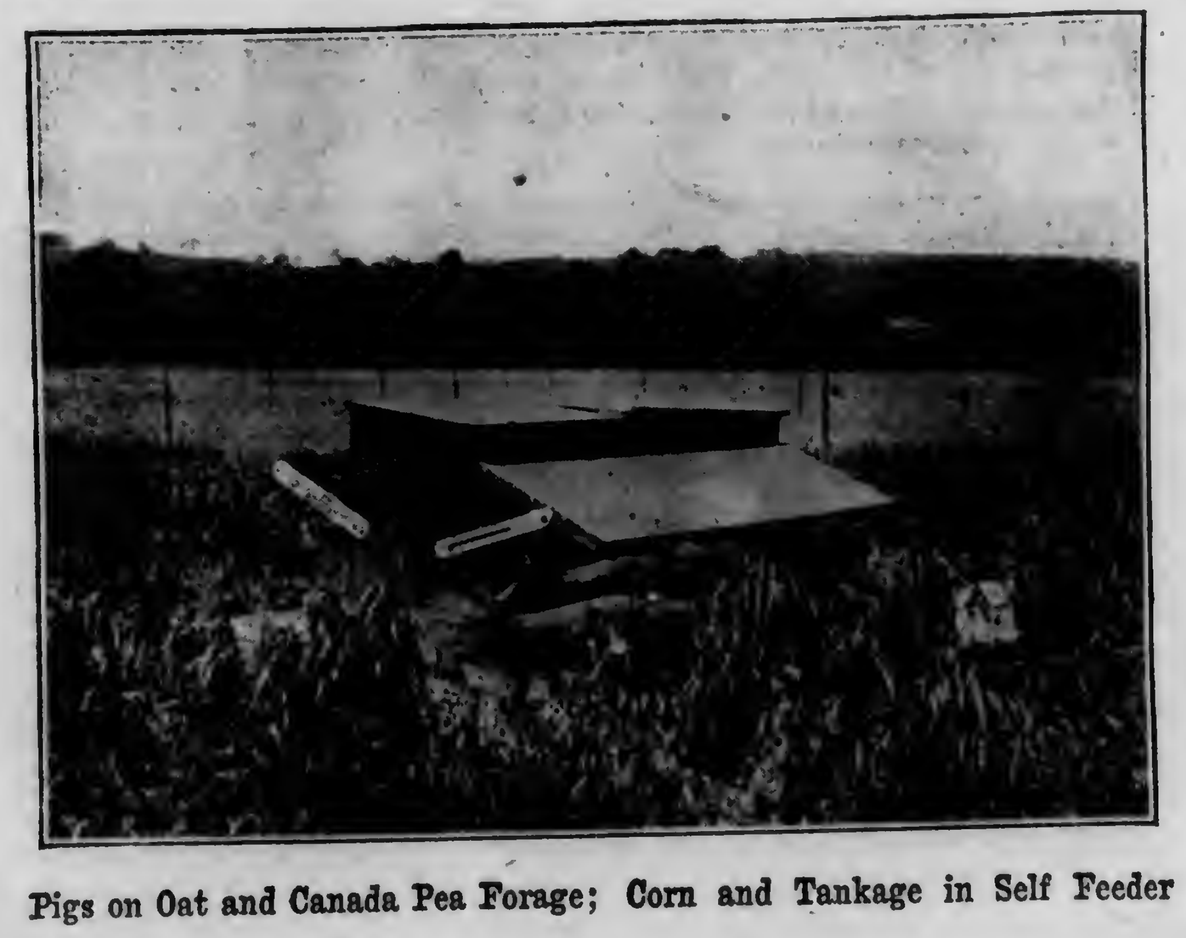
Purebred Berkshire Mother With Litter of Twelve

An inexperienced feeder in many instances may overdo the feeding and put too much fat on the breeding animals. This is almost as damaging to the coming litter as too little fat. A fat sow is liable to constipation and fever. On the other hand, a poorly nourished sow is not able to furnish an adequate milk supply to get the youngsters started right after they are born.

It does not pay to push the sow too hard with feed immediately after she has farrowed. The small pigs do not require much milk for a day or so, and the sow's udder is liable to become caked or at least inflamed because of a heavy milk flow that is not utilized. She needs nothing but warm water for at least twenty-four hours after farrowing. The start on grain must be gradual, beginning with a little wheat middlings and oil meal or middlings and tankage. In a few days the ration may include corn (or barley) seven parts, middlings three parts, and oil meal one part. The amount of grain fed should be about four pounds per one hundred pounds of live weight.

After spring farrowing, the sow may soon take her litter out to pasture. There is nothing that will so cheaply and satisfactorily maintain the brood sow as good bluegrass, alfalfa or clover pasture. Of course a very slight grain ration, probably middlings, is advisable for the sow that is nursing a large litter on pasture.

It is well known that nothing seems to produce gains on market hogs so economically as does corn when it is fed with a protein supplement. This year the problem of where we shall get the corn confronts us. We will have to provide a substitute in many cases and what that substitute will be depends to a large extent upon local conditions. The spring litters can best be fed out on a system of forage crops. Experiments at the Pennsylvania State College covering a period of several years have borne out that statement. It has also been shown that some other protein supplement should be provided along with the forage and grain ration. It may be that we shall have to use cracked barley, wheat middlings and crushed oats to supply the carbohydrate needs, when the corn stock runs low. The producer who has access to some manufacturing by-product which furnishes available carbohydrate should not fail to make use of it. But even the by-products have in many instances doubled in price.



Pigs on Oat and Canada Pea Forage; Corn and Tankage in Self Feeder

(Continued on page 14.)

Increasing the Gamble in Farming

Lack of Definite Agricultural Policy Endangers Future Food Supply

It has been remarked with some evident truth that any hope the Government has of obtaining an increase in food production should be discounted so long as price regulation is allowed to work only one way. Farmers are not given to fervent expressions of their disapproval of laws and regulations, but there has been a universal shaking of the head over the outlook for wheat. This is particularly so now that their claims for a better price on the plea of increased cost of production has been subjected by the explanation that it was necessary to keep the price at approximately the same figure, so as to thwart hoarding and speculation.

In response to the government's call, the farmers planted an acreage to potatoes last spring far in excess of what the returns would indicate. A 467,000,000-bushel crop, surpassing the average yield by some 150,000,000 bushels, has been marketed the past winter at a profit that will be hard to distinguish from a loss; with a large part of the crop remaining to be disposed of at nobody knows how ridiculous a figure. Again, last fall the government asked that at least 47,337,000 acres be planted to wheat, and in spite of adverse conditions 42,170,000 acres were planted—an increase of 4 percent over a year ago. The late harvest of other crops and shortage of help made it impossible to get the crop planted on time. Early frosts and a severe winter can not fail under these conditions to reduce the average yield per acre. And the cost of production has increased considerably over the 1916 crop. It is not hard to foresee how future wheat plantings are being jeopardized by this lately devised plan to stiffle profiteering.

The Food Administration bill has a clause covering this very contingency. A fine of $5,000 or imprisonment for not more than two years, or both, can be imposed upon any one found to be willfully hoarding any necessaries for the purpose of enhancing the price. There is no intention of trying to make out a specific case here. It is a mere happening to be included among the many decisions to be made at Washington that cannot help but be responsible for the ultimate success or failure of agriculture in the pending crisis.

Nor can we afford to have any reader think that there is any failing to appreciate or support the main efforts of the government in these serious times. It is precisely because thoughtful farmers wish these efforts to succeed that a committee representing the Federal Board of Farm Organizations was delegated recently to present to the President several definite propositions, including the suggestion that a farm commission be appointed, to consist preferably of nine farmers, to report directly to the President on all questions that affect the increase of agricultural production and distribution.

The food bill gives the President drastic powers over the food supplies of the country. It authorizes him to license, under such regulations as he may consider essential, the importation, manufacture, storage, mining or distribution of any of the commodities which the bill designates as necessaries; these including foods, feeds, fuel and fertilizers, with tools, machinery and equipment necessary for the actual production of food, feeds, fuel. And if it appears to be necessary in order to prevent unjust practices, to fix the charges, profits or commissions of such licensees. Inasmuch as the mechanism of a nation's economic life is intricate and delicate, to enforce any portion of the above program under autocratic control without taking counsel with practical and experienced men would be a hazardous undertaking. Both the coal and shipbuilding industries will testify to the truth of this statement.

To assume that farming (more or less of a gamble) can hold up under conditions whereby the cost of production is allowed to advance out of all proportion to the increase in revenue, is a problem that has been treated with more or less indifference by the government. Cattle feeds are a glaring example. Take bran, the by-product of a grain made staple under government regulations. It jumped in price from $35 to $50 a ton in a few months. It is in like manner that the upward sweeping prices have engulfed every other necessity to agriculture, with the result that the less fortunate are finding it hard to make both ends meet.

This article is not written in the defense of the shortcomings of farmers. The poor and the inefficient we will have with us always, but when it comes to the point that the average man of industry cannot prosper, it is time for the nation to study the portents. Drouths, storms, pests and disease among live stock, with no reserve fund to cover the loss, sometimes hampering the business for years to come, are in no wise conducive to a very high morale. Many sections of the country (including some counties in our own state) are approaching the spring planting season with scarcely any seed, due to unfavorable climatic conditions last year. A similar occurence on a larger scale has been overcome in North Dakota in spite of the refusal from the government to give aid, by the state legislature, under the control of the Non-Partisan League, passing a measure enabling the counties where need exists to issue bonds and lend the proceeds to the farmers on their personal notes. But conditions politically are not so favorable to farmers in other states.

Mr. Hoover and Secretary Houston are at logger-heads over a bill covering this matter now before the House. The extent to which Secretary Houston opposes its passage is evident by his refusal to help North Dakota, a state that supplies practically one-seventh of the wheat grown in this country. The farmers have lost faith in their Secretary of Agriculture and justly so, for obvious reasons. The passage of this bill is of vast importance to the country at large.

It is perplexing to find things working at cross purposes to such a degree, now when our main undertaking is so dependent upon the farmers for its success. We cannot afford to have any part of a large number of farms stand idle. Yet the fact remains that unless financial aid is to be had for seed, machinery, fertilizers and labor, there will be a large percentage of the farms (a much greater percentage than I would care to name here) curtailing the spring planting out of necessity. Every sort of pestilential weed will spring up on idle ground, spreading rapidly to make future hardships for the farmer, and in the face of an ever-increasing shortage of labor this presents a more serious aspect than would at first appear.

However, in spite of all that can be said, labor is the crux of the agriculture difficulties. The French government, realizing this, last year released from military service for farm work 274,130 soldiers of the older classes, of which 193,274 were proprietors and 80,856 farm laborers. In addition, it released some 53,500 prisoners of war. Such mature plans, borne out of experience, seem to have had little weight with us in our hasty draft for the first army; the war depar ment having been allowed to make the selectiv draft belie its name. For example:

	Called	Exempted	Pe
Agriculture	782,503	205,731	26
Animal Husbandry ..	15,642	4,570	29
Beverage Industries .	5,752	1,472	25

Of the great bulk representing the oth walks of life, the average was something like percent. So it will be seen how the food pro ducers have been called upon to make the greate sacrifice in furnishing men for the army. Th solution of this problem is to return all farme boys to their homes and have them classified und the new selective draft which promises well fro all indications.

The necessity for closer co-operation betw farmers and their organizations is very appare today. The Federal Board of Farm Organiz tions has taken steps in the right directio and results are awaited with much interest. N matter what the President's verdict may be, th farmers must give him undivided support to th end of the war. If that end is to be prolonged the situation becomes intense in America, it w [illegible]g about reforms that years of argument cou never accomplish. I predict a more direct m keting system will be one of the great measur

In the meantime the farmer enjoys the in dependence of planning his plantings, recei rewards for his labor in accordance with h ability to guess right. Here the great dang comes in letting a scarcity accompanied by hi prices have its influence toward over-planti the following season. There is no doubt in th minds of most farmers but what the law averages will be found favoring general cr rotation, as the fellow putting too many eggs one basket often invites disaster. Unshackle th farmer, enable him to go out in the market a bid against the war supply manufacturers for h labor. This is the one and only answer to th whole situation.—Nathan Price, Chester Co., P

Sweet Clover as a Farm Crop

Twenty-five years ago sweet clover was weed, cursed by everybody. Today sweet clov seed leads all the legumes in price per bushe Why? Because it has made a place for itse among the general crops of the farm.

As a soil improver it has few superiors, an for certain conditions, no equals. As a food pr ducer it is valuable for pasture for all kinds live stock; it yields a hay nearly equal in comp sition to alfalfa and not far behind it in practic results, and as a seed producer it is a very pro itable crop.

It is adapted to the whole United States, an in so far as climate is concerned, thriving i both semi-arid and humid sections and on pra tically all soil types, tho it is insistent upo carbonate of lime in the soil. Wherever alfalf or red clover are somewhat uncertain, sweet clove will find its largest place.

It may be seeded any time from Februar to September. Ten to fifteen pounds of scarifie seed per acre are an abundance. If seeded fro February to May it should be wit a companion crop of small cereals as wheat, rye, oats or barley. Mid summer seedings should be alone.— C. G. Williams at Pa. Farmers' Week

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The digestible nutrients an fertilizing constituents in feeds an feeding stuffs have been carefully de termined and these results may b secured in published form and shou be in the library of every farme Live stock manure if properly han led should contain on the averag more than 80 percent of all the fe tilizing elements — nitrogen, pho phorus and potassium—found in th feed. This fertility may be returne to the land at a very small expen by using a manure spreader.

Ready for the Trenches—Such Preparation Insures Success

A Two-Weeks' Trip Over Eastern Farms

How Farmers Are Preparing to Meet Their Spring Problems---By John H. Voorhees

There has never been a time when the problems confronting the farmer were more interesting, important and complex. On the one hand there is an increasing demand for the production of foods, foodstuffs, and clothing; and on the other hand an impoverished supply of labor and high prices on necessary farm supplies, seeds, fertilizers, machinery and the like. More complex still is the question of prices for 1918 produce, because the farmer must have some assurance of a reasonable profit if he is to use his best efforts to meet the extreme demand.

The General Situation on the Farm

I have just spent two weeks among the farmers of Pennsylvania, Maryland, Delaware, New Jersey and a small part of New York State. I have talked with many farmers, county agents and officials of the agricultural colleges and experiment stations, and a number of salesmen who are constantly in touch with farmers and dealers who supply farmers.

From personal contact with these men I learned that much confusion and uncertainty exists everywhere in rural sections. The greatest bone of contention is the matter of prices and price-fixing. About every so often a price for a certain commodity is published without any definite information regarding from where it emanated and occasionally an order is issued affecting their business. Mr. Hoover, speaking for the Food Administration, claims that it has fixed the price of wheat only; and yet, prices on produce are continually being published; as for instance, the price on beans and the price on tomatoes. Such things with the high cost of materials and difficulty of securing labor without any guarantee of a reasonable profit, have disturbed the farmer's mind regarding the best method of procedure in order to assist to produce greater crops and still protect his property. There can be no criticism of the farmer. His business is a gamble in normal times and in an emergency of this kind the difficulties should be eliminated by government assurances rather than increased by confusing orders and maximum prices. Every effort should be to stimulate production rather than depress it.

1918 Prospects

Every one at this time is interested in the winter wheat crop. It is impossible to prophesy during March what wheat and rye are going to amount to. Often a very poor field turns out very well, but in general a strong, green field produces better than one appearing to lack vigor and vitality. Thru most of Pennsylvania grain looked good; at least, that is my impression after going thru New Jersey, Delaware, and Maryland where practically all grain appeared as tho it were planted late.

Everywhere the farmers are looking forward to the arrival of the nitrate of soda being distributed by the government at a fixed price. They approve the movement heartily and consider it one act of the government which stands out above all others as an aid to them. Many are planning to use it as a top-dressing for grain, but everywhere there exists a fear that it will not arrive in time for spring use.

Tomatoes and Corn

It may seem strange to discuss these two crops under the same heading. But prices reported to have been fixed for canning tomatoes are so low that the growers in New Jersey, Delaware and Maryland have decided to grow corn instead. In Delaware and Maryland, farmers who grew 20 and 30 acres of tomatoes last year are planning on 6 and 10 this year. In the tomato growing sections of New Jersey, especially those in Southern New Jersey, the farmers had planned to put 25 percent of last year's potato acreage in tomatoes and as a result of the $21 a ton, or 35 cents a basket price, they are now planning a large acre increase in corn and a proportionate decrease in tomatoes and potatoes.

The reasoning of the farmer is all perfectly natural and sound. The prices reported fixed were $21 for New Jersey, Maryland, and Delaware; $20 for New York and Michigan; $18 for Illinois and Indiana; and $15 for Colorado and Utah. Last year Maryland averaged 3⅓ tons at a cost of production of $68 an acre. This year the cost would approximate $100 an acre. The Delaware Experiment Station and county agents of Delaware figure on a cost of $100 an acre and the New Jersey men top the list with a cost figure of $125 an acre. It is sound judgment in the light of these figures to grow corn instead of tomatoes, especially as no one can say now whether labor to harvest the tomato crop will be available; whereas corn may be husked anytime during winter. The price on corn makes less difference in view of the fact that it may be fed on the farm.

Everywhere I went a large acreage of corn is planned and county demonstrators are using every effort to have the best seed obtainable used. In many places meetings were being held among farmers solely for the discussion of cultural methods best adapted to the production of corn, and the demonstration of the best type of seed to be used in the particular location. This is an important feature because there was a great amount of soft corn harvested during the past fall and winter. Too much care cannot be taken to make sure that corn for seed is adapted to climatic conditions, of high germinating quality, and of good vitality.

The Labor Situation

A great amount of discussion has been had in the press about the farm labor shortage. On the contrary, the farmer is simply resigned to the fact that he cannot compete with industry for labor. Farmer after farmer has decided to do what he can finish himself with such labor as he has left, feeling that the uncertainty of labor and prices do not warrant greater efforts on his part without some active and constructive cooperation of the government.

There is a feeling everywhere among farmers that the draft has worked great injury to him and his business, but the injury has been done now. He is also beginning to realize that while the draft took his best men yet industry has taken just as many by a lure of high wages just as the recent labor survey of New York shows when it reports that of the seven out of every ten men who have left the farm in the last year, three were drafted and four left to seek higher wages in industrial work. Hence, the question is one of competition between the farmer who is compelled to sell his produce in the open market and the manufacturer who sells his product at a price based on the cost of production plus profit.

There is evidence everywhere of the scarcity of labor. Husking corn was a common picture everywhere, and few farmers had found time to cart the stalks of husked corn to the barn or out of the field. Tomato and potato vines had been raked together and left in the fields. Regardless of the merit or lack of merit in such cases, these stalks and vines must be removed this spring when the farmer's time is needed for productive work.

It is customary to see work of improvements being made on most farms at this season; a little fence repairing, a little ditching, a few new shingles on the roof of the barn, and work of this nature. There was a conspicuous absence of any work of this character, showing that all farm work will be delayed this spring. It is a serious matter as a farmer of a great many years' experience has often said to me, "delays and waits are dangerous"

The Farmer and Price-Fixing

Everywhere the matter of prices is the topic of much discussion. The concensus of opinion among farmers seems to be that if there are to be fixed prices as an emergency measure they should be minimum prices, not maximum prices, in order that he may have a basis upon which to make his plans for the coming season. It is too late now. As an alternative he feels that if maximum prices of farm produce are to be set, there should also be fixed prices on all important farm supplies, fertilizers, seeds, machinery, fencing materials and the like. There is a great deal of justice in the farmers' opinions and it is unfortunate that more cognizance has not been taken of the farmer's point of view instead of berating him for a lack of patriotism for one reason and another.

It is unfortunate in many respects that the various departments of the government are not more in sympathy with the problems confronting the farmer. Orders so far have indicated a lack of sympathy, and a lack of dependable information of the business of farming which at best is a gamble. It appears that the Food Administration is opposed to price-fixing; and yet, every few days a new price is published affecting the farmer. The reported price on tomatoes will undoubtedly reduce the acreage at least 33 percent in the Eastern States. It seems that these prices were fixed by the purchasing department of the army, which has the effect of a national price because it sets up a standard.

At the time of a conference at Washington on the tomato question county agents from New Jersey, Delaware and Maryland had proof which they presented showing that tomatoes could not be grown for the price fixed, but the officials were firm and said they would let the farmers of Colorado grow the tomatoes. It was pointed out that Cumberland County, New Jersey, grew more tomatoes last year than the whole state of Colorado, and the difference in the cost of transportation would warrant the payment of a greater price. **But one way or another, argument or no argument, proof or no proof, the price was fixed below the cost of production.**

The Farmer and Organization

It is to be hoped that all this agitation will lead to the organization of the farmer in a strong national union. At the present time the farmer is organized in a loose, haphazard way. There are dairy associations, poultry associations, breeders' associations, seed-growers' associations, crop-growers' associations, and everything imaginable, each with its worthy cause and purpose. **Without belitting any farmers' organization, it is my opinion that the absence of a strong national organization at this time is largely responsible for the misunderstandings which exist in the present emergency.** Immediate steps to tie one organization with another should be taken as a means of building up a strong representative body of practical farm men to defend the farmers' position, and I venture to prophesy that the Income Tax and price fixing will do more to bring the farmers together in a national unit than any legislation of the past generation.

8-16 Tractor With Steering Attachment

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PHILADELPHIA, PA., MARCH 23, 1918.

Draft Regulation

The change in the draft regulation asked for by General Crowder is of importance to farming communities. Under the present law district quotas are made up on the basis of total population. The result is that if the first class under the new classification act does not yield the full quota, the second and third classes must be called upon until the full number is filled. It is contended by the supporters of the new measure that this defeats the purpose of the selective classification, and that better results will be obtained if quotas are drawn on the basis of numbers in districts in the first class. Having arranged the classification in such manner as to include all of the most available men in the first class, the authorities want to be able to draw from that class to the limit before taking men from the other classes.

* * *

Seed Corn

Every farmer should read the article on page 6 of this issue on the seed corn situation. The figures given are based on a careful survey of the corn in the state. They show a very serious condition which farmers must prepare to meet before seeding time. Do not assume that your seed corn is good just because it looks good. Test it. If good seed can be secured now it should be bought, because it is certain to be very scarce and much higher in price before planting time. Prices on good seed look high now, but at present cost of labor and the value of time in the rush season, the cost of replanting will be more than the cost of good seed.

* * *

Tomato Prices

It is evident that the Army and Navy purchasing board will not secure many eastern canner tomatoes at the price announced. According to announcement of March 7, the Board would not accept tender of tomatoes at a price based higher than $21 per ton in Pennsylvania, New Jersey, Maryland and Delaware. A still lower price basis is announced for tomatoes from the northwest. There is a general protest from growers and present indications point to small acreages unless the price is raised. At a conference of growers at Washington the question of production costs was carefully considered. Estimates based on the known advances in necessary expenses for 1918 over 1917 made the cost of production $25.67 per ton for Maryland and about $25.50 per ton for New Jersey. Representative tomato growers from five counties in South Jersey met last week. After a careful analysis they estimated the cost of production for 1918 at $27 per ton. It is further reported that hundreds of acres in South Jersey and Delaware have already been contracted by local canners at $30 per ton. In view of these facts, the $21 price suggested is not only a disappointment but almost a certain guarantee that tomato acreages will be reduced.

There is confusion in some sections as to the source of the announced price. The Federal Food Administration is being blamed as a factor in determining the price. The Food Administration has had nothing to do with it, and the price, if permitted to stand, is intended to affect only such goods as are purchased for use of the army and navy. Unfortunately, however, an effort is being made by canners generally to make the price a standard. This effort deserves to fail. It will fail, or the tomato acreage will be cut to a minimum. It is unreasonable to expect growers anywhere to produce any specific crop at a certain loss.

AN APPRECIATION

Every student of agricultural affairs knows that the greatest hindrance to broad, nationwide development of American agriculture is the lack of understanding of its importance and its problems by other industrial classes. So long as increases in agricultural production were possible thru the opening of new areas of virgin land, the city populations were not concerned in their food supply, the condition under which it was produced or the class problems of those who produced it. So long as the farmers were able to supply all that was needed, why worry about the farmer or his troubles? This has been the attitude of the city population generally, fostered and continued by a complacent indifference of the city press. It is only of late that the welfare of the farmers has become a matter of city concern, and only the leaders in economic thought are yet able to understand and appreciate the real problems of the farmers. The trend of city thought indicated by the following quotation is one of the most hopeful signs of the times. It is a complete editorial from a recent issue of the Philadelphia Public Ledger. Farmers everywhere will appreciate the soundness and timeliness of its argument, and will commend its clear vision on one of the most important industries of the day. The editorial follows:

"The American people are slow to realize that their food supply is in danger. Stimulation of production on the farm is today the most urgent problem confronting the food administration and the public. And it is hopeless to look for that most essential stimulation unless the conditions on the farm shall be thoroly understood, and especially the most pressing of farm problems—that of labor. As long as the Government agencies persist in the colossal blunder of supposing that any kind of labor will meet the farmer's need, the farming industry—the first, the greatest and most necessary of human industries—will continue to be misunderstood and neglected.

"It must first of all be appreciated that the farmer, to be successful, must have qualifications and facilities on a par with those possessed by the banker, the merchant and the manufacturer; and he must be and is entitled to compensation commensurate with the service he performs. Furthermore, the requirements of farm labor are quite as important and as technical as are those of labor for other industries, and must be paid accordingly.

"For, be it remembered, the farmer can easily feed himself and he can continue to rob the soil on his own farm, as in the past. Beyond that, the farm becomes no more than a factory in which to produce a certain commodity. To do this the farmer must have machinery, material and labor. He must have capital to maintain his machinery, to keep up the fertility of the soil, to pay his hands, to pay insurance and taxes and to provide against more contingencies than confront any other business on earth. Besides all this, if he is to go on producing, he must earn enough to pay the interest on his capital. Of course, if his product will sell for enough to do all this and allow him a fair compensation besides as manager, the business will go on as usual and the public will get the farm products it requires. If not, the farmer merely works for himself, or gives up farming altogether.

"Would any sane person expect an automobile manufacturer to go on making automobiles at a loss in order that the public might have automobiles to buy or a shoemaker to go on making shoes at a loss? Most assuredly not. Yet food comes mighty near being a necessity. What is going to be done about it?"

* * *

The Strife

Time was, back in the early days of human history, when the individual's duties did not call for thought or action beyond the maintenance and defense of his own family. To this end he gave his best, crude as that best may seem in the light of the twentieth century. As time advanced it became necessary, for the same purposes, to widen his interests to include the welfare of his tribe. Thus, under stress of necessity, his conception of duty broadened; some of his old-time selfishness gave place to a degree of unselfishness and he became willing to sacrifice, suffer and die, if necessary, in the interests of his tribe. As time went on, federations of tribes were formed, and again man's conception of his duty broadened and his spiritual horizon extended. By these processes the race continued, step by step, its movement upward in civilization until the family settled down to establish permanent homes; tribes ceased to war continually with other tribes and they established governments to which each subscribed and lent his support. As the generations passed, the numbers increased and these organizations became nations—their chief purpose being to maintain and defend LIFE.

During this long and slow process of development in communal life and expression, the higher qualities and the more spiritual nature of the individual were also unfolding. He became interested in other things than mere living and the things which pertain to animal existence; he came to know himself as a sentient, spiritual being, accountable to a higher power than circumstance or even government itself. He felt the irrepressible impulse to self-expression and demanded the right to live his life and render his services according to the dictates of his own conscience. For the attainment of this right, kings have been dethroned, governments overturned, revolutions conducted, new lands spied out and all manner of suffering and sacrifice endured in order that the higher causes of humanity might be advanced and that the people might have LIBERTY.

During all this time and up to the present, life has become more and more complex. Man's needs and desires increase from generation to generation. To the necessities of life he has gradually added luxuries; to the stern duties and hard work he has added other activities in order to have enjoyment and pleasure—experiences which we find necessary to life but which were one time repressed and excluded as sinful and unworthy. In order to make the advance which has been made in these things, man has been compelled continually to sacrifice. As each life expanded and came into contact with other lives, it found less and less room for the purely selfish purpose. The individual has been slowly learning that his own highest good is advanced by the advancement of the common good, and that he can be truly happy only as others are happy. So, for his own betterment, it behooves him to join in the common cause of humanity in the PURSUIT OF HAPPINESS.

This is but a brief summary of the struggles which mankind has made to attain the "inalienable rights". But the work is not yet complete. In spite of all the suffering and sacrifice of the past, the three "rights" are still in jeopardy. The awful conflict now on hand wages about these world-old principles. Will the end of the struggle find them still further advanced; or, shall there follow a period, as has occurred in the past, in which civilization stood still, or retrograded? The answer will depend entirely upon how well each individual and every business is loyal to the common cause; upon how willingly sacrifices are made, and how loyally duty is performed. This is no time for profiteering, shirking or laying down on the job. If everyone will do his best at what his hands find to do in this crucial hour, we will find at the end that the world will have been made safe for democracy, which means that all shall have a better chance for "life, liberty and the pursuit of happiness".

HARRISBURG NOTES

Forty Millions.—According to the statements of those who should know, the revenue of the State of Pennsylvania for this year should approximate $40,000,000, some $4,000,000 better than ever known before, and next year when the direct inheritance tax and escheat of unclaimed deposits laws commence to be really effective it will probably be as large. The bulk of this immense revenue, twice the amount the commonwealth received fifteen years ago, comes from taxation of corporations, based upon value of their stock, business done and other features. One reason why it is going to reach such an imposing size this year is because of diligence in collecting taxes overdue and promptness in settling accounts of the current year. With these figures in mind it is the opinion of observers at the Capitol that substantial additions could be made to the appropriations for the common schools, for construction of main highways and aid of townships in keeping up their roads in accordance with a state standard, to the humanitarian work of the Department of Health and for advancement of agriculture in various ways, provided some change in the general system in vogue is made. As almost everyone high in politics seems to be agreed that the prohibition amendment will be ratified by the next legislature, it is likely that before the campaign progresses that candidates will be asked to make some declarations of policies in regard to grants for hospitals and homes which should be supported by home communities, and on economy in the state government.

Alliance Program.—The joint committee formed to get the State Federation of Labor and the State Grange into a working agreement whereby direct buying of foodstuffs from the farmer by men connected with unions would be facilitated seems to have embarked upon one of the most ambitious political programes outlined here in a long time. Whether it will amount to much remains to be seen, but it is a matter of comment that the value of the declaration was hurt at the time of promulgation by the sidestepping of the prohibition amendment. The list is impressive and the matters are in the main workable, but there will be many contending elements in Pennsylvania this fall and when the next legislature meets.

The Legislative Outlook.—This is the time for filing nominating petitions at the Capitol and from what is heard there will be many new contenders in the field, which, because of the involved political situation, will mean new faces in the legislature. In all probability there will be much voting in blocks in the cities, especially by people engaged in the industries, a fact which might commend itself to people in rural communities. The city dwellers are going to ask for enlargement of municipal powers in many directions and for more state appropriations for public works. The whole trend of political talk in cities is in that direction.

Rulings on Dog Laws. — A new series of rulings on the dog license code has been made, the most important being that dogs running at large on farms of their owners are not to be considered as running at large in a legal sense. In other words, if on the farm of the owner, they are the same as in his barnyard. Other rulings are that borough ordinances forbidding shooting of firearms within limits shall not prevent constables or officers shooting unlicensed dogs.

Boys on the Farm.—The movement to enroll the boys of the state in a working reserve with the idea of placing them on the farm has been launched by the national and state authorities with a proclamation by the governor and an earnest effort on the part of the Public Safety Committee. The idea is to get at least 45,000 boys and twice that number of men for work on farms and next Sunday is to be "Farm Labor Sunday", to stimulate interest. John A. McSparran, master of the State Grange, has declined to serve on the committee and is opposed to the general plan. He believes that the men should be returned from camps and from unnecessary industries to work on farms.

500 Want Tractors.—The State Department of Agriculture has received requests for the services of state tractors on 500 farms. The plan for the farmers is now outlined and schedules are being made up. The difficulty has been to get trained men to run them.

More Curb Markets.—Plans are being made for the organization of curb markets, free of licenses, in twenty cities of the state. In some of the larger boroughs the plan is also to be taken up. Another idea which is being worked out is to have truck services which will buy direct from farmers for communities, thus doing away with the necessity for farmers going to market.—Hamilton, Harrisburg, March 18, 1918.

NEW YORK LETTER

Dr. Schurman Honored.—Dr. Jacob Gould Schurman is now to assume charge of all food conservation work of the state. Heretofore, he has been in charge of up-state activities only, but is now taking charge of the work of New York City. Prof. H. E. Babcock is his active assistant, and the work will consist mostly of educational and instructive work along lines of economy.

Conservation in the Canning Industry.—War has led to constructive thinking in the canning trade, teaching it to cater to the buyer's pocketbook and bodily needs, rather than to his eye. Inferior fruits have heretofore been rejected in packing, using only uniform sizes, wasting much other food equally nutritious and valuable. New York canners will hereafter conserve such products, condensing all juices to a greater degree of richness.

Peach Prospcts Bad.—It is said that the New York peach belt will take its greatest slump in production ever known this year—a result of the severe winter. There may be a partial crop in orchards fringing on Lake Ontario, but the west-central section crop will be a complete failure, it is expected.

Other State Labor Helps for the Farmer.—The state is going ahead with other means of getting help for the farms. W. L. Clement, of the state employment bureau, will canvass the city for farm laborers, and representatives of the State Bureau of Production will visit all the villages of the state, appointing local committees to take up the work of signing up volunteer farm laborers. The state has also appropriated $50,000 for the creation of a State Boys' Working Reserve, to be affiliated with the National Boys' Working Reserve, and local branches will at once be established thruout the entire state.

Public Market Reopens.—Elmira's public market will re-open this week for Wednesdays and Saturdays from 6 to 11 A. M., with O. M. Wixon, market master in charge. Few markets of the state have been kept open all winter; that of the North Side of Syracuse being an exception.

Betts Withdraws.—Chas. H. Betts, secretary of the Farms and Markets Council announces his resignation to his office, as demanded by various farm organizations in the fight against political appointments to agricultural positions and will confine his attention to the secretaryship of the state food commission. This is another victory for the new state federation of agriculture.

Struggle Over Farms and Market Council Continues.—The governor, after withdrawing all his appointments to the farm council as demanded by the new state federation of agriculture, has announced a full quota of names which includes four re-appointments. The legislature took exception to his neglect to give them a chance to make at least one appointment, and has asked three former judges of the Court of Appeals as to their rights in the case. But they finally surrendered and confirmed his appointments. John Mitchell was named as chairman for a term of nine years. The personnel of the new council is more satisfactory to farmers than was the first selection. At a meeting of the new federation of agriculture held in Poughkeepsie, a resolution was adopted urging that the State Department of Agriculture be reorganized and governed by a board of control composed of farmers approved by the agricultural interests of the state.

Big Drop in Markets.—Potatoes are now only $1.15 per 100 lbs., graded, and cabbage $15 a ton with very little demand for the latter. Many farmers are feeding out cabbage held in storage rather than wait for future, indefinite shipping privileges. The opening of spring work is also shutting off further shipments, as the past mild days permit of hauling of manure and other fertilizer.

Repeal of School Law.—The Martin bill calling for a repeal of the township school law was favorably reported this week by the Assembly Education Committee.—F.

NEW JERSEY FARM NOTES

Potato Prospects.—Reports from South Jersey indicate that labor-saving machinery is to play a prominent part in the production of the early white potato crop in that section of the state. Because of the increased cost of planting and the prospects of better prices in some other crops, it was thought for a time there would be a decreased acreage of this product. It is reported that some of the Salem and Cumberland County growers estimate that it will cost more than $100 an acre to plant potatoes this season, largely due to the scarcity and high price of potash fertilizers. Seed is said to be cheaper and more plentiful than a year ago, however. Some early white potatoes have already been planted.

Crates Needed. — Assemblyman Fooder, of Gloucester County, has been importuning Railroad Director McAdoo and United States Senator Frelinghuysen to have shipped the carloads of crates which are badly needed. The farmers of this section are complaining because the orders for crates which should have been delivered along the Salem branch last fall have not arrived. Up to a recent date, only one carload had been received since fall, altho orders were in for thirty-four loads to be delivered thru the winter when crate makers are busy making the carriers for use by the farmers in shipping their spring products.

Farm Census Completed. — Eight thousand of the older school boys of the state have just completed a farm census under the supervision of the State Department of Public Instruction. The work was done at the request of the United States Department of Agriculture and was performed mostly by boys in the rural sections. The information gathered related to the amount of hired labor, amount and kind of live stock, crops, fruit, seed, etc., at present on the farms in New Jersey and the amount that will be needed for the coming season. It is to be compiled at the State Agricultural College, New Brunswick, and will be disseminated for the benefit of the farmers in securing labor and in the purchase of seed, live stock, etc.

Enrollment of Farm Labor.—This has been "Enrollment Week" in New Jersey and efforts have been put forth to enlist thousands of young men between the ages of 16 and 21 for patriotic service on the farms of the state. The movement is part of that which is practically countrywide and fostered by the Federal Department of Labor. Governor Edge is advised of the placing of a practical farmer in the main employment agency office of the department at Newark. This official will select competent, agricultural laborers for farms which need them. If the government decides to use drafted men on the farms, New Jersey will be ready to engage them, as plans have been made for this contingency.

Agricultural Notes.—A series of dairy meetings were held on farms in Sussex County during the past week by the Dairymen's League, co-operating with the County Board of Agriculture. The Sussex County Farm Bureau has sent a warning to all planters to test seed corn this season. Scientific examination of samples shows that much of the corn grown in the county germinates very poorly, which indicates a serious seed situation, as to plant without testing may result in a very poor yield. A recent sale of thirteen cows on a farm in the county brought prices of close to $100 each for Holsteins and Jerseys.

It is reported that the Campbell soup concern of Camden is contracting for tomatoes during August at $32 a ton, or 55 cents a basket; and during September and October $30 a ton.

A report by the State Department of Health shows that on February 28, 1917, there were 13,040 lbs. of milk and milk products held in cold storage in New Jersey, and on the same date this year 262,296 lbs.—L.

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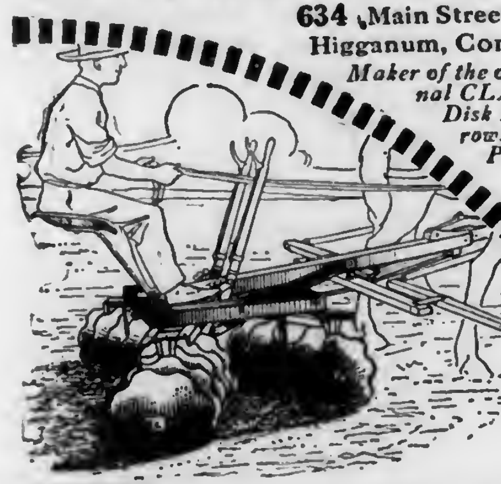

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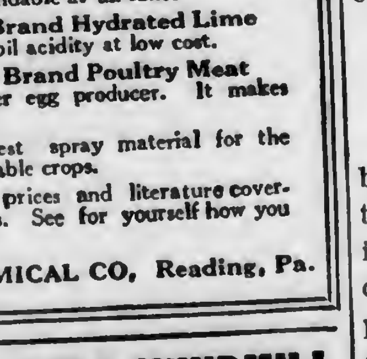

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SEED CORN SITUATION

Permit me to draw attention to the most serious seed corn situation that Pennsylvania has ever experienced. Never, in Pennsylvania, has the vitality of the corn from which the seed to be planted must be selected been so low as it is this year. Reports show this to be also true of the neighboring states from which Pennsylvania farmers in years past have drawn some of the corn used for seed.

In a state-wide survey now being conducted by the Pennsylvania State College to determine the vitality, amounts, and location of good seed corn, approximately two thousand samples have been tested for germination. The results of these tests show that less than 10 percent of the crib corn will germinate 90 percent and above, and only a little more than 6 percent of the samples tested germinate between 80 and 90 percent. Considerably less than half of the samples germinated less than 50 percent, while one sample out of every eight failed to sprout a single grain.

One of the interesting facts brought out by the test is that practically every crib sample giving a high percentage of germination came from corn which matured considerably earlier than the average in the community. About one-fourth of the samples received were taken from the corn selected in the fall for seed and stored in the various ways which usually, heretofore, had proved to be successful.

Less than half of the samples gave a germination of 90 percent and above. One in twelve tested between 80 and 90 percent. One out of every five, less than 50 percent, and one out of every fifteen, failed to sprout a single grain. Another outstanding fact shown by the test is that seed selected late last fall and stored in outbuildings with heat gives a germination of 90 percent and over. — Nickolas Schmitz, in charge of Agronomy Extension.

STUMPS NEAR BUILDINGS

A good many farmers are afraid to blast out stumps if they are near their houses, barns or other outbuildings. I do not blame them for being cautious because unless they are experienced in estimating and placing charges under stumps, they are very likely to damage their buildings.

I always advise an inexperienced blaster having stumping to do on a lot upon which buildings are located to start on the stumps furthest away from the buildings. By close observation and a little experimenting, on these more distant subjects, they become proficient in estimating their charges, also in placing them under the stumps and by the time they are ready to operate upon those nearer the buildings, they are able to determine just about how much dynamite to use merely to turn the stump out of the ground without throwing it.

The accompanying picture shows a number of stumps which I recently blasted out of the yard of a neighboring farm house. It will be noted that many of them were very near the house and barn. Eight of them, in fact, were within six feet of the house and the smallest of these eight stumps was 24 inches in diameter; the largest measured about 42 inches. These were taken out without even breaking a pane of glass.

In all there were about forty stumps in the yard which were taken out with 80 pounds of dynamite. The average, therefore, was about 2 pounds of dynamite per stump. The average size of the stumps was about 24 inches across. It would have taken more had the stumps been green or in light loose soil.

The secret of successful stump blasting is loading the charges deep in the ground under the stumps and tamping hard with moist clay or loam. It is also important to get the charges properly centered under the stump or if distributed charges are used to get a main lifting charge properly centered under the stump and some auxiliary cutting and lifting charges out under the main roots. Of course, distributed charges must be fired with a blasting machine so as to have every one exploded simultaneously.—Wm. Welch, New York.

Stumps Near Buildings

PREVENT OAT SMUT

Formaldehyde is the common material used to treat oats for prevention of smut. A pint of 40-percent formaldehyde, known commercially as formalin, to 40 gallons of water will treat 40 to 45 bushels of grain.

A sprinkling can is convenient to moisten the oats spread out on a light floor or canvas. By shoveling over the grain the entire mass can be thoroly moistened with the solution. The heap is then covered with a blanket for about three or four hours or over night and later spread to dry.

The Ohio Experiment Station recommends the liberal use of formalin to prevent oat smut, as the treatment has caused material increases in crop yields. It cautions farmers to use the same solution freely to disinfect bags and drills used in seeding the oats.

"Go back to the simple life," says Herbert Hoover, "be content with a simple food, simple pleasures, simple clothes. Work hard, pray hard, play hard. Work, eat, recreate, and sleep. Do it all courageously. We have a victory to win."

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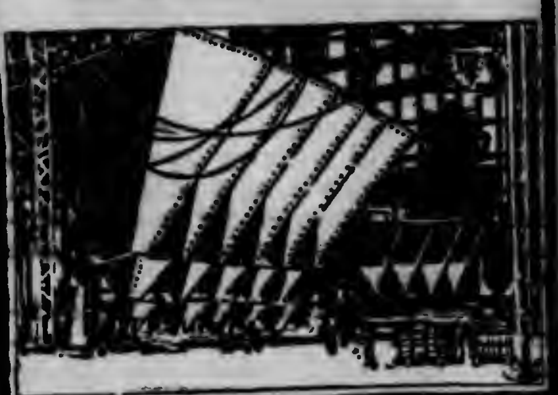

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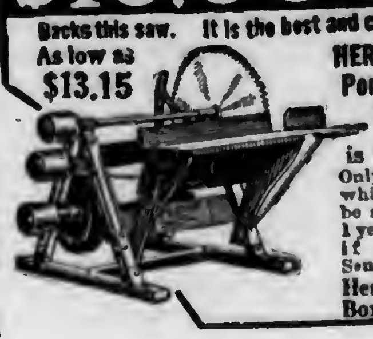

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Commercial Peach Growing

The Ins and Outs of the Business

By D. H. WATTS, CLEARFIELD COUNTY, PA.

It is interesting to talk to peach rowers having varied soil and cliatic conditions as to their faith in he peach crop of 1918. One man ill tell us that he expects peaches ext season despite the fact that ercury has hovered around 20 deees below zero in his orchard night fter night; he explains that he as fed his trees on stable manure ntil the trees have warm buds of ze to endure low temperatures. Anther grower is just as sure of the munity from frost injury of his each buds as he declares he has voided yard manure and has taken recaution to apply twice the amount phosphorus about his trees as they an use in a dry season. Another ld me he was quite sure his buds ere safe for he depends on thoro illage of the soil without any stimuent in way of fertilizer in which he laimed a perfect bud was developed, aving but little sap circulation and ble to withstand low temperatures, d yet he said that when the first arm breath of spring comes these ttle buds will quickly spring into ormal bloom. A fruit grower of orthern Pennsylvania said he had eaches four seasons in succession nd did not know why.

In a study of the factors in this st man's success, and I call four uccessive crops in his climate a great uccess, I found several conditions hat eliminate much of the risk that o with the business. First, the orhard site was well-nigh perfect, beng situated on a high knoll affording erfect air drainage in all directions, ith water drainage equally perfect. ere was a soil, too, most favorable this fruit, a deep sandy, gravelly am with subsoil more firm and filled ith mineral elements. Enough grav- and larger stone were present to sure great heat-holding capacity om sun to sun. The owner of this rchard is known as a tillage crank, stands for tillage and moisture onservation.

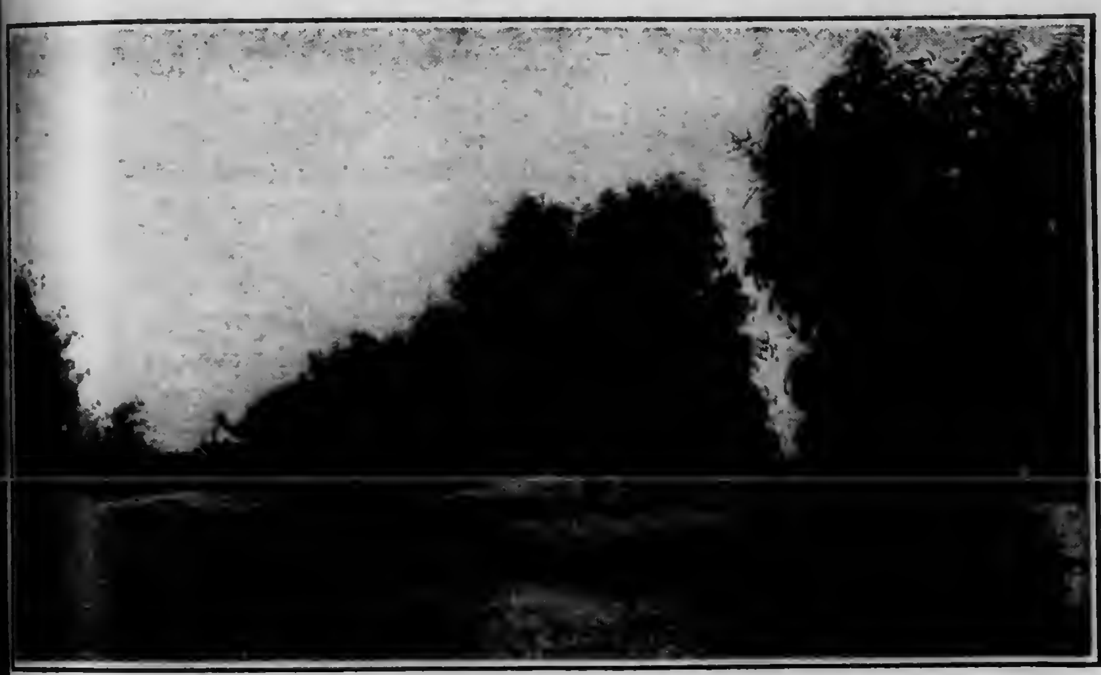
This latter orchard was not plant- until the owner had studied the havior of varieties in his own comunity, and especially with reference to hardiness of wood and bud d he planted no others, no matr how flattering the word picture beauty and luscious quality. He as not looking for a chance crop, t for regular crops. The Champion ands high in his estimation and is lly pitted if the knife is cleverly andled. A number of cling peaches e grown in this orchard, the Greensro, Carman and Mountain Rose being use.

In the experience of the writer the following cling varieties are valued in the order named for severe climatic conditions: Mountain Rose, Emma, Carman, Triumph, Greensboro. The Emma is of good appearance and very good quality, and in some seasons is almost free. The Mountain Rose is a good bearer, hardy in bud and a good looker, always finding a ready market when put up in small baskets for retail trade. This last variety has shown remarkable adaptation to our sand and shale hills and has many times been the only variety to cheer the hopes of the amateur planter.

In selecting a site for an orchard, air drainage is of vast importance. With the peach it is the first consideration, as no variety, no matter what the cultural method or care, can withstand the environment of the damp, cold, low lands. This does not mean that the planter must select the uppermost pinnacle of the lofty mountain, or the steep and rough hillside, but I would select an altitude that is high compared with surrounding lands. Here, the cold damp air of the night may drain down one or more slopes to a lower level. An elevation of 30 to 50 feet is often sufficient to save buds from frost damage. It does sometimes happen that fog will form in valleys in the short hours of the night and give protection but this can not be relied upon. The valley of a small stream is the worst site of all.

In starting a peach orchard it has been my method to grow some intercrop for two years—some early truck crop that will be out of the way by July 15 to 20. Then some cover crop, buckwheat, rye, turnips, clover, is sown to make organic material to cut up on the following year's tillage. This enriches the soil and is a lasting aid to moisture conservation. Rye and vetch make a good combination, using one bushel of rye and 12 to 15 quarts of vetch per acre, sowing with a drill or by broadcasting and giving a light stroke with the broad smoothing harrow.

When the young trees have reached bearing age, tillage should begin early in the spring. For this work we use a cutaway, disk harrow and the common spring-tooth harrow, and continue to harrow after each rain until July 15 if no crop is forming, but continue a week or two later if a crop of fruit is developing, in which event a liberal moisture supply is desirable. Of all stages of develop-



Five-year-old Peach Orchard Under Clean Cultivation

FRUIT TREES

It Pays to Buy Good Ones

Why invest your money and time in planting trees of a questionable nature, taking up good producing land, when for a few pennies more, good, guaranteed, true-to-name stock can be had? Does it pay to wait eight to ten years and then find that your trees are anything but what they were supposed to be? Figure it out for yourself from any angle and you will come to the conclusion that it pays in the end to buy guaranteed stock, free from disease.

Barr's Fruit Trees

are grown right in the eastern climate—Lancaster County, Pa., the richest county in the U. S. Are acclimated and grown entirely to eastern conditions. Every tree is guaranteed free from disease and true to name. Our Twenty-Fifth Anniversary Catalog (free) describes our assortment of fruit and ornamental trees, shrubs roses, etc.

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will give a maximum amount of heat for the least amount of fuel—eliminates drudgery—Drafts are easily controlled—and grates shake and dump easily. Write to-day for booklet No. 10

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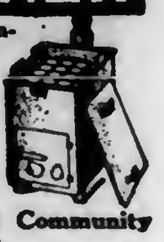

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Write ***to-day*** for our catalog, or, better still, **order a Le Roy Plow NOW** and get busy with it in Plow season.

Cambridge and **Lovejoy** Plows and Extras furnished.

For 15 cents in Stamps, we will mail you **free** a Complete up-to-date 7x10 inches **Farmers** Yearly **Record Book** to keep your farm accounts in legal form.

LE ROY PLOW CO., Le Roy, N. Y.

ment, this is the time it pays to give them plenty to drink.

Trees intended for spring planting should be ordered at once from a reputable man or company, stating clearly what is wanted in variety, size and general quality and it is my rule to state that there shall be no substitution without permission and I also state that I am keeping a copy of my order for future reference. When the trees come I carefully examine them and, if they appear true to my order in all respects, we plant and at once make a chart on a page in our orchard record book. Here is kept a clear history of the trees, where and when purchased, from whom, and the guarantee if any. Then comes the subsequent tabulated history of fertiliser and tillage treatment followed annually.—D. H. Watts.

Hot Beds and Cold Frames for Garden Plants

A hot-bed or cold frame is essential in the successful operation of the home garden. It makes possible the production of certain vegetables thruout the winter as well as the starting of early plants in the spring to be transplanted, when proper weather conditions permit, into the open garden.

Location

The frame should be located in that part of the garden receiving the most sunlight, and should face the east or southeast. Many gardeners face their frames directly towards the south; by so doing, the plants planted next to the bottom board will receive very little sunlight and will therefore remain small and stunted. If the frames face the east or southeast there will be a more even distribution of the sun's rays, and consequently much better results will be obtained. A windbreak protecting the frame from the north and west winds will greatly increase the warmth and efficiency of the frame.

Kinds and Construction

Many home gardeners become confused with the terms "hot-bed" and "cold frame". Hot-beds are of two types; namely, the permanent and the temporary. They receive a certain amount of heat from beneath by the fermentation of fresh horse manure, and may be operated from three to five weeks before a cold frame, especially where more heat is necessary to start the germination of the seeds planted. A cold frame does not require any heat from underneath but depends entirely upon the sun for its heat.

The construction of these frames is very simple and inexpensive. When a permanent frame is constructed the initial cost is greater, however, after installation the upkeep is very small. The sashes are the most expensive item but if properly cared for will last many years. Old boards may be used for the sides and framework as long as they are sound and will keep out the cold.

Preparation and Care

Hot Beds.—After the fresh manure has started to heat it should be placed in the frames and packed down; if it is dry, water should be added so that fermentation will take place. The six inches of soil to be used should be prepared beforehand and should contain quite a good deal of sand, together with well-rotted manure.

Cold Frames. — After the frame has been constructed, a generous application of well-rotted or composted manure should be spaded under, using about one wheel barrow load to the sash. It should be thoroly mixed with the soil by spading at least 8 inches deep and the ground finely pulverized by the use of the rake.

For the maturing of plants in the frames, a rather rich soil is desirable; however, for the growing of plants for transplanting, a rich soil is not desirable. It is better for the plants in the frames to grow slowly and to be stalky than to grow fast and become spindly. When transplanted into the open the stalky plants will grow right along while the spindly plants will wilt and are liable to receive a check in growth.

Watering and Ventilating

After the seeds are sown or the plants are set, water may be applied if the weather is not too cold. Many times it would be better to sow the seed or transplant the young plants in moist soil, especially if the soil is of a more or less heavy texture, and then not water until necessary. Water in the morning so as to allow the plants to dry before night. Never allow the plants to go into the night wet, to do so will encourage disease. When watering water thoroly and then not so frequently.

Ventilate whenever the weather will permit. A six-inch piece of a plastering lath makes a convenient ventilating stick; three dimensions are possible, namely, ½ inch, 1¾ inches and 6 inches, to which height the sash may be raised, all depending upon the weather conditions. On sunshiny days the sash should be closed about three o'clock in the afternoon so as to retain as much as possible the warmth received from the sun. If very cold weather follows, a covering over the sash with old carpets will keep out much cold and probably save the plants from freezing.

Possibilities

The possibilities of the garden frame are many. In the fall, crops like onions, lettuce, radishes, spinach, leeks, parsley and carrots may be planted in the frame and if properly cared for and protected may be had in a fresh state thruout the winter. The radishes will mature in six to seven weeks and the other crops will stand quite a good freeze.

In the spring, the seed of these crops may be sown under glass and may be matured much in advance of out door sowings. With plants such as tomatoes, egg plants, peppers, sweet potatoes, besides many flowering annuals as the asters, stocks, etc., it is necessary to start the seed under glass for these crops to be successful.

VARIETIES OF FRUIT FOR PENNSYLVANIA

The present is not a desirable time for large commercial planting of orchards. Such plantings are now practically suspended thruout the nation. Returns are not quick enough for present requirements. Money or energy which might be expended in this direction should either be put into better care of the orchards already in bearing or else should be devoted to annual crops.

The only orchard plantings that should be considered now are those for home use and possibly moderate-sized commercial plantings near a good market where conditions are especially favorable for intercrops and fillers. Peaches and cherries are most suitable for the latter purpose, as they give returns by the third or fourth year.

Home plantings are especially desirable for all fruit which can be allowed to become fully ripe on the tree or plant. This is the way to secure the highest quality in fruits of this class. Some of these fruits are available to anyone who has a plot of ground twenty feet square or more.

In the home orchard, dessert quality should receive chief consideration. From this viewpoint, the following varieties are suggested and named approximately in order of ripening.

Varieties for Home Use or Local Market

Selection or substitutions may be made to fit the locality concerned.

Apples.—Early Harvest, Primate, Benoni, Summer Pearmain, Summer Rambo, Maiden Blush, McIntosh, Smokehouse, Jonathan, Grimes, Northern Spy, Stayman Winesap, Rome Beauty, and Winesap. For early cooking purposes, Yellow Transparent, Oldenburg, and Wealthy may well be included.

Peaches. — Mayflower, St. John, Carman or Lola, Hiley; Champion, Belle, Elberta, J H Hale (for trial), Crosby, Fox, and Stevens.

Pears.—Wilder, Clapp Favorite, Bartlett, Seckel, Sheldon, Bosc, Lawrence, and Winter Nelis.

Plums.—Red June, Lombard, Bradshaw, Washington, or Reine Claude, Monarch, Imperial Epineuse, Italian Prune, Bavay, and French Damson.

Cherries. — Sour: Montmorency, and English Morello. Sweet: Yellow Spanish, Napoleon, Schmidt, Windsor, and Nelson.

Grapes.—Black: Campbell Early, Worden, Concord and Herbert or Wilder. White: Winchell, Diamond, and Niagara. Red: Massasoit, Lindley, Brighton, Delaware, Salem and Catawba.

Raspberries.—Black: Pearl, Plum Farmer, Cumberland and Gregg. Red: Empire, King, and Cuthbert. Purple: Columbian, and Royal.

Blackberries.—Early Harvest, Eldorado, and Ward.

Strawberries.—Premier, Early Ozark, Wm. Belt, Chesapeake, Marshall, Sample (imperfect), Stevens or Gandy, and Kellogg Prize. Everbearing Varieties: Peerless, and Progressive.

Gooseberries.—Poorman, Chautauqua, and Industry.

Currants.—Red: Cherry, Perfection, Red Giant, and Wilder. White: White Grape.—J. P. Stewart, State College, Pa.

New York led all states in cabbage production last year with nearly 250,000 tons, which was almost half the combined cabbage crops of the next eight states. Wisconsin, which came second in cabbage production, raised a little less than 100,000 tons.

SHOULD BE IN EVERY HOME

I get several papers but consider that Pennsylvania Farmer is the leading farm paper. It should be in the home of every farmer. Hope your mailing list will double in the year 1918.—Forrest Bratton, Newton Hamilton, Pa.

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"Food will win the war." Plant larger acreage and produce the food! Use Planet Jr implements to take care of the increased acreage.

With Planet Jr implements you can do the work of 3 to 6 men using ordinary tools. They lighten labor, save time, and cultivate so thoroughly you can raise bigger crops than ever before. Built strong, yet light enough for woman or boy to use. They last a lifetime. Fully guaranteed.

No. 25 Planet Jr Combined Hill and Drill Seeder, Double and Single Wheel-Hoe, Cultivator and Plow sows all garden seeds from smallest up to peas and beans, in hills or in drills, rolls down and marks next row at one passage, and enables you to cultivate up to two acres a day all through the season. A double and single wheel-hoe in one. Straddles crops till 20 inches high, then works between them. Steel frame and 14-inch steel wheels. A splendid combination for the family garden, onion-grower, or large gardener.

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2 Medium size 5 to 6 ft.	.25	2.00	15.00
Sweet & sour cherries xxx 6 to 7 ft.	.35	3.00	24.00
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Peaches 1 yr. 5 to 6 ft.	.20	1.80	12.00
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American Mutual Seed Co., Dept. 930 Chicago, Illinois

PIPE second hand. Large stock all sizes furnished with new threads & couplings. Prompt shipment. B. F. Griffith, 416 Moyer St. Phila.

ONE MILLION California Privet and Asparagus plants. Millions of trees and shrubs, etc. Healthy; true to name; quality high; price low. New Planters Price List ready.
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Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECIDE", and the other with Lime-Sulfur for three years, everything else being equal. If at the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECIDE" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid us for the "SCALECIDE".

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POTATOES, while a very large item of food in America, have never been fully appreciated. Potatoes contain sugar, starch, alcohol, nitrogen and mineral matter, all of which go to make them a most necessary article of food. Germany is holding the world by reason of her potato crop, which is one of the main sources of supply both for her people and her animals.

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Special tar felt discs which any boy can slip on the stem directly after planting to prevent the maggot fly from laying its eggs.

Big growers say they can't grow cabbage without them. Write for copies of their letters. Full information and wholesale price.

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There's a Brown's Auto-Spray that will suit you. 40 styles—hand, traction and power. All have non-clog nozzles—save endless trouble. Used by Experiment Stations, and over 450,000 farmers, gardeners, etc. Send today for catalog and Spraying Guide—both *free*.

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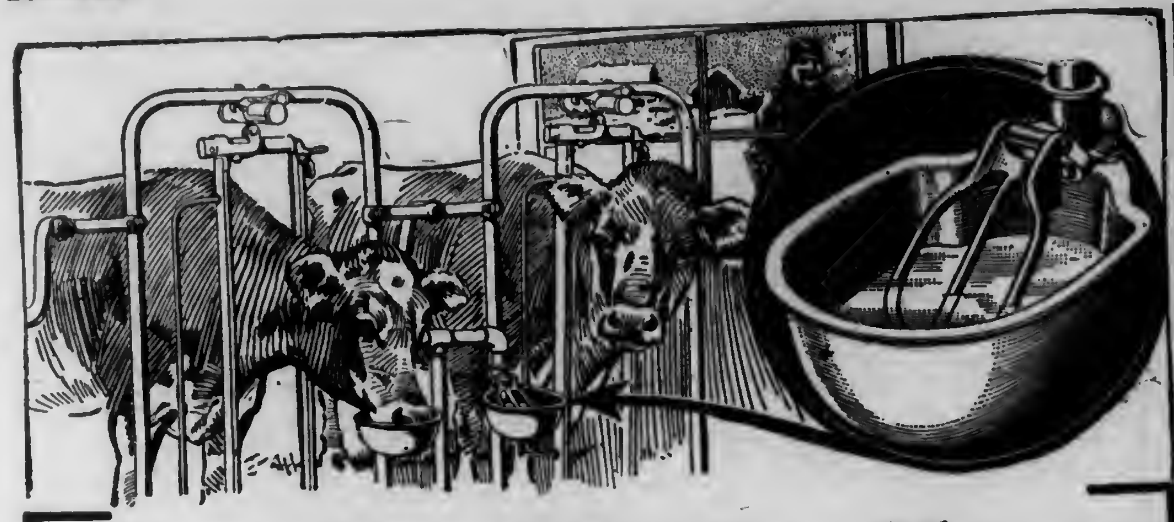

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If you want summer milk quantity at winter prices, it will pay you to find out about STAR Water Bowls.

Milk is 90 percent water. The yield slumps in winter because the animals don't get enough to drink. Even when the water in outside tanks is warmed, you know some animals won't drink a drop while they're fighting a blizzard in an open yard. And you can't blame them.

But Star Water Bowls bring it right to the stall—an abundant supply of palatable water—and the cow drinks as much as she does in summer. She will take a mouthful of hay or feed and then a drink of water. That's why Winter milk production goes up when STAR Water Bowls go in. This system prevents one tubercular cow from infecting the rest of the herd. STAR Water Bowls are individual and sanitary. Water comes and goes separately from each bowl. The sick animal can't contaminate the water used by healthy ones.

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Don't buy any kind of barn equipment until you investigate STAR Goods and the patented features found only in this line. Unit System Stalls assembled at the factory and with sanitary Arch Construction. The STAR Adjuster—the STAR Curb Clamp. The strong giant STAR Stanchion easily adjustable and with the One Hand Lock. Woodlined and Automatic Sure-Stop. STAR Litter Carrier Outfits meet every need.

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Cost and Weight of Silage

Two Important Questions Answered

S. I. BECHDEL, PENNA.

Not infrequently it happens that a farmer desires to sell silage to a neighbor. Two important questions usually arise in such instances: First, what is a fair price per ton; and second, how shall the amount of silage in the whole or a part of the silo be computed.

Price Per Ton

In answer to the first question, the scheme of determining the cost of producing silage is sometimes used to arrive at a suitable figure. This is usually not considered a very satisfactory method since the different items entering into the cost, such as rent of land, yield of forage per acre, price of labor, storage cost, etc., vary widely and so make the problem difficult.

Data from five different experiment stations on the cost of producing silage in normal times, before the outbreak of the war, may be used as a basis for determining the value of silage at the present time. This data shows that it cost from a little less than $3 to $3.65 per ton to produce silage. Taking $3.40 as the average price per ton, the present value may be computed as follows:

The grain part of the silage, or corn, has increased about 100 percent in value since the above value of silage was determined. It is generally considered that on the average, 63 percent of the nutrient value of the whole stalk of corn is in the grain. Assuming that this relative percentage is unchanged when the corn is put thru the ensiloing process, it would seem fair to estimate the present value of the silage from the nutrient standpoint. Increasing 63 percent of $3.40 by 100 percent of itself would give a result of $4.28.

To this amount must be added the value of the stover or stalk part of the silage which contains on the average 37 percent of the total nutrients of the stalk. Hays and roughages in general have made a corresponding increase in value of about 50 percent. Taking 37 percent of $3.40 and increasing it by 50 percent of itself would give a result of $1.89. This added to $4.28 would give a total of $6.17, or the price per ton for silage at the present time. In localities where silage had a value of $3.25 to $3.50 per ton three or four years ago, a price of $6.25 per ton would now seem about right in view of the above figures.

In making up the cost records in the various cow-test associations in Pennsylvania the rule for determining the value of silage per ton is to take one-third the value of mixed hay at the barn. If, for example, mixed hay should have a value of $18.75, silage should have a value of $6.25 per ton.

Since silage is a perishable feedstuff, it is unmarketable and since it really has no market value, the purchaser is usually obliged to draw the material himself from day to day since the silage can only be removed in small quantities as needed for feeding. Making frequent trips back and forth is an added expense to the purchaser, but he can usually well afford this extra cost rather than do without silage which means so much in the dairy ration. It should be remembered in this connection that when succulent, palatable silage is used in the ration, instead of all dry feeds, cows usually consume a heavier ration and hence have more nutrients available for milk production after the maintenance requirements of the body have been met.

Weight of Silage

In answer to the second question it may be said that where the whole content of the silo is sold it is a simple matter to compute the tonnage. If the silo is full, the capacity may be taken as the number of tons to charge for in a transaction. However, the owner may not know the exact capacity of the silo, and in addition to this, the chances are that he is in error even if he thinks he does, as will be seen later on in this discussion.

Until recently, the only data giving the weight of silage per cubic foot was that of Prof. King. This data gives mean weights per cubic foot for silos of varying depths. In these figures the mean weight for the first 10 feet of silage from the top is 26.1 lbs. per cubic foot. Similarly, mean weights for depths of 15 feet, 20 feet, 25 feet, 30 feet and 35 feet from the top are given as 29.8 lbs., 33.3 lbs., 36.5 lbs., 39.6 lbs. and 42.3 lbs. respectively, with proportionate weights for depths between those listed here.

To compute the weight of silage it is first necessary to determine the volume of space in cubic feet it occupies in the silo. To do this, one-half the inside diameter of the silo is multiplied by itself and this product again by 3.1416. This result is then multiplied by the depth of the silage and then by the proper mean weight per cubic foot for silage of the same depth.

Using the above figures, suppose it were desired to compute the contents of a silo 13 feet in diameter with silage in it with a depth of 35 feet. The calculation would be as follows: One-half the diameter, 6½ feet, times 6½ feet equals 41.25. The 41.25 times 3.1416 times the depth, 35 feet, equals 4535.7 cubic feet. This result multiplied by the mean weight per cubic foot, 42.3 lbs. when the silage has a depth of 35 feet, equals 191,860 lbs. or 95.9 tons.

Recent experimental work at the Nebraska Station, as reported in Circular No. 1, tends to show that King's weights per cubic foot are from 11 to 13 percent too high. To bring out this fact, data was secured by carefully weighing the silage into different silos for six years successively. The table of mean weights given in the Circular for various depths of silage are as follows: 10 ft., 22.6 lbs.; 15 ft., 25.9 lbs.; 20 ft., 29 lbs.; 25 ft., 31.8 lbs.; 30 ft., 34.8 lbs.; 35 ft., 36.8 lbs.; 40 ft., 38.8 lbs.; 45 ft., 40.7 lbs. and 50 ft., 42.5 lbs., with proportionate weights in between those here listed.

Taking the Nebraska weight per cubic foot for silage 35 feet in depth 36.8 lbs., and applying it in the above problem, the contents of the silo

is seen to be 83.9 tons instead of 95.9 tons, the result that is obtained when using King's figures.

Since it has long been known that King's figures did not hold out very well in many instances, it would certainly be advisable to use the Nebraska data which seems to have been proved fairly correct. It is suggested that it would be a good plan for silo owners to compute the capacities of their silos with the Nebraska weights since practically all silo capacitie up to the present time have been computed with King's figures.

Where one uses the Nebraska data the silage should be in a normal condition when put into the silo; the silo should be filled without delay, allowed to settle from 12 to 24 hours and then refilled and while filling, two men should be kept in the silo. The depth of the silage should be determined at the end of the second filling.

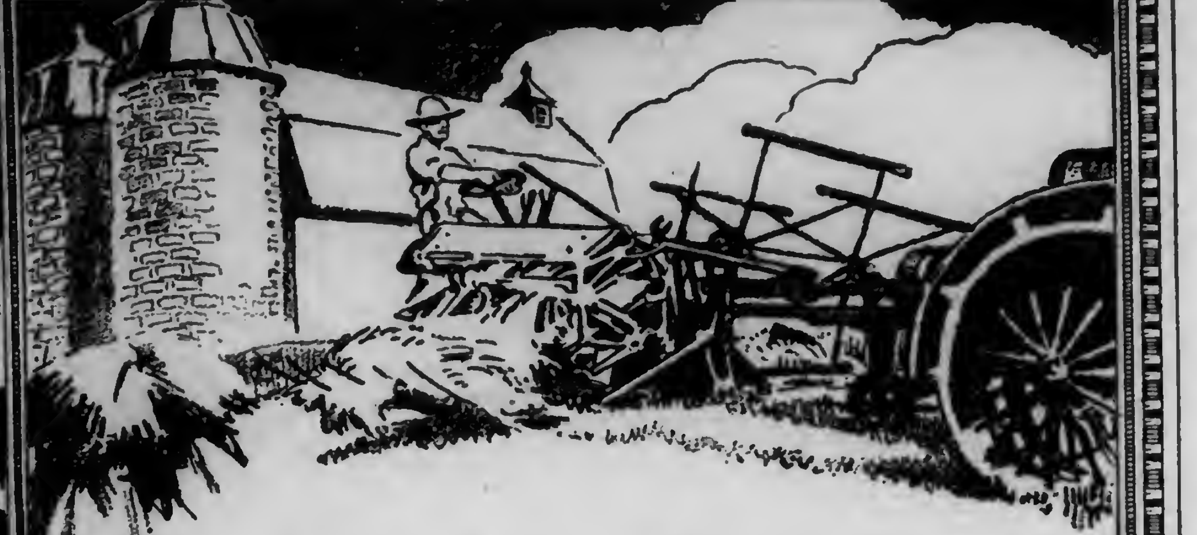
Weight at Varying Depths

In many instances where silage is sold, it is desired to dispose of only a part of the silo content. For example, suppose the silo in the above problem, with dimensions 13x35 ft., was full of normal silage when feeding began; that feeding was continued until the first 15 feet of depth was removed; and that it was then desired to sell the remaining 20 feet of silage. It is well known that the silage in the lower parts of the silo is packed much tighter and weighs from one to three times as much per cubic foot as it does in the upper parts of the silo, depending on the depth of the silage. Hence, there is more than 20/35 of the total tonnage of the silo in the last 20 feet. To take the total cubic feet of volume or silage storage space, multiply it by the mean weight per cubic foot for a 35-foot silo, that is by 36.8 lbs., would give a result of 47.7 tons, one that is entirely too low.

A very simple way of solving this and similar problems would be to compute first the amount that is fed off from the top of the silo. The result of this computation may then be subtracted from the total number of tons at the beginning in order to determine the correct number of tons in the last twenty feet in the silo.

Returning again to the above problem, the volume of silo space would be found to be 1943.85 cubic feet for the first 15 feet of depth Multiplying 1943.85 by the proper mean weight per cubic foot (25.9 lbs. as per the Nebraska data) gives a result of 25.2 tons. Substracting this amount from 83.9 tons, or the amount of silage in the silo when feeding begun, as calculated above, would give a result of 58.7 tons, the correct amount in the bottom 20 feet of the silo.

The following general rule may then be followed where it is desired to compute the number of tons in part of the silo: 1. If the silage is sold from the top part of the silo, simply compute the tonnage using the mean weight per cubic foot for whatever depth of silage is taken out from the top surface. 2. If from the lower part of the silo, compute first the number of tons in the silo at the time feeding first began, or the original silo content. Then calculate the amount that is fed off from the top surface. Subtract this result from the original number of tons in the silo, and the result will be the proper number of tons to charge for in making a sale of silage.



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Many farmers, however, are facing these conditions. Shortage of labor makes them hesitate to cultivate larger acreage than last year for fear of not being able to harvest their crops in the Fall. On account of the shortage of fertilizer, which has existed for several years, their old fields are not capable of producing maximum yields.

When this is the case the same results that the use of fertilizer would produce may often be obtained by bringing in new ground; ground that is now encumbered with stumps or that may be reclaimed by drainage.

When modern methods are employed, little labor is required to do this. Such land is often more productive for certain crops than any other and can be utilized to great advantage while old fields are given a much needed rest.

Care should be taken in choosing crops to put on new land and if there is any doubt in your mind regarding this point it is best to consult your county farm agent or some other agricultural authority if there is no agent in your county.

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100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.

Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Company, Dept. 98, Waukegan, Ill.

A cow's health is not complete without a perfect udder. Caked Bag, so likely to occur at the calving period, is quickly eliminated by applying Bag Balm, the great healing, penetrating ointment.

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25 Convenient Distributing Points

WHEAT MILL FEED REGULATIONS

Following is a summary of the Pennsylvania Food Administration rules for sale of wheat mill feeds recently issued:

1. Price of bran shall in no case exceed 38 percent of the average of wheat at the mill.

2. Cost of wheat is the average paid for previous months' purchases including 1 percent Administration fee paid on wheat ground.

3. Assuming the average cost to be $2.10 per bushel including 1 percent fee ton cost at 60 pounds per bushel, is $70. The bran price will be 38 percent of $70, or $26.60 per ton, net cash, the maximum price to the miller in bulk at the mill in car lots. When sold and shipped in less than car lots the price will be 50 cents per ton additional.

4. The following prices are to apply over price of bran per ton: Shorts or standard middlings, $2; mixed feeds, $4; flour middlings, $9; Red Dog, $15.

5. Brokers may charge a brokerage of not over 25 cents per ton; only one brokerage permitted.

6. A commission agent for consignments, making sale, delivery and collection may charge a commission of not over 50 cents per ton; only one commission permitted.

7. The wholesaler or jobber may charge not over the following advances per ton plus brokerage, commission or inspection fees actually paid, freight and cost of sacks. Sales between wholesalers or jobbers shall not advance prices to their buyers: Shipment from mill or in transit, $1, cash demand draft; $1.50, arrival draft; sale from jobber's warehouse, $2.50, cash, sight or demand draft; $3, arrival draft; sales on credit over arrival draft, $1.

8. Miller performing a jobbing service may charge jobber's advances.

9. Retailers are to be allowed a reasonable profit not to exceed prewar profit per ton.

10. A miller purchasing mill feeds shall base his selling price on the average of cost of feeds purchased and feeds manufactured, quantities of each considered.

11. County Administrators in case of disputes will ascertain all the facts in accord with the above rules and if unable to arrive at a decision will refer data to the State Food Administrator for advice.

12. A proclamation has recently been issued which places all live stock and poultry feeds under the regulations of the U. S. Food Administration. Regulations governing the sale of feeds other than bran and cotton seed are being formulated.

MAKE CHEESE ON THE FARM

Farm cheesemaking offers opportunity for saving large quantities of food which otherwise would go to waste. A surplus of milk is produced on many farms. This surplus is usually fed to hogs. In view of the meat shortage, milk makes an expensive feed for hogs, when it could be made into cheese which is a meat substitute.

The value of cheese as a food has not been fully appreciated. One pound of cheese, according to the U. S. Department of Agriculture, is equal in food value to two pounds of beef. Thus, some idea of the value of whole milk can be gained, since 50 pounds of milk will make about 5 pounds of cheese. In other words, 50 pounds of milk made into cheese is equal in food value to 10 pounds of beef. A pound of cheese contains about twice as much protein, or muscle building material, as a pound of beef of average composition and it is more than twice as great in fuel or energy value. Cheese likewise has greater food value than pork, since pork and beef are not widely different in their nourishing qualities, except that pork has a higher fuel value.

PASTURING PASTURES

On many farms the pasture receives less attention than any other part of the farm. The cows are turned into it in early spring and allowed to graze upon it often day in and day out until late fall, and it receives only enough attention to see that the fence will hold and the bars are all right.

Nothing will respond to good treatment quite as easily and profitably as a pasture, providing, of course, that there is something there to respond. Too early and too late grazing are very harmful. The grass should be allowed to get a good start in spring and it should have some top in fall to protect it thru winter. Brush and briars should be cut in July or August, and burned when dry.

Nothing will help to maintain the supply of succulent food quite as much as top-dressing in spring with a fertilizer rich in available nitrogen, and an application of lime every three or four years will keep the land sweet and help to liberate a lot of inactive plant-food. All fertilizers are high in price, but so is everything else and this year, when many pastures have been plowed for wheat, the remaining acreage should be well cared for in order to maintain the usual number of animals. Good roughage is quite as important as good concentrates and, perhaps, a little bit more so because a liberal supply of roughage of the right kinds will help to lessen the amount of purchased foods necessary.—John H. Voorhees.

GROWTH OF COW-TESTING ASSOCIATIONS

That co-operative cow-testing associations are successful in this country is shown by the fact that since 1906, when the first association was organized in Michigan, the number has increased steadily to 459 associations, in 40 states. On July 1, 1917, there were 11,720 herds, with a total of 211,966 cows being tested regularly in these associations. The total number of milk cows in the United States at that time was 23,372,200, of which 0.91 percent were numbered in these organizations.

The first cow-testing association was organized in New-yge County, Michigan, January, 1906, is still in existence and now has 30 herds with a total of 304 cows. The following year three new associations were organized in that state. In 1908 three were organized in Maine, and one in New York. The next year five other states entered the list.

Wisconsin now leads in the number of associations, 81 being in operation in that state. Other leading stat are Vermont with 47, New York with 43, Iowa and Ohio with 30 each, Minnesota with 26 and Pennsylvania with 24. During the year ended June 30, 1917, 95 new organizations were established.—U. S. Dept. of Agri.

Folly of Price Fixing

Farmers Bring out Vital Farm Needs

The folly of price fixing was the st popular address at the Cornell armers' Week. It was given by esident Jacob Gould Schurman and emphatically denounced price fix- g on food products, and demanded at the President and Congress give e farmers a chance to stimulate gricultural production. President hurman said that the three great ctors of the war were men, muni- ons and food. Man power in suf- ient amount can be secured by aft. Munitions are being piled up e mountains by the factories of ance, England and America. But d for our army and the Allies is e vital question of the day. Every- here food supplies are very limited d we face an inferno of starving tions. Yet no problem of the war so misunderstood or so misman- ed.

"Legislation can surely put a stop profiteering in the sale of food uffs. Mr. Hoover is wonderful in own field—that of conservation. efficient has he been in spreading e doctrine of the clean plate that me of us have come to think that nservation will solve the problem. is is a mistake. Economy will ake the food that is in the cupboard farther, but it will never put a ngle extra ounce into it. Conser- tion will not produce a grain of heat or a single litter of pigs. It not all a question of price, but en- ely a question of increased supply. r armies and the starving Allies n never be fed unless the American rmer raises enough oats, wheat, rn, rye, beef and pork; and he ver can and never will do this un- a reasonable profit is allowed him r doing so.

Folly of Price Fixing

"Why should the food producer one be singled out for the role of benevolent institution? Why not also the producers of unessential commodities, amenities and luxuries? Why attempt to regulate the price of farm products? This has been tried and abandoned in Europe, as it has the effect of driving such products out of the market. Producers must have cost and a fair profit or they won't produce. Take for example coal. Twice we have fixed the price on coal. The result is heatless Mondays and very inferior coal. We tried to put railroad freight rates below the level of profit for the management. The result was a paralysis of transportation. We fixed the price on wheat and the result was that corn went so high it is unobtainable. And now farmers and poultrymen feed wheat to stock and poultry because it is the cheapest grain to be had. And what is far worse, the farmer is so scared that he refuses to plant wheat, and the new crop will be at least 5,000,000 acres short. Potatoes are in the same class—less than half a normal crop to be planted, with many times the need of these foods that ever existed in normal times. This consideration for the temporary and wholly imaginary advantage to the consumer will result in disaster for the whole world. Within twelve months, starvation for ourselves and our Allies stares us in the face."

Comparative Advances

These striking statements were made after an extended conference of the State Food Administration with a number of members of the Federal Food Administration, both of which were present and heard these plain-spoken statements. The farmers present could not but hope that this exposition of the true state of affairs will have weight with the government. In fact, Pres. Schurman, who is a leading member of the State Food Commission, said that the state college and the state department of agriculture had come out unequivocally as opposed to price fixing, and intended to exert its influence with the federal government in that direction.

"Price fixing and the fear of price fixing is paralyzing production," he reiterated. "We can't have low prices in times of war," he said. "Millions have left the ranks of producers and are now destroyers and consumers. Farmers constitute one-third of the population of this country. They are not a rich class. One-third of all the farms in the United States are worked by tenants; only 36 percent are clear of mortgage. Food stuffs have increased only 80 percent while other commodities have increased far more in cost. Why single out the farmer for persecution?

"I hold in my hand a list of comparative prices of 292 commodities, covering the period from 1913 to the present. These include food, clothing, fuel, lighting and a large number of essentials. On the basis of 100, house furnishings are now 179, wool 213, cotton 135, drugs 230, foods 185. The latter mark is only 4 points above the average for the total 292, which includes luxuries. We do not need food regulation; economic law will take care of that."

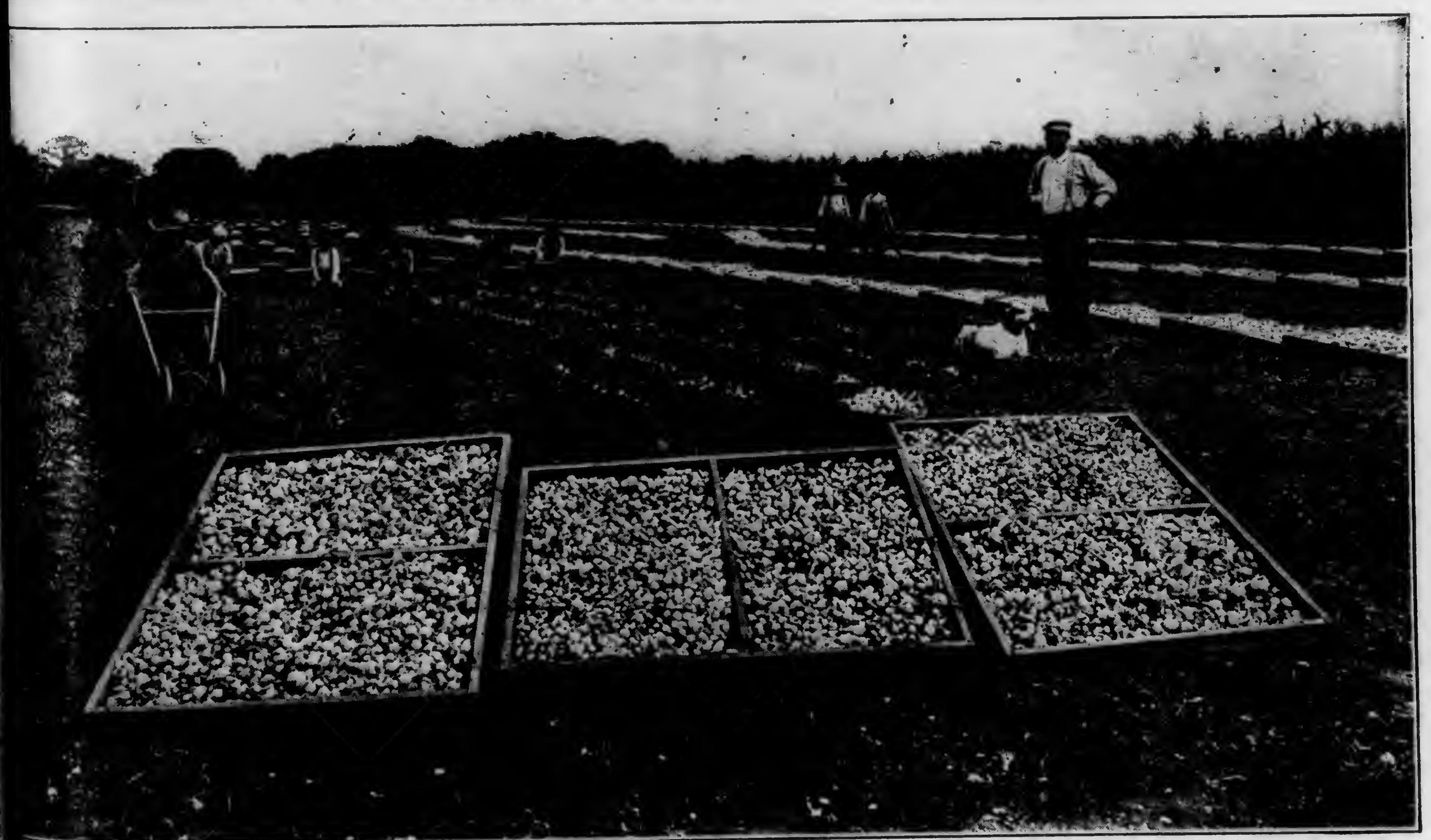
President Schurman closed with a stirring appeal to every man, woman and child to do his best to increase the food supply willingly and cheerfully, that the forces across the sea may be sustained in the terrible struggle, and that the war may be brought to a speedy and victorious end.

Feed Prices

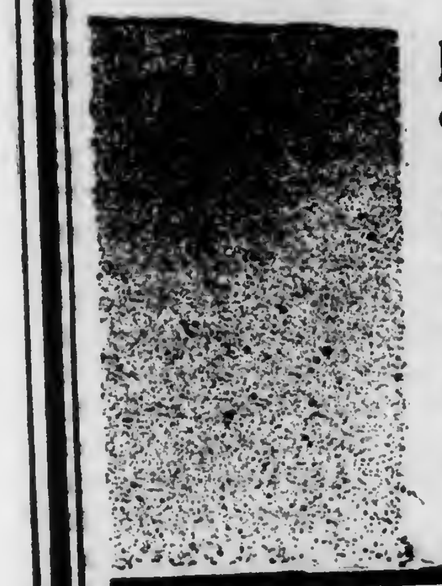
In an open discussion following about the first subject brought up was the failure of the regulated prices on bran which should have taken effect on January 1. The fixed price was to be $28 a ton on bran, with other wheat by-products rated accordingly. Reports were rapidly given from all over the state of $48 to $50 per ton being charged. Chas. E. Treman, federal agent in charge of this work over the state, was present. He scored the farmer roundly for failing to report this violation. He had discovered the conditions for himself and had asked a farm bureau agent to collect data of ruling prices, which he intended to send to Washington with a recommendation for an investigation and prompt attention. He had not had a single complaint from the men most concerned when he waited for it and would have gladly acted on it. Other speakers asked for prompt reports of violations of rules, first to county food controller or agent, then to Mr. Treman if satisfactory results do not follow.

World's Food Supply

Dr. Geo. F. Warren, head of farm management of Cornell, was referred to by Pres. Schurman as having done more to interpret the work of food production than any other man today. Dr. Warren gave some most exhaustive tables of data of food production all over the warring and nearby neutral world for a period of years before the war and up to the present time. While America has had not far from a normal production of both crops and animal food products for a few years past, that of France, England, Ittaly, Norway, Sweden, and other countries has been far below normal since the outbreak of the war. The 63 governments of Russia had increased an immense total of crops and animals, from 30 percent in the lowest staple to 54 percent in the highest; and this great output will now go to help Germany carry on the struggle. This was the most ominous information given during the week. He made it clear that American farmers must feed the Allies or this war will be lost, or greatly prolonged. As another speaker put it, "Farmers must do their best or Kaiserism will rule. If we fail to win, life will not be worth living; money will not be worth having. With men and munitions more easily obtainable than food, we must grow food, and yet more food."—F.



Harvest Time in the Big Onion Fields of the Southwest. Where Acreage Tripled in Five Years.



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Prevents waste of high-priced corn — it delivers the bacon.

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CONCRETE for PERMANENCE

Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

Work in Joint Effort the Soil of the U. S. and Canada--Co-operative Farming in Man Power Necessary to Win the Battle for Liberty

The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service, Dept. of Labor

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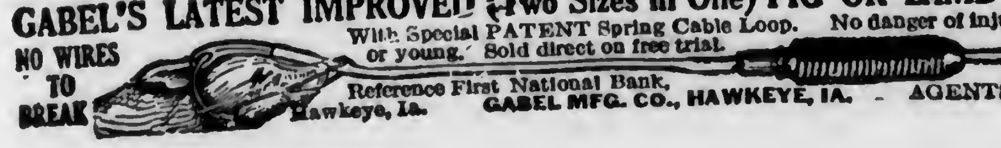

NO WIRES TO BREAK

With Special PATENT Spring Cable Loop. No danger of injury to animal or young. Sold direct on free trial.

Reference First National Bank, Hawkeye, Ia. GABEL MFG. CO., HAWKEYE, IA. - AGENTS WANTED.

Live Stock

UNCLE SAM WANTS MORE PORK

(Continued from page 1.)

Forage Crops

The amount of seed necessary to insure an acre of forage is as follows:

Crop	Seed per acre	Depth to cover
Oats and Canadian field peas	1½ bu. each	1 to 3 in.
Field corn ..	1 bushel	2 to 4 in.
Rape	10 pounds	½ to 1 in.

The number of pigs that can be pastured on an acre of forage depends upon the size of the pigs, the luxuriance of the pasture crop growth, and the accompanying grain ration. As a rule, not more than twelve to fifteen pigs should be pastured on an acre. The grain ration for forage-fed pigs should be increased as the feeding period continues, in order to give finish or fatness. About three pounds of grain to each 100 pounds of live weight is the proper proportion.

For rapidity of gains, the self-feeder affords an able instrument. It has been shown within reasonable doubt that the self-feeder method of growing and fattening pigs speeds up the rate of gain considerably. However, when economy is considered it would hardly be advisable to recommend unqualifiedly the use of the self-feeder. There is considerable waste connected with its use. There is actual waste of grain and concentrate which works out of the feeder and is lost, and probably loss due to consumption above what can normally be digested, for a pig may be a "hog" after all. In these war times we cannot afford to overlook the smallest saving.

Grain Supplements

An experiment for testing the use of tankage versus oil meal as a protein supplement for growing and fattening pigs has recently been concluded at the Pennsylvania Experiment Station. The results show, with corn at $1.30 per bushel, oil meal at $60 per ton, tankage at $100 per ton and oats at 75 cents per bushel, that for cheapness of gains, oil meal is preferable to tankage. When corn alone made up the grain ration, the oilmeal-fed pigs were produced for $1.07 a hundredweight cheaper than the tankage-fed pigs. When corn and ground oats were both included, the difference was 31 cents per hundredweight in favor of the oilmeal-fed pigs. But the cheapest ration was the one consisting of corn, all they would clean up, ground oats 20 pounds per 1,000 pounds live weight, and oil meal 5 pounds per 1,000 pounds live weight. For rapidity of gains, tankage was most favorable, the fastest gains being made by the corn, ground oats and tankage-fed pigs.

Among other things, this work shows that rapidity of gains is not the only factor in profitable and successful pork production. All of these pigs were marketed at the same time, and yet the group that stood lowest in rapidity of gains afforded the greatest profit. But there is a limit at which slowing up the gains to cheapen them will fail to be profitable. The higher priced concentrated feeds become, the more difference there will be in favor of cheapening the gains rather than speeding them up.

Conclusions

Every farmer should have some hogs on his place. By the use of a purebred boar of good individuality the pigs will be better feeders, and what extra investment this type of boar demands will be more than recompensed for. It must be remembered that the boar has a chance to influence every pig in every litter.

A little additional knowledge and the use of care will encourage the sow to give birth to more pigs and stronger pigs. After being weaned these pigs should be placed on forage supplemented with the proper grain ration, for the forage crop system of feeding out spring shoats will produce cheaper gains and a more desirable finish at the time of marketing.

One Corner of the Busy Lancaster Stock Yards

SHEEP BREEDERS AND FEEDERS

Sheep cannot perform their most efficient service as consumers of roughage, waste products and home-grown gains and do their best work as conservers of soil fertility unless a flock of ewes and lambs is kept during the year. Breeding ewes and lambs are needed to turn the grass and rough feeds into money, encourage better crop rotations and the growing of crops that will supply better feed and leave more fertility in the soil. Buying feeders from the range to convert the grain feeds and small quantities of roughage into manure cannot keep up the fertility of the farm. There is great need for ewes and lambs to utilize the feed crops and furnish better feeders to meet the market demands. A simple solution of the whole problem is the small farm flock, well bred, well fed and well tended, and it will surely make money for those who are willing

study the business and stand patiently by it.

Some superficial observers have proclaimed that the small farm flock has proved a failure because every year the markets exhibit too many uncouth, poorly finished lambs which do not reflect credit to the farmers who shipped them in. But this poor judgment in breeding and feeding could largely be overcome by co-operation in the purchase of rams and the marketing of the finished lambs. With a number of farmers keeping the same breed of sheep and making up large shipments of more uniform lambs each shipper would get better prices for his stock. Then, too, the different members of the association would take greater interest in preparing their stock for shipment. An efficient co-operative association would also help to solve the cur dog problem, which, perhaps, has more to do with the failure of the small farm flock than all other troubles put together.

When a number of farmers in a community begin to keep sheep the local dog nuisance can be more easily controlled and adequate fences will be built with little friction. Where one man keeps sheep and has neighbors who do not, he is more likely to have trouble. He has the usual enemies of the sheep to contend with, and the attitude of his neighbors is a hindrance. In union there is strength. Community effort is always more fruitful of results than the same effort by one man working alone. Many important advantages in marketing, protecting against dogs and fencing may be gained in a county where several farmers keep sheep.—W. Milton Kelly.

PASTURE CUTS COST OF PORK PRODUCTION

That the use of green forage crops with corn is more profitable than the practice of feeding corn alone to hogs is shown by results obtained in tests conducted at the Ohio Experiment Station. Pigs averaging 66½ pounds in weight at the beginning of the experiment were pastured 62 days on bluegrass, some receiving corn alone and others a mixture of eight parts of corn to one of tankage.

When corn alone was fed the use of pasture increased the rate of gain 77¾ percent and lowered the amount of grain required for a unit of gain in weight 32¼ percent. When tankage was fed with corn the use of pasture still added materially to the rate and economy of gains but not to the extent that it did when corn alone was fed. In later experiments in which smaller proportions of tankage were used, better results were secured than from the use of corn alone.

The hogs fed corn alone in dry lot gained only two-thirds of a pound daily, while those fed corn on pasture gained one and a fifth pounds. The value of the gains over the value of feed of the hogs fed corn alone was four cents, with corn at $1.54 a bushel and hogs at $14 per hundredweight. The gain made by the hogs fed corn on pasture was valued at $12.82 above the cost of feed and pasture, which was figured at $16 an acre. An acre of pasture in this case was figured to replace grain worth $67.

Other experiments have shown that more satisfactory results can be obtained from the use of crops like alfalfa, clover and rape than from bluegrass pasture.

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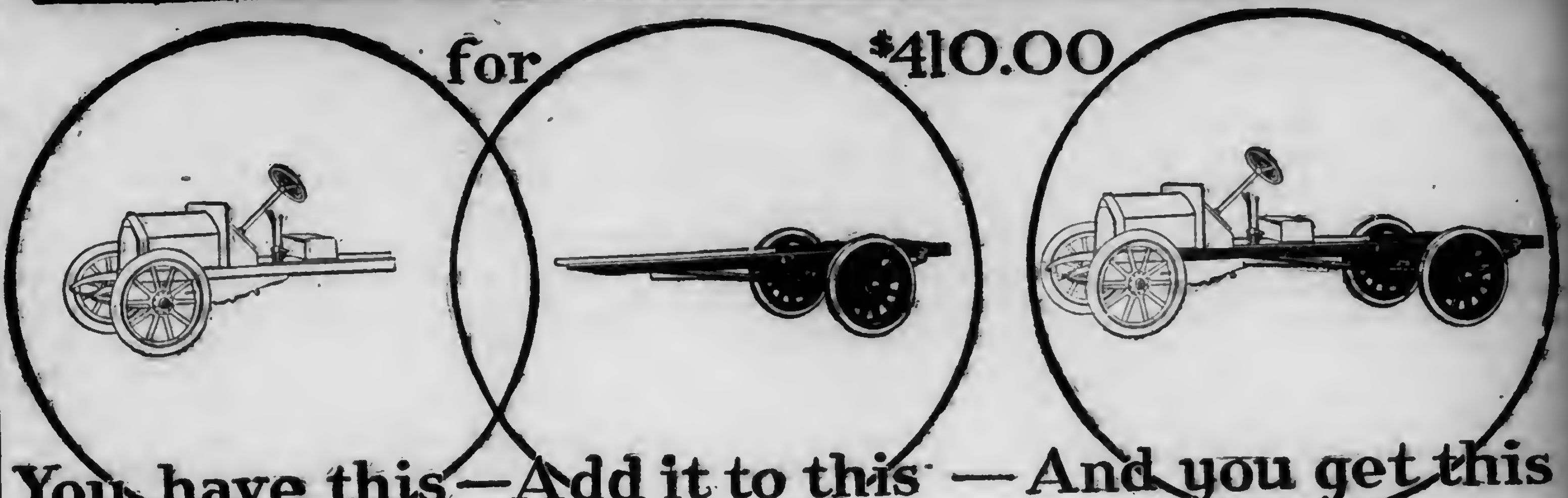

You have this—Add it to this —And you get this

JUST now our country is confronted by a big transportation problem. Food, clothing and munitions **must be moved.** The railroads are doing their best; but even their best is not good enough.

Every one must help. And the TRUXTUN will help every farmer to do his bit by relieving the railroad of the heavy strain the war has laid on them.

With a TRUXTUN you can do even your farm-to-city delivery, a daily run of fifty to sixty miles being the ordinary thing.

The TRUXTUN is the original unit for converting **passenger** cars into **profit** cars.

It gives you a real truck—sturdy, dependable, **shaft-driven,** with internal gear axle drive, the drive used on the highest-priced trucks.

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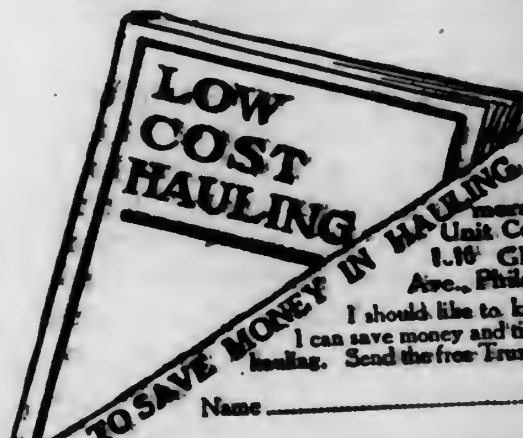
A TRUXTUN reduces your cost of hauling to the minimum as compared with doing it by horses. It is on the job every day. It is never tired, never sick. It doesn't "eat its head off" when not working.

Our engineering department will gladly answer any questions regarding the size truck you need, etc., free of charge.

Write today for our book "Low Cost Hauling" and name of nearest TRUXTUN dealer.



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Our Double Tread Tires made by our special process can't get enough work to do. Especially is this so on the muddy and sticky spring roads. Gets you out of the ruts—keeps you out of the ruts—takes you there and brings you back home again! Guaranteed—absolutely reliable—and mighty low in price!

The following are the little prices of our guaranteed tires.

Sizes	Price	Sizes	Price
30x3	$6.50	36x4	$11.00
30x3½	7.50	34x4½	12.00
32x3½	8.50	35x4½	12.00
33x4	10.50	36x4½	13.00
34x4	10.50	37x4½	13.50

We will retread your old tires by our improved process and guarantee them at the following prices:

Sizes	Price	Sizes	Price
30x3	$5.50	36x4	$8.50
30x3½	6.00	34x4½	8.50
32x3½	7.00	35x4½	9.00
33x4	8.50	36x4½	9.00
34x4	8.50	37x4½	10.00

Add $1.00 to the above for Non-Skid Tire

R. K. TIRE COMPANY
837 N. Broad St., Philadelphia, Pa.
Send for descriptive booklet and price list.

160 ACRE FARMS IN WESTERN CANADA FREE

Scenes of Prosperity

are common in Western Canada. The thousands of U. S. farmers who have accepted Canada's generous offer to settle on homesteads or buy farm land in her provinces have been well repaid by bountiful crops of wheat and other grains.

Where you can buy **good farm land at $15. to $30. per acre—get $2. a bushel for wheat and raise 20 to 45 bushels to the acre** you are bound to make money—that's what you can do in Western Canada.

In the provinces of Manitoba, Saskatchewan or Alberta you can get a

Homestead of 160 Acres Free

and other land at very low prices.

During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of **Oats, Barley and Flax. Mixed Farming** is as profitable an industry as grain raising. Good schools, churches, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

F. A. HARRISON,
210 N. Third Street, Harrisburg, Pa.
Canadian Government Agent.

Farm Products Prices and Prospects

NEW YORK'S AGRICULTURAL CENSUS

Following is a partial summary of the results of the agricultural census of New York which was taken about February 1 by the State Food Commission, with the assistance of the Farm Bureaus and the schools of the state.

Farm Workers

The number of men who have enlisted from the farms is reported as 3,772. The number drafted, 11,427, may include some who have been called but who have not yet left for service. The number who have left farming for other kinds of work, 19,459, is much larger than the total number who have gone for military service.

A considerable number of men have come back to the farm from other work. These, together with the increased amount of work being done by women and by farmers' sons, who are doing more work in proportion to their years than formerly, have made up the loss to some extent. Still, however, there seems to have been a decrease of about 8,000 in the number of persons doing work on farms, other than housework, at the present time.

The census last year showed a decrease of 16 percent in the number of hired men on farms, and this year a further decrease of 15 percent is shown.

Seed Wanted and For Sale

Figures show that there is enough seed in this state to supply all who wish to buy, but the individual county reports show that a large amount of work will be necessary upon the part of the County Seed Stock Committees to secure an adequate distribution, both within and between counties.

In the case of spring wheat, however, there is a shortage of 23,000 bushels. Provision has already been made to secure this needed spring wheat thru the Milling Division of the United States Food Administration, provided County Seed Stock Committees find it necessary to import it from outside their counties.

The amount of potatoes for sale at first glance seems to be large. In this connection, it should be noted that there are a good many weeks before potato planting time, and that a good proportion of the potatoes listed for seed purposes will normally be consumed between now and that time. The amount of seed potatoes offered for sale is about one-ninth of this year's crop.

The amount of seed corn for sale should not be misinterpreted. Much of the seed corn in the state has not yet been tested for germination. Farmers are advised to insist on a germination test before purchasing seed corn.

The amount of seed oats for sale and the amount that is called for is about even. It would seem that any one who had good seed oats would do well to hold them for seed purposes. The same also applies to barley.

Live Stock Wanted and For Sale

The numbers listed here are in several cases about equal. Thru the sales attached to this report, exchanges should result that should be mutually beneficial to a large number of persons. There are still about 10,000 extra horses for sale in the state. Last year there was a reported surplus of 8,000. The number of breeding ewes wanted and for sale is practically the same as last year.

Fertilizer

About 24,000 less tons of fertilizer are expected to be used this year than were used last year. In the case of lime, however, there is an increase from 153,000 tons to 218,000 tons.

Tractors, Milking Machines and Manure Spreaders

The number of tractors on farms is 2,730; milking machines, 4,538; and manure spreaders, 25,730—good evidence that farmers are increasing the use of labor-saving machines of their own accord and without governmental assistance, wherever the use of these machines pays.

Live Stock

The number of dairy cows is about the same as last year, with perhaps a slight decrease. The number of heifer calves being raised, however, shows a decided decrease from last year, which also showed a decrease from the previous year. About six percent of the cows and heifers two years old and over are registered purebreds. The number of colts being raised is decreasing rapidly. The number of breeding ewes is about the same as last year. The number of sows, six months old, or over, kept for breeding purposes, shows a decrease of about seven percent.

Poultry

Apparently a full report will show a decrease of almost one-sixth in the number of hens. Other poultry also has decreased decidedly. A full report will probably show a decrease of about one-sixth in the number of eggs incubated in 1917, as compared with 1916. The number of eggs incubated last year was 90 percent of the expected number. If the same ratio holds this year, there will be a further decrease in the number that are finally incubated.

Crops

Apparently a full report will show that the area of crops harvested in 1917 was 90 percent of the expected planting, as reported in the census last year. The difference between the expected acreage of crops and the acreage harvested was made up of idle lands, land on which crops failed, and land on which crops were raised, but not harvested.

Last spring the expected acreage of all crops showed an increase of eight percent over the area harvested in 1916. This year, the total expected area of all crops is six percent less than the area harvested in 1917.

The area expected to be planted to corn is much more than the area harvested last year. Other crops that show considerable expected increases are spring wheat, barley, alfalfa, and silage corn. The most decided decreases are shown in the prospective acreage of beans, hay, and canning factory crops.

CAYUGA COUNTY SUPPLY OF CORN

The results of the census which has just been tabulated by the Cayuga Co. (N. Y.) Farm Bureau office shows much seed corn for sale but preliminary germination tests seem to indicate this corn not good for seed purposes. Local dealers have silage corn but offer little of the husking varieties.

Realizing this serious situation with which farmers have to contend, the manager of the Farm Bureau has sent out this offer to every man in the county who offered seed corn for sale: Each man is asked to send in a composite sample of corn, made up by taking six kernels from each of at least 25 ears of corn selected at random from the lot he offers for seed. As soon as the corn is received it is put in a germination test, either at the State Experiment Station at Geneva, or Cornell. The result of the test is reported to the farmer. If the test is satisfactory, he states the amount of corn for sale and the price desired. This list is given anyone who wants seed.

This plan finds the good seed, and then helps the man who has seed for sale and the man who wants to buy, get together. The slogan among those who are working with this situation is "Test your seed corn".—W.

SEED CORN IN PENNSYLVANIA

A complete survey of the seed corn situation is being made by the U. S. Department of Agriculture in which farmers are being requested to send samples of corn which they have selected for seed. There seems to be very little 1916 corn available. As to Pennsylvania the report states: "In about 25 counties along the entire northern and along two-thirds of the western edge of the state, 50 percent or more of the seed corn will have to be shipped in. The rest of the state will have enough seed corn if most of the acreage for ensilage is planted with late varieties obtained outside of the state. In the southeastern corner some of the counties have a surplus which probably will be needed to augment the supply of ensilage corn that will have to be shipped into the state, wherever a shortage of seed exists. One hundred eighty samples of crib-run corn that were very representative of conditions this year were tested for germination and the following results obtained:

"Eleven samples tested 90 percent; 10, 80-90 percent; 17, 70-80 percent; 11, 60-70 percent; 75, 50-60 percent; 35, 10 percent or less; and 16, no percentage.

"By appealing to the patriotism of the farmers much of the seed corn has been sold by them to their neighbors or to farmers in other sections of the state at fifty cents to a dollar over the market price of commercial corn. Corn testing 75 percent or more, which can be bought at $3 to $3.50 per bushel, is being ear-tested and the selected corn therefrom sold at $5 to $7 per bushel."

CRITICAL MOMENT IN MICHIGAN

The conditions surrounding the potato crop in Michigan are worse than they have been any time in the past. Great unrest exists among potato growers, and every day this is becoming more pronounced, and in sections feelings are at a fever heat. The growers feel that they have not been treated fairly and many of them are disposed to grow in 1918, potatoes for their own use alone. Unless something is done to meet the existing conditions and gain the goodwill and the confidence of the man who grows potatoes this year will see a decided reduction in the acreage of this crop.

Dealers in potatoes, in Michigan, are paying $1 to $1.10 per hundredweight in some of the leading potato producing sections of the state; at the same time the quotation on city markets ranges from $2.25 to $2.65 wholesale. Potatoes are retailing from $2.50 to $4 per hundredweight.

The conditions existing in Michigan at this writing are critical and bode no good for the crop of 1918.—Bulletin A. S. & W. Co.

COST OF PRODUCING ACRE OF TOMATOES

There has been a great deal said about the government setting the price of tomatoes, but as yet there has been very little said in regard to the cost of producing a ton of tomatoes for canning.

A group of five farmers were gathered together the other evening discussing the tomato proposition from every angle and decided to see how the cost of producing 10 acres of canhouse tomatoes looked on paper. This is the result:

Rent of land, $100; plowing, $25; harrowing, $6; marking rows, $3; fertilizer, $200; applying, $6; making up hills, $7.50; plants, $35; setting plants, $20; cultivating, $37.50; crimson clover, $30; seeding, $1; cultivating in, $4; baskets, $50; picking, $90; hauling, $100; replanting, $5. Total for ten acres, $720 or $72 per acre.

The above was figured on a five ton average per acre, making the cost per ton $14.40.

These are real war times as the above figures show. It is to be hoped that those who have in charge the price fixing for 1918 tomatoes may be well qualified to see both the producer's and consumer's side.—Producer in Bridgeton (N. J.) News.

(At this time the Food Administration has not fixed a price upon tomatoes of any kind.—Editors.)

The advice for early ordering of farm supplies, lime, implements, spray materials, drain tiles, and fertilizers will soon be too late. Act now if you haven't already.

Stick to tried and true varieties of vegetables this season. Seeds are scarce. Don't pay good money for fancy stuff of doubtful productivity.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

ARRANGING CREDIT FOR FARMERS

A Crawford County Activity

Last spring many of the farmers in Crawford County, Pennsylvania, as was the case in other sections of the state, did not have ready money with which to purchase the high-priced seed which was needed to plant their usual acreages. Especially was this true in the case of potatoes when the seed to plant an acre cost almost $40.

In order to assist the farmers in this matter and to encourage them to produce larger crops, the County Farm Bureau asked the aid of the Meadville Chamber of Commerce to help out in this matter. They decided to go one better than had been the case elsewhere in the state and to loan money for the purchase of feed to deserving farmers for six months without interest, or until the crops grown from the seed purchased could be marketed. The money from which the loans were made was obtained in the following manner: About fifty business men of Meadville signed a note of $50 each, bearing interest at 6 percent. These notes were deposited in the bank with the understanding that these men would share alike in any losses which might occur. Most of these men went in with the thought that it would cost them some losses.

Applications for loans were made thru the Farm Bureau office. Application blanks were filled out upon which the applicant stated the size of loan desired, the purpose of the loan, the value of his real estate and personal property, if any, and a man to whom the examining committee could refer. These applications were turned over to a committee appointed by the Meadville Chamber of Commerce, which committee passed upon all applications, taking into consideration the character of the applicant and his needs rather than his financial standing. When the application had been acted upon favorably, the money was paid over to the applicant.

The loans were quite small in most cases, varying from $5 to $75 and averaging about $30. But it enabled the farmers to put out larger crops than they could have done without the loans. A total sum of about $1,800 was loaned in this way to 57 different farmers. Most of these notes were met at the time of maturity, altho a few have been renewed. On the whole, the entire experiment was considered a success and the same system will in all probability be used again this spring.—H. O. Henderson, County Agent.

NEED CONSTRUCTIVE LEADERSHIP

I am greatly encouraged to note your aggressive attitude in bringing forward the neglect of the farmer. Your editorials of March 2 are very timely. For a year I have taken every opportunity thru the press and at public gatherings to point out just what you have now stated. We have fallen very much away from the ideas of our forefathers—that the most dignified occupation of a gentleman was the cultivation of the soil. Because of the snobbish thought that dollars marked the worth of a man to his community, gradually the roads to success merged into paved highways to urban communities which grew and thrived at the expense of soil cultivation. The rendering of service became measured not by the dignity of essential labor but by dollars distributed thru alms from over-stocked purses mostly derived from exploiting the toilers. This the American farmer has long felt and resented.

The farmer has no constructive leadership, not even a champion in its Secretary of Agriculture. Nowhere in the public service commissions did he intercede for or get representations. Nowhere is it recorded, so far as the writer knows, a plea for an extension of the Farmers' Loan Act to help any except those who are able to help themselves thru their bankers. He personally, only last week, objected to a bill to provide funds to furnish the farmers seed. He has turned down appeals to suggest relief by acting thru the county agents paid by the government.

When this year's shortage comes, which is as certain as the next Liberty Loan, it will be too late. But let the blame not be placed upon the farmer, but on the shoulders of those responsible for it. Every farm journal in the country should use the big stick now.—Horace A. Keefer, Dauphin Co., Pa.

DRIVEN OUT BY EXPRESS BUNGLING

I was interested in accounts in your issue of March 2nd of trouble in sending eggs and butter by express. We run a poultry farm and we tried several different kinds of parcel post boxes. We had so much breakage that we let it go. Then last July and August two cases of eggs were lost going to New York, amounting to a little over $30. As yet, have not been able to get a penny from the Adams Express Company for our loss. As grain went up and eggs remained low, we disposed of three-fourths of our stock. Now eggs are cheap again; 41 cents was the top price in New York March 2. With grain so very high "to buy", eggs cheap "to sell", so many losses in transportation, we have and will turn our energies to regular farming, having around 80 acres of pretty good land with pasture and plenty of wood land.—H. B. Cook, Mercer County, N. J.

JUST RIGHT

The citizens of Cohocton, Steuben County, N. Y., pledged themselves to each give a certain number of days' labor on farms when their services are most needed. Ruling prices of farm labor will be paid by the farmers. Let us hear more of this co-operation to reduce high cost of living. City people can thus help the farmers and incidentally help themselves.—S., Tompkins Co., N. Y.

How to Make Money With Fertilizers

SAVE LABOR

It has been proven that labor on fertilized land returns 50 to 125% more than on unfertilized land, because of the greater crop secured from a given amount of labor. The hired man is costing you more than he did. Make his labor produce more by using *A. A. C. Fertilizers.*

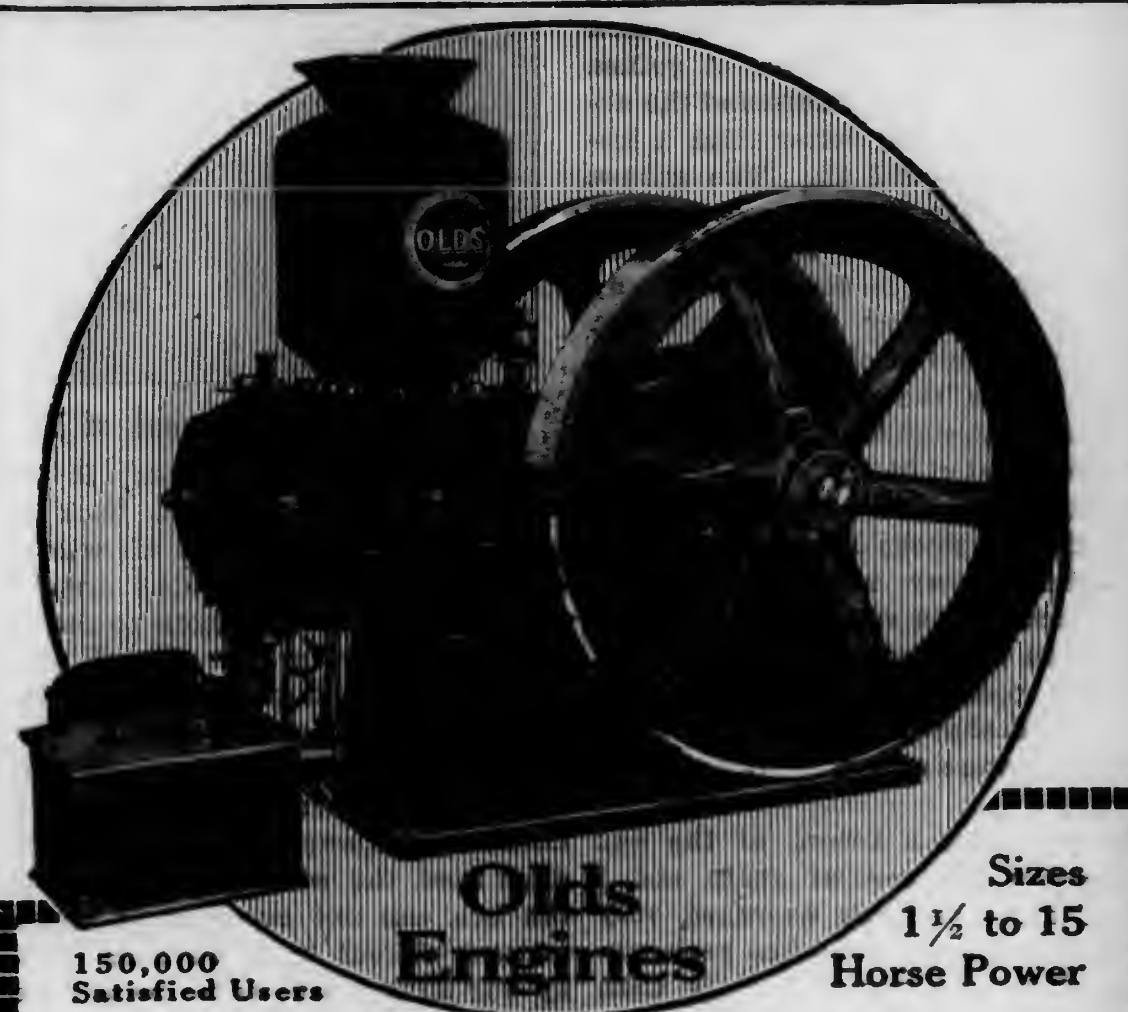
KEEP MORE STOCK

The old fashioned way was to keep stock to make manure for the land. It was a good way too; but fertilizers, by increasing the grass and grain and forage, make it possible to *carry* more stock. *Grow* your grain with *A. A. C. Fertilizers.*

If we have no agent in your town, we want one. Write us for our nearest agent's address or ask for an agency yourself.

The Company maintains an Agricultural Service Bureau conducted by Dr. H. J. Wheeler, for many years Director of the Rhode Island State Experiment Station, whose Crop Bulletins, services and advice are free to all farmers.

The American Agricultural Chemical Co.
2 Rector Street, New York, N. Y.
We serve our trade from 60 points. 41



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Sizes 1½ to 15 Horse Power

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Poultry

GUINEAS

I have read with interest, W. F. Purdue's article on guineas in a recent issue of Pennsylvania Farmer and heartily agree with most that he says. However, my experience is that it is not necessary nor advisable to keep sufficient male birds to allow the guineas to go in pairs. This requires the keeping of too many unprofitable birds and the more male birds in the flock the more quarrelsome they will be. I used to hear it claimed that it was necessary to keep as many males as females in order to insure fertile eggs but one year we had a flock of more than 30 guineas and there were only three male birds in the flock. The eggs from this flock hatched as well as eggs from flocks where more males were kept. In fact, nearly all of the eggs set from this flock proved fertile.

Another advantage in keeping only a few male birds in the flock is that the guineas will range about in flocks during the laying season and usually from four to six hens will lay in the same nest, while if one male is kept for each female each hen will build a separate nest. It is much easier to find the nests if several hens lay in the same nest.

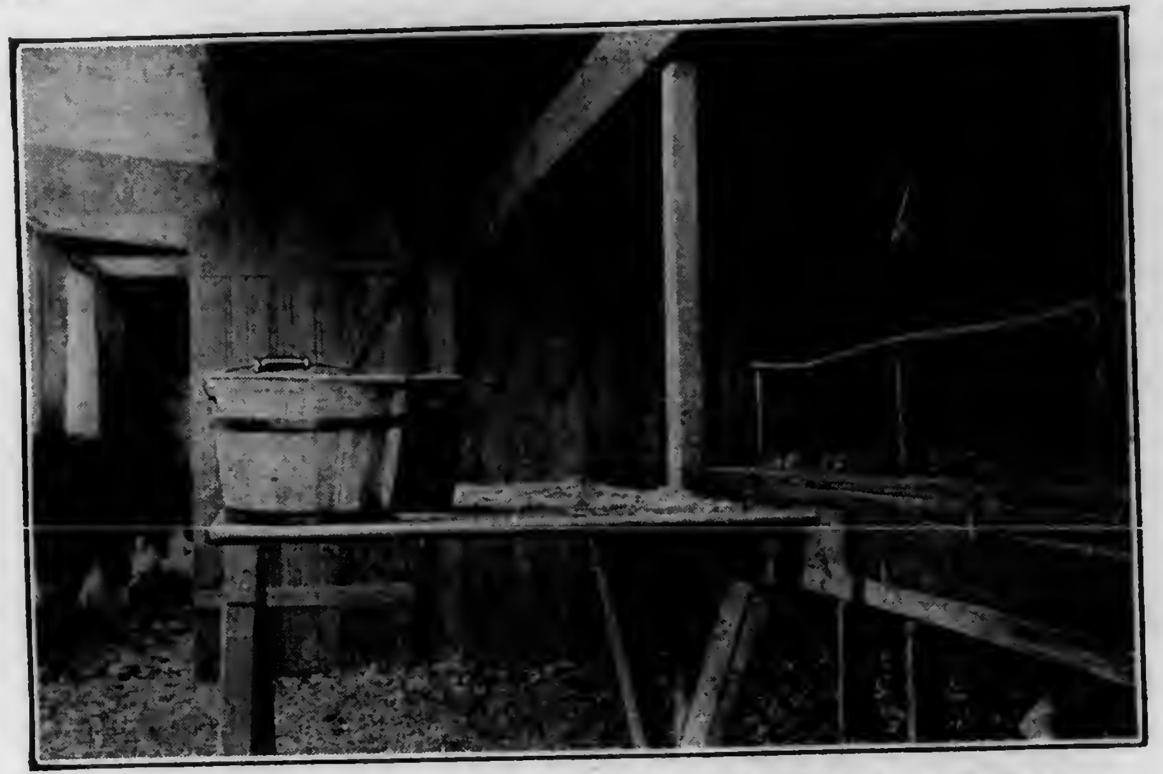
As to whether it is best to set the eggs under chicken hens, it is a matter to be settled by the circumstances. If I should find a guinea hen setting on a nest of eggs where she was not likely to be disturbed and it was not too late in the season I would not break her up. A guinea hen certainly does understand the nature of her young better than a foster mother would do. The guinea hen treats her young very much as the ruffed grouse or the quail does. Whenever there is danger from any source the young understand the mother's signal of alarm and they all hide. When the danger is past the guinea understands just how to call her brood out of hiding. Once I remember an old guinea hen that hatched a good sized flock; I never could find just how many were hatched but she succeeded in raising 8 to maturity. When they grew up so they could fly she took them to the poultry house and they were as tame as the ones that were reared by the chicken hens.

I have kept a record of the egg production for several years and I found that the flock averaged very close to 100 eggs to the hen each season. This is a better average than the average chicken hen on the farm and the guineas certainly look out for themselves and range all over the farm in search of bugs, worms and grasshoppers. They are as good insect destroyers as quail.

They beat the crow as insect destroyers, and if they do eat some grain they pay amply for it in eggs produced.—A. J. Legg, W. Va.

POULTRY-RAISING DIFFICULTIES

I agree with E. M. Anderson's letter in March 2nd issue of Pennsylvania Farmer entitled "More Eggs? —Hardly". I have raised poultry 17 years, but I am going to go slow, very slow this year. It is bad enough to have to pay the price we do for feed, but when the government is going to dictate when we shall sell our poultry and what we shall feed, few will stick to the job. I think, however, E. M. A. will find she can sell, if she wishes, to private customers but not to dealers, am I right? Last year I sold $130 worth of eggs and my feed cost $133; I also sold some chickens. Out of that I had to pay $58 for miscellaneous expenses, and while I did not come out in debt, nevertheless I feel I worked hard a whole year for very little. I had to do the whitewashing and other hard work because there was no one I could hire to do it. Eggs have dropped but feed keeps soaring—bran $52 per ton, wheat $2.20 a bushel. I grant the price of eggs seems high to the consumer but they wouldn't think so if they had to buy the feed. The latter part of last summer mine did not pay for their feed; also, some of the time during fall and winter altho I coaxed them hard. Fed wheat in morning, hot mash of alfalfa, bran, corn meal and beef scrap at noon, scalded oats at night with corn added cold nights. Now, we are told not to feed wheat and there will be no bran; so I do not see how we can get eggs without them, except in the spring when any old hen will lay if she can go out to grass. I never could get eggs without wheat. I remember a few years ago I ran out of wheat and did not feel I could pay over $1 a bushel then. It was in March and I dropped back on corn, after feeding wheat all winter, one meal a day. The hens dropped off in egg yield and began to moult, thereby knocking me out of summer eggs when they hadn't done any extra laying during the winter. This winter I did not keep as many hens as usual, next winter I will keep less, unless conditions change. The soldiers need the wheat, of course, but the hen can not come up to expectations without it, so we must make up our minds to do with fewer eggs. —A Subscriber, Delaware Co., Pa.



Showing Arrangement of Roosts, Dropping Boards and Nests

THE IDEAL FARM FLOCK

The average farmer is too busy to go into the poultry business on a large scale but he needs poultry to round out the farm income. The question might be asked, "How many birds should a farmer own to manage properly if he is also engaged in dairying or general farming?" I should say that about 200 hens of an egg-laying strain of purebred stock is about the right number. A flock of this size will be large enough to warrant considerable effort in its management, and yet it will not be so large that it will require all of the farmer's time. A 200-hen flock can be made into an excellent sideline on practically every farm.

How much equipment will be necessary? I should build two houses, each 20 feet wide and 20 feet deep. Each house will accommodate 100 hens, allowing four square feet to a bird. A flock of 200 hens will furnish enough eggs to make an investment in an incubator necessary and advisable. The size of the incubator will depend on whether the farmer is going to use some hens in hatching and also on whether he expects to sell some day-old chicks. Brooders will be necessary if the incubator is used and two or three colony houses will be of use in raising the young stock. The amount of equipment for a 200-hen flock need not be large or expensive and the cost will entirely depend on the amount of capital the farmer can use for that purpose. By hatching and brooding with hens, it is impossible to keep the equipment down to a very small investment. Brood coops can be made of scrap material in the winter. Colony houses can also be made of waste lumber. The grain and green food for the poultry can usually be stored in the barn and in the cellar and no investment will be required for a storage house for feed.

A 200-hen flock enjoying plenty of range can be maintained at a comparatively small price per hen each year. However, the feeding must not be neglected, even if the birds have free range. Some free range birds use nearly all of their energy in hunting enough food to keep them alive and the egg records are very low. By combining free range with the hopper system of feeding, each hen is insured enough of the right kind of food to produce eggs.

Nearly every farmer has the room for 200 hens on a farm without tying up too much of his capital or time in their proper management. It is generally believed from observations and experiments that the farm hen is a winner. Farmers with small, paying flocks can scarcely afford to keep them small when a flock consisting of as many as 200 birds would produce a constant income from eggs if given the proper amount of care.—R. G. Kirby, Mich.

POULTRY HOUSE CONVENIENCES

The accompanying illustration shows some of the best conveniences I have found in a poultry house. Many poultry houses on farms are makeshift affairs, but I believe these features could be easily adopted in many of them with some modification perhaps and make them convenient and more satisfactory. We are not in the poultry business as a specialty but the return from the poultry has been substantial as a farm sideline and to furnish chickens and eggs for table use.

The house shown is 14 by 40 feet and accommodates about 150 laying hens. The dropping boards are covered with concrete about 1½ inches thick. Concrete is much more satisfactory than wood, as it can be cleaned quickly and kept sanitary and does not get so damp as wood. The roosts are hinged at the back and lift up and fasten on the hooks in the rafters, making it convenient to clean off the dropping boards.

The concrete also protects the nests which are located beneath the dropping boards. The doors in front of the nests are kept fastened up all the time, keeping it dark in the nests. The hens usually seek dark or secluded places to lay. A ten-inch entrance is made in the bottom near the back end where they enter the nests. The front doors are used for gathering the eggs, cleaning out and putting in nest material.—J. L. J.

CARE OF YOUNG TURKEYS

Turkeys hatched in May will get the proper weight for Thanksgiving and it is not desirable to hatch until the weather gets warm. One season we had a flock of young turks come out in April and try as best we could, it was impossible to save them because of the cold and wet weather. Dampness is fatal to the young birds.

Young turkeys must start with inherited vigor, else the task is hopeless. Inbreeding, roup and overfatness in the old birds are frequent causes of disaster. The first hatches may be made under chicken hens but the young will need more care than the broods hatched by the turkey mothers. The latter seem to know how much the young birds can stand in the way of foraging and will bring them back to the coop before they become overtired. Not so the hen mother.

Lice are fatal to young turks but they give less trouble with the broods cared for by the turkeys. A good place to dust themselves should be provided. A little pure lard or sweet oil on the head, around the vent and between the long wing feathers will kill the lice if care is used in applying the remedy. Coal oil preparations and sulphur are liable to kill the poults as well as the vermin.

Hard boiled eggs are best for the first feed but coarse meal scalded and mixed with milk is all right in a few days. Feed what they will eat up clean. After about six weeks they may be given unlimited range and fed only at night. This calls them home. Large coops should be provided and the birds kept housed until the dew has dried off the grass in the morning. Allow the poults a chance to get all the green grass they want after a day or two from hatching.—C. H. Chesley, N. H.

REGARDING DIRTY EGGS

Washing table eggs does not in the least improve their appearance unless they have become decidedly dirty, in which case clean nests and more care in gathering are needed instead of washing. Every egg, when gathered from a clean nest, has a bloom that no amount of washing will ever bring back, once the egg has become dirty. Washing removes this finish from the egg shell and leaves the egg dry and rather rough in appearance. The natural luster

of the egg is very desirable, and there is no good reason why eggs cannot be produced in such a manner that they will need no washing.

Eggs that require cleaning should be soaked in cold water for a few moments and then gently rubbed with a cloth to remove stains. Afterward they should be dried with another cloth as allowing the eggs to dry by draining is sure to leave a large stain on the shell where it came in contact with the table. Never lay such eggs in hot water for cleaning as there is danger of partly cooking them, at least enough to spoil their freshness. Soap should never be used since it may give the eggs a bad flavor.—K.

BROODER TEMPERATURE

The amount of heat needed by a flock of chicks depends to a great extent upon the season of the year and the vigor of the chicks. During hot weather chicks of a given age will not require nearly so high a temperature as they will in cold weather. The health and strength of the flock also has much to do with it, for the more vigorous the chicks the less heat will be required.

When the chicks are first brought from the incubator, the temperature of the hover may be run as high as one hundred degrees for the first few days and at this time should never be less than ninety-five. After the first two weeks the heat may be reduced to ninety and after that gradually reduced until by the time the chicks are eight weeks old it has been brought down to seventy-five. The flock should then be weaned from the heat as soon as possible. It must be remembered, however, that heat will be required for a longer period in cold weather than in warm weather.

One of the best ways of determining how much heat is needed is by watching the actions of the flock. If the chicks are found to be crowding up under the hover there is not enough heat, and if they come out from under there is too much. The heat can be considered about right when the chicks are found spread out, with a few of the chicks lying with their heads out from under the tabs. This method far excells the plan of regulation in accord with thermometer indications which are frequently incorrect. Should some of the chicks sleep close up around the bulb of the termometer a difference of from five to eight degrees is likely to result, so that the thermometer may indicate ninety-five degrees when the actual temperature of the hover is less than ninety.

In regulating the heat of the hover it is well to remember that an empty hover registering eighty degrees will show a rise of from ten to fifteen degrees when the flock is under, due to the heat of the chicks' bodies. —K.

SPRING POULTRY NOTES

In the spring it pays to change the litter in the poultry houses if it becomes damp and dirty even tho the birds spend most of their time on the range. Dirty litter is unhealthy and is often the cause of dirty eggs in the nests. This litter will be rich in fertilizing value and practically cleaned from weed seeds so it will be fine for mixing for use in the garden.

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Ventilation in the poultry house is important on the damp days of early spring. It is best to give the house a thoro airing on sunshiny days and never close the house tightly even at night. The open front house will not be damp and during severe storms the rain and snow can be kept out by the judicious use of windows and cloth curtains. When severe rain storms are coming it pays to close the windows and keep out as much of the storm as possible or the litter in front of the windows will become very wet.

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Colony houses should be raised from the ground to keep out rats and weasels. This also provides a space beneath the house where the birds can hide from hawks or dust in the shade. Colony houses which have been in one place for several years should be moved so that the poultry can be raised on fresh clean ground. If the houses cannot be moved it is best to work the ground and plant some crop that will furnish shade or food for the young fowls.

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The poultryman living on a main travelled road or interurban can often sell many hatching eggs by placing a sign in front of the house. Motorists from the city frequently become interested in poultry raising from observing purebred farm flocks. These signs should contain as much information as possible without making the lettering too small to be readily visible. This will save time, avoid the necessity of asking needless questions and possibly result in more sales.

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Do not fail to disinfect the incubator before starting the hatch and if it is an old machine it will pay to test the thermometer, examine the water pipes for leaks, boil the lamp top in washing soda and then run the machine for at least 24 hours to find if everything is in the proper working order.

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Keep up the fight against mites in the poultry houses by frequently soaking the roosts in kerosene oil. Be sure and paint the under side of every roost with the oil because that is where the red mites congregate. They breed faster in hot weather but by keeping them out of the house entirely by some spring and winter work their elimination is made easier. When mites once become firmly entrenched in every crack and crevice in a poultry house the birds will suffer severely before the pests are brought under control. Spraying a house with lime-sulphur mixture will destroy mites and give the house quite a thoro disinfecting bath. Sometimes when finishing the orchard spraying there will be just about enough of the mixture left to thoroly wash down the inside walls of the poultry house.

—

It is good management to buy a high-grade of kerosene oil for use in incubators. We have found that this results in a more even heat with less smoke and odor and the cost of using the best grade is more than balanced by the results. We order fifty gallons of this oil at one time and keep it in a large iron drum. The supply is never allowed to fall below 25 gallons during hatching, as an insurance against delayed shipments of high grade oil to our local dealers.—R. G. K.

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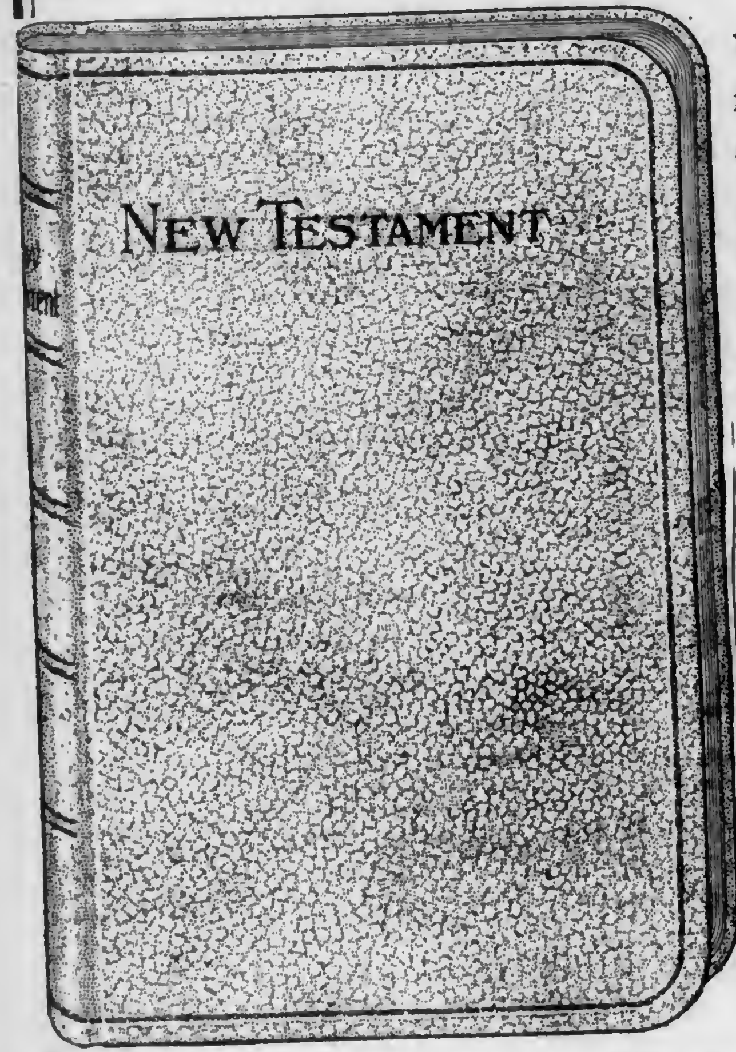

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Household

WOULD WELCOME BAN ON WHEAT

Why not make wheat saving compulsory at once? Wheatless days and the urging of substitutes are good so far as they go, but in every community there are families who will not co-operate so long as they have the money and can buy wheat flour and other wheat products. And in many families there are individuals who do not like to conserve, or who make it unpleasant for others who do wish to. Almost every one now agrees to the need of collective saving and conservation, but many are not practicing it individually, and will not until compelled to do without some things now in the open market.

There are many substitutes for wheat flour, but many are not using them at all or else only in small degree and irregularly. When we go to the store and are told there is no flour for us, we will hasten to learn the virtues of rye, barley, oats, corn and buckwheat.

Let us let our wheat go abroad where it is needed more sorely than we yet realize. There are multitudes of good things to be made from our other grains, and that with no detriment to health, comfort or convenience. It is such a little sacrifice that no one can fail to respond with utmost willingness if consideration is given to the sufferings of the allied countries. If wheat is banned we will get along without it—cheerfully for the most part. Let's petition Mr. Hoover to ration us at once.

And there are other things that we can remedy if we will. When France can give her people but ½ ounce of sugar per capita per day and England and Italy's ration is 1 ounce, it is not right or human for American people to go on using 4 ounces per day for each person—more than our systems really need.

In school lunches: If one mother sees the need of the greater number and puts up dark breads, cakes with no frosting and other simple nourishing fare, while other mothers continue to use the old ways of lavish and unnecessary adornment of foods for their children's lunches, it makes sacrifice hard for the other children and other mothers.

The spirit of co-operation in food substitution should sweep every neighborhood and make public suppers, food for threshing gangs and other community workers all conform to the needs of this crisis. I recently saw a dinner set before a long tableful of threshers by a woman who knew she was not doing right in her lavish furnishing of food varieties. Yet she felt bound to do so because all the women of the section were still setting out the old-style meals, tho many could ill afford to. Besides meat, marmalades and pickles and vegetables in variety, there were white bread, two kinds of pie, cheese, cookies, two varieties of cake, coffee with cream and sugar. And those men, with plates heaped high with choice viands, were saying, "We don't know here what sacrifice means, and it will be good for us all." Let us take these men at their word, and serve them, our families, our guests and our transient boarders with nourishing fare, with absolutely no frills or wasteful duplications.

I have used a 69-cent coffee mill, with glass hopper, for the past year. We never raised wheat until the past two years; now I make almost daily use of this little mill in grinding wheat of our own raising, and the family prefers the delicious all-kernel wheat products which I make to the former devitalized white flour products that I used to set before them. My mill grinds as fine flour as the usual commercial graham flour, and by sifting it a little a nice yeast bread is made, tho I prefer the whole flour product and usually use it. Rye, barley and corn are also put thru the little mill successfully, to make delicious cereals and flours.

If a gasoline engine is available, a mill run by power can be had for $6 to $9 for family use, then all the grain on the farm can be ground for stock at home if desired by using a larger mill. Not only will we thus be conserving the wheat supply, but our living expenses will be greatly reduced. — Mrs. M. G. Feint, Broome Co., N. Y.

HONEY INSTEAD OF SUGAR

The request of the United States Food Administrator that honey be substituted for sugar where possible necessitates that the average housewife have a better knowledge of honey and its uses.

Honey consists of four parts sugar to one part water, on account of which water percentage its fuel or energy value is one-fifth less than that of sugar, or about 1,500 calories per pound compared with 1,800 calories in sugar. For practical use as a food we may say that an ounce of honey (a tablespoonful) furnishes the body with 100 calories of energy.

Since honey is gathered from many different kinds of flowers, it has varying degrees of sweetness as well as differences in color. Clover honey is light-colored, almost white, and is preferable to the amber-tinted or dark-colored honey. The amber-tinted honey is gathered from golden-rod, sunflower, Spanish needle, milkweed and horsemint, while the darkest honey comes largely from buckwheat. Price of the light-colored or clover honey is usually 1 to 2 cents per pound higher than that of either of the others. While the light honey is preferable, even at the higher price its food value is no greater than that of the amber-tinted or dark honey, pound for pound.

Comb honey, in the square or slightly rectangular-shaped sections, usually affords 14 to 16 ounces per section. Extracted honey is usually marketed in bottles or glass jars of one-, five- or ten-pound sizes. It is drawn from the cells of the comb usually with a centrifugal machine in such a way that the comb is left intact. Combs from which the honey has been extracted are put back in the sections or supers, to be refilled by the bees.

Extracted honey sells at about the same price as comb honey. The only advantage in comb honey is that of having a more attractive product for the table. A disadvantage is often met in handling and storing where honey is used in fairly large quantities. Extracted honey is more easily handled on the market.

The common use of honey in American homes has been as a spread to replace syrup, jam or jelly—especially is it appetizing with hot biscuits, gems, waffles and breakfast cakes. It has been less commonly used in place of sugar on cooked breakfast cereals. Many bakers and

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confectioners use honey for sweetening cakes and crackers, claiming that it tends to keep the products moist and sweet much longer than does sugar. Honey may be used satisfactorily in place of molasses and syrups in making brown breads, cakes and muffins. When substituting honey for sugar use it in equal amounts, but since it is one-fifth water, reduce the liquids called for in recipes one-fifth cup for each cup of honey used. By keeping this in mind, one may replace sugar with honey in practically any recipe. The following recipes, which have been found especially good, suggest ways in which honey may be used to advantage:

(Abbreviations.—T, tablespoon; t, teaspoon; c, cup; sq, square.)

Honey Bran Muffins

Ingredients.—1 c bran; ½ c flour; 4 T honey; 2 T melted fat; 1 t salt; 2 t baking powder; ½ c milk.

Mix the dry ingredients, add the honey, milk and fat. Beat vigorously and bake in a hot oven in buttered gem pans.

Ginger Bread

Ingredients.—½ c molasses; ½ c sour milk; 1 t soda; ¼ c honey; 1 c flour; 1 t ginger; ¼ t ginger; ¼ t salt; 2 T melted butter.

Combine the molasses, honey and sour milk to which the soda should be added. Sift together the flour, ginger and salt, and combine with the above mixture. Add the melted butter and beat vigorously. Bake in a shallow pan in a moderately hot oven for 30 minutes.

Nut Brown Bread

Ingredients.—1 c graham flour; ½ c white flour; 1 c cooked oatmeal; 4 t shortening; ½ c honey; 1 egg; 1 t soda; ¾ c sour milk; 1 c dates; 1 c nutmeats.

Mix the ingredients in the order in which they are given, adding soda to the sour milk. Pour into greased pan and let stand 20 minutes. Bake in a slow oven for 45 minutes.

Honey Sandwiches

Cut thin slices of oatmeal bread in circular pieces. Spread one piece with honey, another with butter and put together. These are especially good served with tea.

Honey Spice Cake

Ingredients.—1 c honey; ½ c butter; ¾ c sour milk; 1 t soda; 1 c chopped raisins; 2 c flour; 1 t cinnamon; ½ t nutmeg.

Cream the butter, add the honey and sour milk, to which the soda should be added. Add the remaining ingredients. Bake in layers in a moderate oven.

Date Pudding

Ingredients.—2 c milk; ¼ c honey; 3 T cornstarch; ½ t salt; 1 egg yolk; 1 egg white; ½ c stoned dates.

Combine the first five ingredients. Cook five minutes. Beat the egg white and fold into the above mixture. Cut the dates, place in a dish and pour the custard over them.

Salad Dressing

Ingredients.—3 T flour; 3 T honey; 1 t mustard; 1 t salt; 1 c vinegar; 2 eggs.

Cook together for five minutes the flour, honey, mustard, salt and vinegar. Remove from the stove, beat eggs and beat them into the mixture. Thin with cream.

Gelatine

Ingredients.—1 T gelatine; ½ c cold water; ¾ c strawberry juice; ¾ c cherry juice; 2 T honey; 3 bananas.

Soak the gelatine in cold water for 5 minutes. Heat the fruit juice and honey to the boiling point and pour over the gelatine. Slice the bananas into molds and pour the gelatine over them. Chill and serve with whipped cream.

Cinnamon Rolls

Ingredients.—1 cake compressed yeast; ½ c milk; ½ c water; 4 T sugar; 3 T fat; 1 t salt; 3 c flour; 1 t cinnamon.

Scald the milk and water, and cool. Dissolve the yeast in the lukewarm liquid. Add half the flour and all the fat and sugar, and beat thoroly. Add the remaining flour until the dough is stiff enough to knead. Turn on board and knead lightly. Let rise until it has doubled in bulk. Roll out to an oblong-shaped flat about ½ inch thick, and spread with honey and cinnamon. Roll and cut crosswise in ½-inch slices. Put in greased tins and let rise until light. Bake in a moderate oven for 25 minutes.

Chocolate Cake

Ingredients. — ¼ c butter; 2 sq chocolate; 7 T boiling water; ½ c sugar; ½ c honey; 1 c flour sifted with 2 T cornstarch; ¼ c sour milk with ¾ t soda; 1 egg, beaten.

Pour boiling water over the chocolate and butter. Add the sugar, honey, flour, milk and egg. Beat vigorously. Pour into buttered tin, and bake 40 minutes in a moderate oven. —Mrs. E. L. K., Tompkins Co., N. Y.

Stuffed Cabbage Leaves.—Remove the large outer leaves from firm cabbage, put two together, and on them lay a dressing made of ½ lb. pork sausage, 1 handful of bread crumbs, ½ cup liver cooked and rubbed fine, and seasoning of salt, pepper and herbs. Fold the cabbage leaves around the dressing, tie with twine, lay in hot soup stock and cook 30 minutes. Remove, clip the twine after the rolls are arranged on platter, and serve with brown sauce flavored with tomato catsup.—Mrs. L. M. Thornton, Tioga Co., N. Y.

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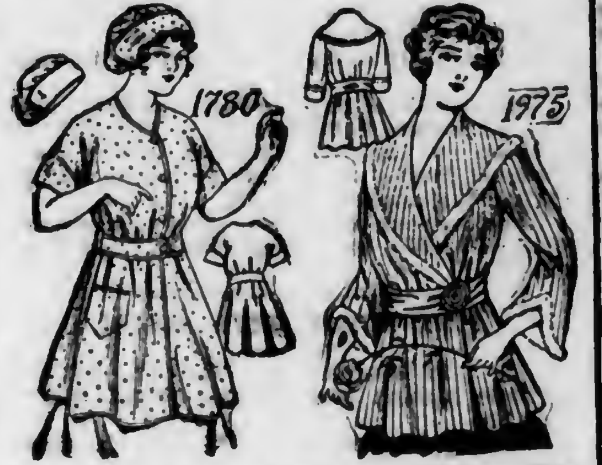

1975.—Ladies' House Sack.—The right front overlaps the left at the closing. The sleeve may be in either of the two styles illustrated. The pattern is cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 3½ yards of 44-inch material for a 36-inch size. Price, 10 cents.

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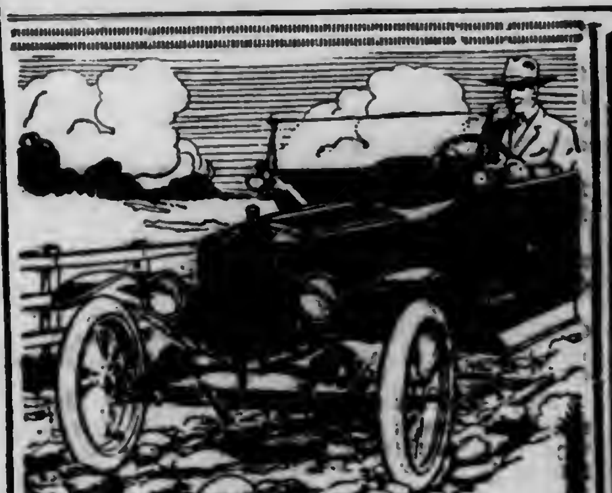

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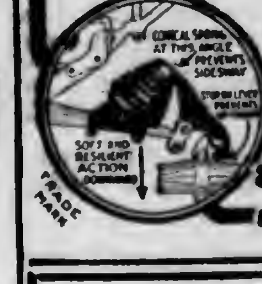
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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Mar. 18, 1918.

A slight reaction appears to have taken place in the potato market, and instead of a weak draggy movement the demand is quite active and the light supplies are moving more freely at the higher prices. Pennsylvania potatoes are now selling at $1.60 to $1.80 per cwt. generally, with a few sales of extra fancy at $2 per cwt. New York state potatoes sell from $1.50 to $1.65 per cwt. Jersey potatoes in ⅝-bushel baskets are moving steadily at 50 to 80 cents per basket. Eastern Shore barrels are in light supply and sell from $1.75 to $2.25, mostly at $2 per barrel.

Sweet potatoes are in more liberal supply and the market is slightly weaker; Jerseys sell from $1.20 to $1.30 per ⅝-bushel basket and Maryland and Delaware in bushel hampers from $1.40 to $1.65 with an occasional fancy lot at $1.75. No. 2's are drawing from 75 cents to $1.25 per hamper, with mediums selling mostly at $1.25.

Vegetables

Dried beans remain practically without change. Marrows sell from $15 to $15.25; pea and medium, $13.50 to $14; red kidneys, $13.75 to $14. With supplies of asparagus increasing daily, the market is gradually declining. At this writing Colossal is selling at $6 to $7 per dozen bunches; fancy, $4 to $5.50; extras, $3 to $4; culls, $2.50 to $3. As car lots are now about to make their appearance, lower prices of course will have to prevail. Florida green beans are much more plentiful and prices much lower than last week, with sales being made from $2 to $3.50 per hamper. Wax beans are also selling from $2 to $3.50 per hamper. New beets have been in light supply and the market is firmer at $1.75 to $2.50 per crate. Old beets are in liberal supply and the market easy at $1.25 to $1.75 per barrel. Old carrots are for the most part very poor and sell generally from $1 to $1.25 per barrel. Fancy carrots, however, are active and the market generally inactive. Most stock has to be trimmed and sales are now being made from $17 to $23 per ton. New cabbage is in liberal supply and the market ranges generally from 75 cents to $1.15 per hamper. Cauliflower is in lighter supply and prices are higher, good stock now selling at $1.50 per crate. The prospects are for still higher prices. Cucumbers continue very scarce and a few hot house cucumbers that are arriving are selling generally from $1.75 to $2 per dozen. Celery is very plentiful and the market weak, Florida stock selling generally from $1.25 to 1.75 per crate, with some poor selling as low as 75 cents. Pennsylvania celery continues about steady at 8 to 10 cents per bunch. Egg plants, while still in light supply, are a little easier, ranging from $3 to $4.50 per crate. Ecarol is mostly poor and moving hard at $1.25 to $2.25 per barrel. Endive is higher, selling up to $3 to $4 per barrel as to quality. There is no change in the horse radish market, sales ranging from $5 to $7 per barrel.

Lettuce is in lighter supply and the market quite a little firmer. Best Floridas are now selling at $2 to $2.50 per hamper, with poor from $1 up, as to quality. California Iceberg is much higher, best selling at $3 to $3.25 per box, with poor down to $2.25. Onion market is very dull, supplies are more than ample for all demands and much of the stock is very poor. Most onions are selling from 75 cents to $1 per 100-lb. sack with the very best bringing $1.25. Parsnips are very plentiful and the market is easy at $1.50 to $2 per barrel. Peas are in light supply, but the quality is generally very poor and while sales are being made at $2 to $3.50 per hamper, strictly fancy would sell much higher. Parsley is in abundant supply and the market is weak at $1.50 to $2.50 per barrel. Peppers are firm at $4 to $5 per crate. Romaine is in good demand at $1.25 to $1.50 per hamper. Scullions from Delaware are in liberal supply, but moving freely at 75 cents to $1 per 100. Spinach has sold mostly at $2.50 per barrel, with extra fancy at $2.75, and poor at $2.25.

Tomatoes are a little more plentiful, and the market is fully $1 per crate lower than last week, but at the same time are bringing high prices. Fancy 144-size is selling from $4.25 to $5 per crate, and choice 180-size $3.75 to $4.50, with the Gems of 216 size at $2.75 to $3.25. Hot house tomatoes continue about steady at 35 to 45 cents per pound. Under much more liberal supply, rutabagas are much easier, with $1.50 being top for fancy medium size stock while large and undesirable sell down to 75 cents per cwt. Watercress is in light supply and active at 1½ to 3 cents per bunch.

Fruits

The apple market is showing practically no change, with offerings moderate but ample. A few strictly fancy apples are bringing extreme values, for instance some extra fancy Baldwins selling at $5.50 to $6; York Imperials, $5.50; Greenings, $6; Ben Davis, $4.50. This class of fruit is in the minority and most sales of all varieties range generally from $3 to $5. As the great majority are running only from poor to fair quality, sales are being made on about the following basis: Baldwins, $3 to $5; extra fancy, $5.50 to $6; Ben Davis, $2.50 to $4; extra fancy, $4.25 to $4.50; Ganos, $3 to $4.25; Greenings, $3 to $6; Kings, $3 to $5.50; York Imperials, $3 to $5; extra fancy, $5.25 to $5.50; Winesaps, $3.50 to $6; Hubbardsons, $3 to $5; Spys, $3 to $5.50; Stayman Winesaps, $3 to $5.50; Russett, $3 to $5. Unclassified, mixed, common, $1.50 to $3.50. Box apples are also showing quite a range in quality and price. Winesaps have sold all the way from $1.25 to $3.25; Rome Beauty, $1.25 to $2.50; Spitz, $1.25 to $2.50; Newtowns, $1.35 to $2; Pearmains, $1.50 to $2.25. Strawberries are in very light supply, only a few refrigerators have arrived on the market so far this week and prices have ranged all the way from 35 to 45 cents per quart.

Poultry

Live poultry is in light supply and the market very firm and active at the high prices prevailing. Soft meated roosters are selling at 35 to 40 cents; staggy young roosters, 30 to 32 cents; old roosters, 28 to 32 cents; ducks, 32 to 40 cents; geese, 34 to 38 cents; guineas, $1 to $1.40 per pair; pigeons, 35 to 45 cents per pair.

Eggs

The egg market is still unsettled and fluctuates a little from day to day. Prices at the present time are somewhat higher than those prevailing last week and indications are that values will not go very much lower this season. The consuming demand is very strong and with the storage season approaching it looks as tho the market will rule somewhere around the prices now prevailing. Current receipts ae selling at this writing at 38 to 39 cents per dozen; with firsts bringing from 39½ to 40 cents per dozen.

PITTSBURGH PRODUCE

Pittsburgh, Pa., Mar. 18, 1918.

Potatoes, car lots, $1.25@1.35 cwt; sweets, $1.75@2 hamper. Onions, yellow, $1.25@1.50 per 100-lb. bag; do., white, $1.75@2. Cabbage, $30@35 ton. Parsnips, $1.25@1.50 bu. Rutabagas, $2.50@2 bbl. Turnips, $1@1.25 bu. Carrots, $1@1.25 bu. Lettuce, $2@2.50 hamper. Celery, $1.25@3.50. Tomatoes, $3.50@4 crate. Radishes, 30@50c bch. Asparagus, $6@7.50 case. Rhubarb, 70@80c bundle. Apples, $4@6 bbl; $1.75@3 box. Strawberries, 25@35c qt.

Poultry.—The poultry market was quiet and prices remained at high levels. Hens, 34@40c lb; springers, 38@40c; broilers, 42c; roosters, 32c; ducks, 35@37c; turkeys, 38@43c.

Dairy Products.—Elgin prints, 48@48½c; Elgin tubs, 47@47½c; Ohio and Pennsylvania dairy, 43@45c. Cooking butter, 35@36c. New York cheese, 28½@29c; do. Ohio 26½@27c. Selected eggs, 39@40c; eggs at mark, 36½@37c.

Hay and Grain.—No. 2 yellow ear corn, $2@2.07 bu; No. 3 yellow shelled, $2@2.02. No. 2 white oats, $1.02½@1.03; No. 3 do., $1.01@1.01½; standard oats, $1.02@1.02½ bu; No. 1 timothy hay, $33@33.50 ton; No. 2 do., $31.50@32. No. 1 clover hay, $32.50@33; No. 2 do., $30.50@31.50. No. 1 mixed hay, $32.50@33 ton. No. 1 light mixed, $31.50@32. Rye straw, $20@20.50. Oat straw, $18.50@19.50. Wheat straw, $18.50@19.

BALTIMORE PRODUCE

Baltimore, Md., March 18, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.50@1.75 cwt; do., New York, $1.50@1.75 cwt; Eastern Shore, $1.25@1.50 cwt. Sweet potatoes, yellow, $4@4.50 bbl; $1.50@1.75 hamper. Cabbage, danish, $20@25 ton. Celery, New York, $1.50@3.50 crate; do., native, 6@8c bunch. Lettuce, 75c@$1.50 basket. Onions, yellow, $1.25@1.50 per cwt.; red, $1.25@1.50 per cwt. Tomatoes, $4.50@5 crate.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5.50; New York State, $4@6; do., No. 2, $3.50. Strawberries, 15@35c qt.

Butter.—Creamery, western, extras, 50c; firsts, 48@49c; pound prints, 51@52c; do., firsts, 49@50c. Nearby creamery, 45@46c; do., firsts, 44@45c. Dairy prints, 35@36c; do., firsts, 34@35c.

Eggs.—State, Pennsylvania and nearby, 35c; Eastern Shore and Virginia, 35c; Southern, 33@34c.

Live Poultry.—Chickens, 38@40c; do., rough, 32@33c; old roosters, 25@27c; ducks, 32@34c; turkeys, 28@32c.

Grains.—Wheat, $2.05@2.15. Corn, ear, $8.75@9 bbl. Oats, standard white, $1.06½@1.07; No. 3 white, $1.05½@1.06½. Rye, $2.60; do., in bag lots, $2.25@2.40.

Hay and Straw.—No. 1 timothy, $33; standard timothy, $32@32.50; No. 2 timothy, $31.50@32; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover, $33@34; No. 2 clover, $31@32. No. 3 do., $28@29. No. 1 straight rye straw, $24@25; No. 1 tangled, $20@21; wheat straw, $18.50@20; oats straw, $17@21.

Mill Feed.—Middlings, $40.50; do. white, $47.50. Winter bran, $38.50.

LANCASTER PRODUCE

Lancaster, Pa., Mar. 18, 1918.

For the first time since the war started, good sized potatoes were offered on the Central market at $1.10 per bushel. So many potatoes have appeared in the past week that they have been peddled from door to door. There was a brisk demand for eggs at 35 cents per dozen. Butter was in abundant supply and the price lowered to 50 cents per lb.

Butter and Eggs.—Creamery butter, 50c lb; country butter, 50c lb; fresh eggs, 35c dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Produce.—Tomatoes, 20c box; lima beans, 18c pt; celery, 5@10c bch; lettuce, 5@12c head; sweet potatoes, 25c ½ pk; potatoes, $1.10 per bu; 12@20c ½ pk; spinach, 30c ½ pk; apples, 20@30c ½ pk.

Miscellaneous.—Mince meat, 16c lb; corn-meal, 10c qt; ponhaus, 10@12c lb; lard, 32c; hominy, 6c pt.

Grain Market.—Milling wheat, $2 bu; new ear corn, $1.65; rye, $1.65; oats, 70c; No. 1 timothy hay, $27; clover hay, $22; wheat straw, $16; oat straw, $10.

YORK PRODUCE MARKET

York, Pa., Mar. 18, 1918.

There are no changes to record in prices last week. There is plenty of kinds of seasonable produce to be had at fair prices. There seems to be a boycott on eggs. Since the consumers were able to buy them two weeks ago as low as 22 cents per dozen, they take very few at the prices as they now stand. The dealers hold the price up to 32 to 34 cents per dozen. Efforts have been made to head the dealers off and compell the farmers to sell low enough to meet the buyers' ideas but so far it has failed to operate successfully.

Eggs.—32@34c per dozen.

Butter.—Country, 45@48c lb; separator, 48@50c lb. Milk, 10c qt.

Poultry.—Roosters, 23@37c lb; dressed, 75c@$1.75 each.

Vegetables.—Potatoes, 10@15c ½ pk; 75c@$1 per bu. Cabbage, 10@17c head. Lettuce, 5@10c head. Beets, 5c bch. Radishes, 6c bch. Onions, 5@10c bx; 20c ½ pk. Lima beans, 35@40c qt. Soup beans, 15@17c pt. Celery, 5@10c stalk. Turnips, 20@25c ½ pk. Corn meal, 10@12c qt.

Fruit.—Apples, 10@40c ½ pk.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c; backbone, 25@28c; spare ribs, 32c; tenderloin, 45c; steak, 32@38c; pudding, 24c; lard, 30@32c; hams, cured, 40@45c.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, $1; rye, $1.85; middlings, $2.65@2.80 cwt; bran, $2.45 cwt.

Wholesale Grain Market.—Wheat, $2.12@2.15; corn, $1.72; oats, 93c; rye, $1.70; bran, $48 per ton; middlings, $50@55 ton.

NEW YORK PRODUCE

New York City, Mar. 18, 1918.

Butter weak and slow. Cheese slightly lower. Eggs higher under light receipts. Dressed poultry quiet, but live poultry scarce and selling promptly. Fancy apples sell readily. Potates and onions firmer. Most vegetables arriving in poor condition.

Butter. — Creamery, extras (92 score), per pound, 43@43½c; higher score, 44@44½c; thirds to firsts, 40@43c; state dairy, 37@43c; ladles, 31@38c.

Cheese. — Colored specials, 25@25½c; Daisies, 26@26½c.

Eggs.—Fresh gathered extras, 43c; extra firsts, 42@42½c; nearby white, fine to fancy, 47@48c; ordinary to good, 45@47c; browns, 43@44c.

Vegetables and Greens. — Beets, per bbl. $1@2.50. Onions, per 100-lb bag, 50c@$1.75. Potatoes, Jersey, $1.40@2 per 100 lbs.; state and western, $1.80@2.12 per 100 lbs. Carrots, 50c@$1.25 per barrel.

Apples.—Winesap, $4@6; York Imperial, $3.50@4.50; Twenty Ounce, $4@5.25; King, $4@6; Baldwin, $3.50@5.50.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Mar. 18, 1918.

Beef Cattle.—The market for cows was slightly higher under light offerings and a fairly active demand. Other kinds ruled firm, but without quotable change. There was still more or less complaint of stock being delayed in transit.

Steers, choice, $12.75@13.75; extra, higher; fair to good, $11@12.50; bulls, $8@10.50; cows, fat per lb., choice, 9@10c; fair to good, per lb., 7@8c; bologna cattle, 5½@6c; calves, extra choice, $17@17.50; fair to good, $15@16; common, $12@14; Tennessee and southern, $8@15.

Sheep and Lambs.—The market for sheep ruled firm, with demand readily absorbing the limited offerings. Lambs were higher.

Sheep.—Wethers, extra, $14@14.50; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $12@13. Lambs.—Choice, $17.75@18.25; do., medium, $16.50@17; inferior, $14.50@16.

Hogs. — Transportation difficulties were holding up stock to some extent. The market ruled firm, with demand fairly active. Quotations for best western, $20@20.50.

City Dressed Stock.—The market was generally firm and demand absorbed the limited offerings. Prices of calves and hogs were slightly higher.

Steers, 16@21c; heifers, 15@19c; cows, 12@18c; calves, 24@25c; southern and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 24@29c; extra, 30c; hogs, 25c.

BUFFALO LIVE STOCK

Buffalo, N. Y., Mar. 18, 1918.

Cattle.—Receipts, 2,000. Good grades were strong; common grades steady. Prime steers, $13.50@14; shipping steers, $13@16.25; butchers, $10@12.75; yearlings, $11.75@13.25; heifers, $8@11.75; cows, $5@11; bulls, $7@11.25; stockers and feeders, $7.50@10; fresh cows and springers, $65@135.

Calves.—Receipts, 1,300; steady; $7@19.

Hogs.—Receipts, 12,800; slow; heavy, $18.10@18.40; mixed, $18.50@18.65; Yorkers, $18.50@18.75; light Yorkers and pigs, $18.25@18.50; roughs, $16.50@16.75; stags, $13@14.

Sheep and Lambs. — Receipts, 6,000; steady; clipped lambs, $15.25@15.50; wool lambs, $13@19; others unchanged.

NEW YORK LIVE STOCK

New York City, Mar. 18, 1918.

Beeves.—Receipts, 2,790; steady; steers, $10.25@13.80; bulls, $7@12; cows, $4.50@15.

Calves.—Receipts, 2,350; steady; common to choice, $16@19; culls, $12@15.

Sheep and Lambs.—Receipts, 5,660; sheep nominal; lambs weak; fair to prime, $18.50@19.12½; clipped, $15.75.

Hogs.—Receipts, 7,900; steady; mediums, $18.75@18.90; roughs, $17.25@17.50; pigs, $18.50.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Mar. 18, 1918.

Cattle higher; supply light; prime, $12.75@13.50.

Sheep higher; supply light; prime wethers, $14@14.70; culls and common, $6@8; lambs, $15@18.85; veal calves, $17@17.50.

Hogs lower; receipts, 30 double-decks; prime heavies, $18.25@18.40; mediums and heavy Yorkers and light Yorkers, $18.75@18.90; pigs, $18.25@18.40; roughs, $15@16.25.

NEW YORK HAY AND GRAIN

New York City, Mar. 18, 1918.

Feed.—The market was without particular feature on Saturday, and no fresh offerings were reported. Some western mills were willing to sell certain qualities for prompt shipment, but prices asked were entirely too high. Furthermore, transportation difficulties will not allow a fee movement, and delivery might not be made for some time. The consuming trade is in the market simply for requirements, for with the more seasonable weather and the opening of pastures much of this inquiry will be eliminated. City mills at the present are not offering and are simply trying to meet contracts.

All spot prices on mill feed have been withdrawn.

Hay and Straw.—The market is still weak with very heavy offerings at all track delivery points. Top quotations not realized at upper Manhattan stations, altho they are occasionally reached at 33d street and at Brooklyn Eastern District Terminal.

Hay.—No. 1 large or small bales, $32@34; No. 2, $28@31; light clover, mixed, $28@30. Rye straw, $21@28 per ton.

Corn.—No. 3 yellow, $1.81½.

Oats.—No. 2 white, $1.04½@1.06.

Rye.—$2.75.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Mar. 18, 1918.

Baled Hay and Straw.—Receipts, 96 tons of hay and 1 car of straw. The hay market ruled weak and barely steady, under fairly liberal offerings. Straw was well cleaned up at full figures.

Timothy hay, according to location. No. 1 large bales, nominal, $31@32; No. 1 small bales, nominal, $31@32; No. 2, $29@30; No. 3, $26@27; sample, $21@23; no grade, $17@19. Clover-mixed hay, light mixed, $29@30; No. 1 do., $27.50@28.50; No. 2 do., $24.50@25.50.

Straw.—No. 1 straight rye, $21@21.50; No. 2 do., $20@20.50; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1 wheat straw, $19@19.50; No. 2 do., $18@18.50; No. 1 oat straw, $19@10.50; No. 2 do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $2@2.02.

Oats.—No. 2 white, $1.07@1.07½.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Mar. 18, 1918.

Butter.—As usual on Saturday there was very little wholesale trading, and the market was nominally unchanged, but had a weak tone. At the Produce Exchange, extra creamery was offered at 45 cents.

Western, fresh, solid-packed creamery, extra, 45c; higher-scoring goods, 46@47c; extra firsts, 44½c; firsts, 44c; seconds, 43@43½c; sweet creamery, extra, 46c; under grades, 44@45c; nearby prints, fancy, 49c; do. average extra, 46@48c; firsts, 44@45c; seconds, 43@43½c; special brands jobbing at 50@52c.

Receipts, as compiled by the Bureau of Markets, 1734 tubs of butter and 2906 cases of eggs.

NEW YORK MILK MARKET

New York City, Mar. 18, 1918.

The market is still oversupplied, with demand only moderate. The question as to whether the Federal Milk Commission will continue after April 1 is under discussion. At first the distributors objected to its work, because it showed no tendency to consider a method of relieving them of the serious burden of the surplus. At a meeting held yesterday, the chief obstacle to a decision was that raised by the condensers, who felt that they could not afford to pay the rates set by the Commission for fluid milk. The condensers who were a party to the agreement to accept the rulings of a Federal Commission here withdrew. It is expected, however, that they will come in again. Should they not do so the Dairymen's League will set its own sales rates as it did last year, and the commission will discontinue its activities.

Federal Commission rates for March to the producer of Grade B in the first district are $3.10 a hundred for 3 percent milk; $3.34, or approximately 7.1 cents a quart for 4 percent plus 12 cents recoup on account of the loss on December milk. Receipts of milk and cream in 40-quart cans for week ending March 16 were as follows:

Railroad	Milk	Cream
Erie	37,477	2,021
Susquehanna	6,624	32
West Shore	10,105	910
Lackawanna	59,990	975
N. Y. Central (long haul)	112,248	1,513
Ontario	35,004	2,423
Lehigh Valley	43,952	655
New Haven	6,010	50
Pennsylvania	10,225	180
Other sources	5,975	175
Totals	327,610	8,934
Same week a year ago	359,360	12,140

WOOL TRADE REVIEW

The Boston "Commercial Bulletin" of March 16 said:

"There has been a fairly keen interest in the local market this week in all medium wools which are available and free of Government control. Fine wools also are held more firmly, altho relatively less strong than medium grades. The Government terms for transferring foreign wools under its import options indicate that it will take the great bulk of the wool included under those options. Manufacturers report a very firm situation with little effort on their part to sell goods. New clip wools apparently have not begun to move in the West, yet, owing to the lack of transportatin. The Government has stated that it has no intention to interfere with the marketing of this year's domestic clip."

Ohio and Pennsylvania Fleeces: Delaine, washed, 83@85c; delaine, unwashed, 75c; fine unmerchantable delaine, 79@80c; ½-blood combing, 77@78c; ⅜-blood combing, 77@78c.

Michigan and New York Fleeces: Fine unwashed, 63@64c; delaine, unwashed, 73c; fine unmerchantable delaine, 79@80c; ½-blood, unwashed, 75@76c; ⅜-blood, unwashed, 75@76c; ⅜-blood, unwashed, 77c.

Wisconsin, Missouri and average New England: ½-blood, 70@72c; ⅜-blood, 75@76c; ¼-blood, 74@75c.

A Matter of Real Estate

By Myra Kelly

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Four weeks of teaching in a lower East Side school had deprived Constance Bailey of many of the "Ideals in Education" which, during four years at college, she had trustingly acquired. But, despite many discouragements, despite an unintelligible dialect and an autocratic "Course of Study", she clug to an ambition to establish harmony in her kingdom and to impress a high moral tone upon the fifty-eight little children of Israel entrusted to her care. She was therefore troubled and heavy of heart when it was borne in upon her that two of her little flock—cousins to boot, and girls—had so far forgotten the Golden Rule as to be "mad on theirselves und wouldn't to talk even", as that Bureau of Fashionable Intelligence, Sarah Schrodsky, duly reported.

"Und Teacher," Sarah continued, "Eva Gonórowsky's mamma has a mad on Sadie Gonorowsky's mamma, und her papa has a mad on her papa, und her gran'ma has a mad on both of papas und both of mammas, und her gran'pa has a mad somethin' fierce on both of uncles, und her auntie—"

Here Miss Bailey sent the too communicative Sarah to her place and called the divided house of Gonorowsky to her desk for instant judgment. And as she held forth she was delighted to see that her words were falling upon good ground, for the dark and dainty features of her hearers expressed a flattering degree of conviction and of humility. She was admiring the wonderful lashes lying damp and dark on Eva's smooth cheek when the beautiful eyes unclosed, gazed straight across the desk at Sadie, and Eva took a flying leap into Teacher's lap to cling with arms and knees and fingers to her chosen refuge.

"Oh, Teacher, Teacher," she wailed, "Sadie makes on me such a snoot I got a scare over it."

Miss Bailey turned to the so lately placid face of Sadie in search of the devastating "snoot", but met only a serene glance of conscious guilelessness and the assurance:

"No ma'an, I don't makes no snoot on nobody. I get killed as anything off of my mamma sooner I makes a snoot. It ain't polite." This with a reassuring smile and direct and candid gaze.

"Teacher, yiss ma'an, she makes all times a snoot on me," cried the now weeping Eva, "all times. She turns her nose around, und makes go away her eyes, und comes her tongue out long. On'y I dassent to fight mit her while I'm cousins mit her. Und over cousins you got all times kind feelings."

"Well, Sadie," Teacher questioned, "what have you to say?"

The dark eyes met Teacher's with no shadow in their depths as Sadie uttered her denial:

"I never in my world done no snoot."

A shudder of admiring awe swept over the assembled class—followed by a gasp of open contradiction as Sadie went on with her vindication. For Sadie's snoots were the envy of all the class. Had not Morris Mogilewsky paid three cents for lessons in the art, and, with the accomplishment, frightened a baby into what its angry mother described as "spine-yell convulsions"? And now Sadie was saying, "I couldn't to make no snoot. Never. But, Teacher, its like this: Eva makes me whole bunches of trouble. Bertha Binderwitz und me is monitors in the yard when the childrens comes back from dinner. So-o-oh, I says, 'front dress,' like you says, so the childrens shall look on what head is in front of them. On'y Eva she don't 'front dress' at all, but extra she longs out her neck und rubs on me somethin' fierce—"

"Its a lie!" interrupted Eva gently. "I don't make nothing like that. I stands by my line und Sadie she makes faces on me with her hand. It ain't polite." This with plaintive self-righteousness. "No ma'an, it ain't polite—you makes snoots mit your hand like this." And as Eva illustrated with outspread fingers and a pink thumb in juxtaposition to a diminutive nose, Teacher, with uncertain gravity, was forced to admit that snoots of that description are sanctioned by few books of etiquette.

"Now, my dear little girls," said she, "this quarrelling must stop. I want you to kiss each other as cousins should."

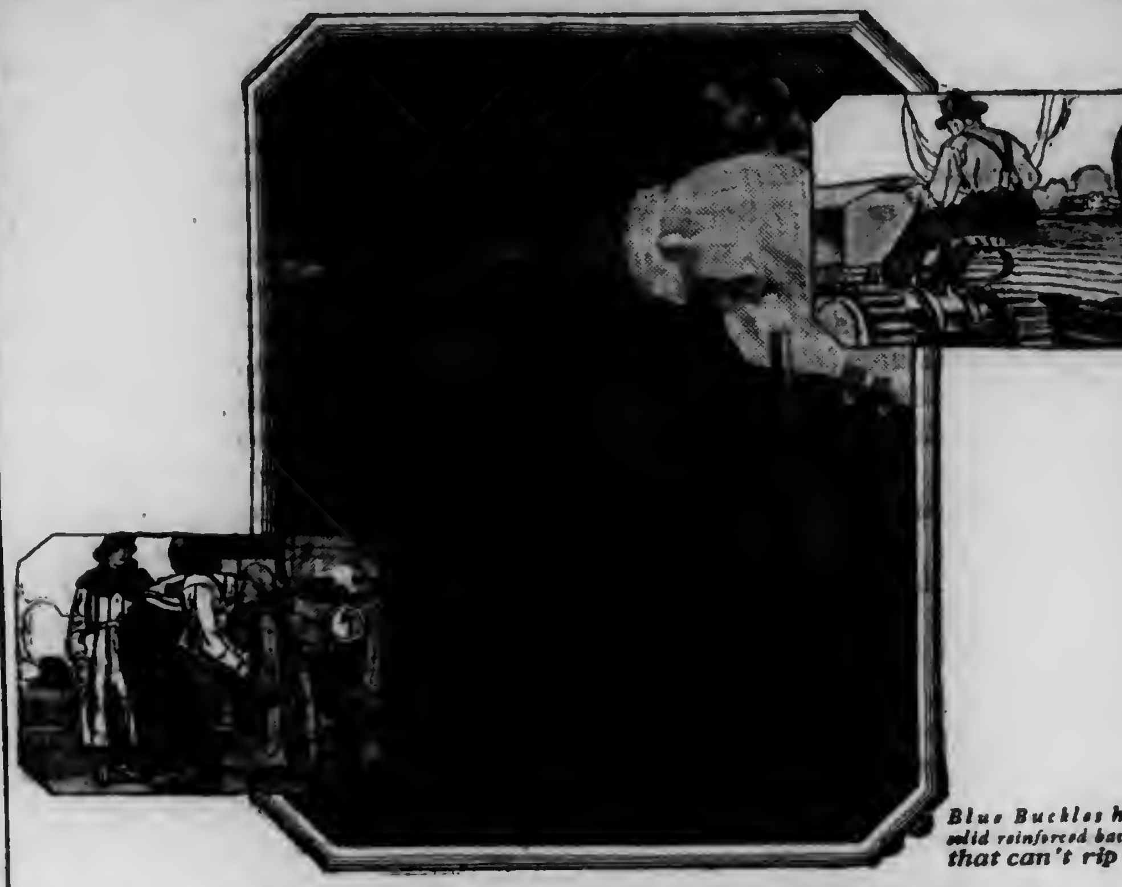
This suggestion was a distinct failure. Eva and Sadie, with much fluttering of aprons and waving of curls, sought opposite corners of the schoolroom, while up started Sarah Schrodsky with: "Teacher, they couldn't to make no kissing. They're mad on theirselves 'cause their mammas has a mad. Sadie's mamma says like this on Eva's mamma, 'Don't you dast to talk to me—you lives by the fifth floor und your man is a robber.' Und Eva's mamma says—"

When Teacher had managed to silence Sarah she led the weeping Gonorowskys back to their places and the scholastic world wagged on in outward tranquillity.

Hostilities were temporarily suspended some days later owing to the illness of Sadie, by far the more aggressive of the opposing parties. Eva led a placid life for three peaceful days, and then—as by law prescribed and postal card invited—Sadie's mother came to explain her daughter's absence. Large of person, bland of manner, in a heavy black shawl and a heavier black wig, Mrs. Lazarus Gonorowsky stood beaming and bobbing in the hall.

"I likes I should Sadie Gonorowsky's teacher see," she began, in the peculiar English of the adult population of the East Side. Mrs. Gonorowsky could neither use nor understand her young daughter's copious invective. Upon being assured that the diminutive form before her was indeed clothed with authority, she announced:

"Comes a letter I should by the school come. I was Sadie's mamma." Here she drew from the inner recesses of the black shawl a bundle which, being placed in a perpendicular position, proved to be the most



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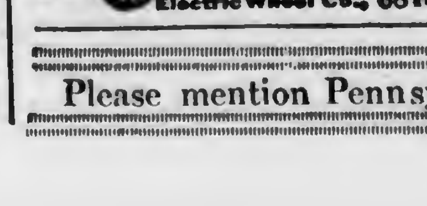

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recent addition to the Gonorowsky household. She smoothed it with a workworn but tender hand, and repeated in a saddened voice: "Yes, ma'am, I was her mamma und she lays now on the bed '

The increasing sadness of Mrs Gonorowsky's announcement and its sinister phraseology startled Teacher. "Not dead!" she cried. "Oh, surely not dead!"

"Sure not," was the indignant response. "She's got such a sickness she must lay on the bed, und comes the doctor. Sadie's pap hold much on that child, Miss Teacher, und all times he has a worry over her Me too. She comes by the school tomorrow maybe, und I ask you by a favour you should do me the kindness to look on her. So she feel again sick she should better on the house come. She say, 'Oh, mamma, I got a lovely teacher; I likes to look on her the while she has such a light face.' "

Having thus diplomatically led up to a question, Mrs. Gonorowsky with great suavity asked, "Sadie is a good girl, hein?"

"Oh, yes, indeed."

"She is schmardt, hein? She don't make you no troubles?"

"Well," Miss Bailey answered, "she has bothered me lately by quarrelling with her little cousin, Eva."

"So-o-oh!" exclaimed Sadie's parent ponderously. "So-o-oh, Eva Gonorowsky makes you troubles; she is a bad girl—I tell Sadie—Sadie is a good girl—I tell her she should make nothings with Eva soch a bad girl. For what you not put her back by baby class? She is not schmardt."

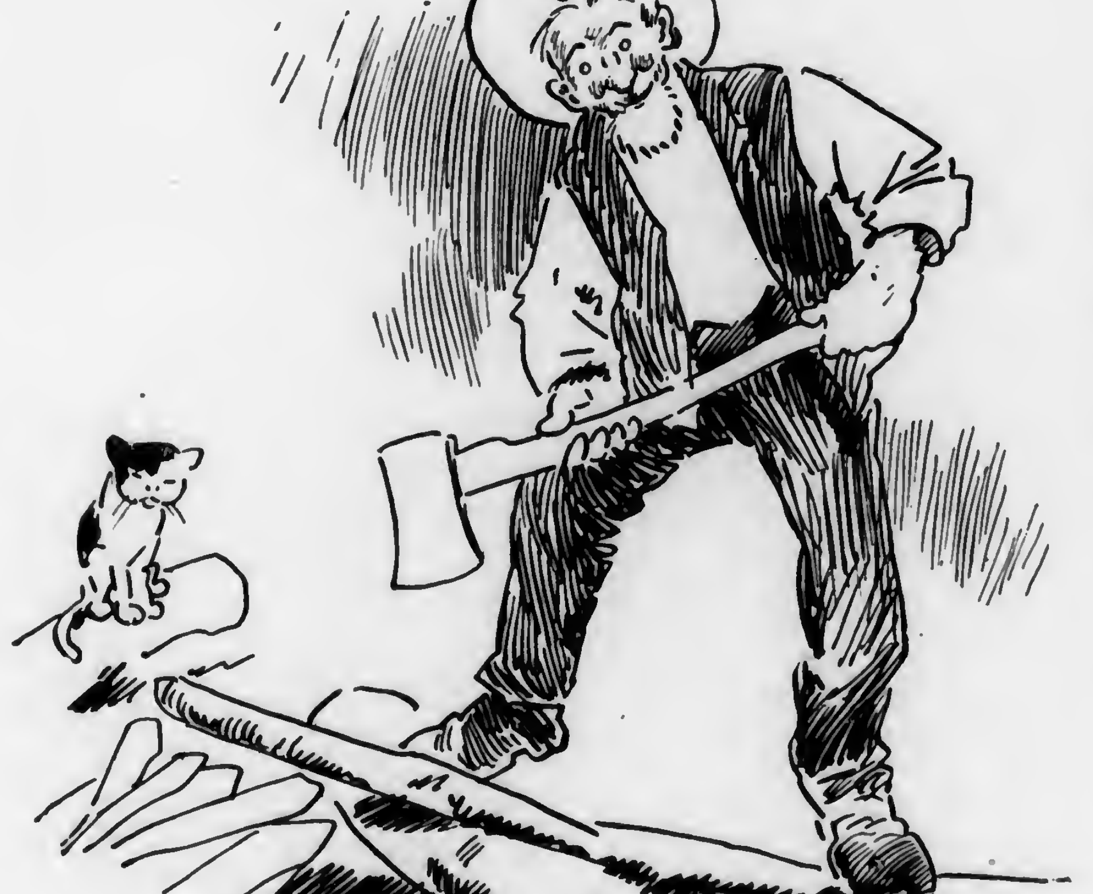
"Oh, but she is; she is a bright little thing," cried Teacher. "I couldn't think of putting her back. She's a dear little girl and I can't imagine why Sadie quarrels with her."

Mrs. Gonorowsky drew her ample form to a wonderful erectness, readjusted her shawl, and answered with much stateliness:

"It was a trouble from off of real estate." With dignity and blandness she proceeded to kiss Teacher's hand, and signified entire willingness to entrust her precious Sadie to the care of so estimable a young person, inquired solicitously if the work were not too much for so small a lady, and cautioned the young person against rainy mornings. Had she a mackintosh? Mr. Gonorowsky was selling them off that week. Were her imperceptibles sufficiently warm? Mr. Gonorowsky, by a strange chance, was absolutely giving away "fine all from wool" imperceptibles, and the store was near. Mrs. Gonorowsky then withdrew, leaving a kindly sentiment in Teacher's heart and an atmosphere of ironing-boards and onions in the hall. On the following morning Sadie returned to her "light-faced" teacher, and for one whole day hostilities were suspended.

But on the morning after this truce Eva was absent from her accustomed place and Sadie blandly disclaimed all knowledge of her whereabouts. After the noon recess a pathetic little figure wavered in the doorway with one arm in a sling and one eye in a poultice. The remaining eye was fixed in deep reproach on the face of Isidore Belchatosky, the Adonis of the class, and the eye was the eye of Eva.

"Eva!" exclaimed Teacher. "oh, Eva, what can you have been doing? What's the matter with your eye?"



Uncle Amos says: "We seem to be learnin' some mighty nice things about the other fellow in all of this war business. My boy is camped with a miner, a manufacturer's son and a young millionaire from Wall Street. From what he writes, the same sort of a heart seems to beat in the breast of each. I notice, too, that the rich town women in Mother's Red Cross circle are pretty near as human as the rest of us now that we are all working together. Its a lot of satisfaction knowin' that we are so near alike inside."

"Isadore Belchatosky he goes und makes me this here shiner," said Eva s accusing voice, as the eye under the poultice was uncovered for a moment. It was indeed a "shiner" of aggravated aspect, and Isidore cringed as it met his affrighted gaze. The sling and the bandages were of gay chintz, showing forth adventures of Robinson Crusoe, and their lurid colors made them horribly conspicuous. Friday scampered across Eva's forehead, pursued by savages; and Crusoe, under his enormous umbrella, nestled close to her heart.

"Surely Isidore would never hit a little girl?" Teacher remonstrated.

"Teacher, yiss ma'an; he makes me this here shiner. Sadies she goes und tells him she kisses him a kiss so he makes me a shiner. He's lovin' mit her und she's got kind feelin's by him, the while his papa's got a candy cart. Its a stylish candy cart mit a bell und a horn. So-o-oh I was yesterday on the store for buy my mamma some wurst, und I don't make nothings mit nobody."

Here the poor, half-blind Eva, with her love and talent for pantomime, took a gay little walk past Teacher's desk, with tossing head and swinging skirts. Then with a cry she recoiled from the very memory of her wrongs.

"Come Isidore! Und he hits me a hack on my leg so I couldn't to hold it even. So I falls und I make me this here shiner. Und when my mamma seen how comes such a bile on my bone she had a mad; she hollered somethin' fierce."

One could well sympathize with the harassed Mrs. Nathan Gonorowsky.

"So-o-oh," continued Eva with melancholy enjoyment, "my mamma she puts medsin at a rag und bangages up mine eye. Und now I ain't healthy."

"Sadie Gonorowsky, come here!" commanded Miss Bailey, in a voice which lifted Sadie bodily from the place to which she had guiltily determined to cling. And Sadie went, jaunty of air, but with shifting eyes.

"Isidore Belchatosky, come here!" commanded Miss Bailey, and Isidore slunk after his divinity.

Teacher was savagely angry, but bylaws forbade corporal punishment, and principles—and the Principal—forbade noisy upbraidings. And so with long, strange words, to supply the element of dread uncertainty, she began to speak, slowly and coldly as one ever should when addressing ears accustomed to much sputtering profanity.

"Sadie and Isidore, did you dare to interfere with the life, the liberty and the happiness of our cherished young friend, Eva Gonorowsky? Did you dare?"

"No ma'an," said Sadie with a sob.

"Its a lie!" said Isidore with a snuffle.

"Did you, Isidore, allow yourself to be tempted by beauty to such inconceivable depravity as to blacken Eva's eye?"

"No ma'an. Self done it."

"Did you, Sadie, descend so low as to barter kisses with Isidore Belchatosky?"

"No ma'an," this with much scorn. "I wouldn't to kiss him; he's a scarecat, und he tells out."

"What did he tell?" asked Teacher.

"He tells out how I say I kiss him a kiss so he make Eva a shiner. Und I wouldn't to do it. Never. So he gave me five cents even, I wouldn't to kiss no scare-cat."

"Well, then, why did you promise?"

" 'Cause I couldn't to hit her mineself," said the doughty Sadie. She was inches taller than her victim, and stout withal. "I couldn't, 'cause I ain't so healthy; I'm a nervous child, Teacher, und I was day-before-yesterday sick on the bed."

Here the plaintive plaintiff showed a desire to testify once more, and Teacher appointed three-thirty that afternoon as the hour most suitable for a thoro examination of the case.

When the last arm had been twisted into the last sleeve, when the last chin had been tied into the last shawl, when the last dispute as to ownership in disreputable mittens had been settled, the great case of Gonorowsky vs. Gonorowsky was called. On either side of the desk stood a diminutive Gonorowsky; Eva still plaintive, and Sadie, redly, on the defensive. Directly in front stood that laborer defrauded of his hire, that tool in the hands of guileful woman—Isidore Belchatosky.

"Now," Teacher began, "I want to hear nothing but the truth. Isidore, did you hit Eva?"

"Yiss ma'an."

"What for?"

"For a kiss."

"From whom?"

Here Sadie muttered a threat "to lay him down dead if he tells," and Isidore required promise of safe conduct to his own block before he consented to murmur:

"Sadie Gonorowsky."

"Did you get the kiss?"

"No ma'an."

"Do you know anything about this fight?"

"No ma'an."

"Well, then, you may go home now, and bring your mother with you tomorrow morning."

Isidore left with a heavy heart and the enquiry was continued.

"What has Sadie been doing to you, Eva?" asked Teacher, and Eva, with resigned mien, answered:

"All things," and then details followed. "She makes on me a snoot, she pulls me on the bottom of my hair, she goes und takes her pencil und gives me a stick in my face. When I was marchin' she extra takes her shoes und steps at my legs; I got two swollen legs over her. Und now"—here a sob—"you could to look on how she makes me biles and shiners.'

As Eva's voice droned out these many accusations, Sadie grew more emphatic in her favorite repartee:

"Its a lie! Its a lie! Its a lie!"

"And now, Eva, will you tell me why Sadie has been doing all these naughty things?"

"Teacher, I don't know."

"Oh, yes; you do!"

"No ma'an; I don't. I could swear if I do. I got all times a kind feelin' over Sadie. on'y she wouldn't be glad on me I seen yesterday her little brother in the street mit Sadie und she make he shouldn't to talk to me My heart it breaks when she make like that; I'm got no brother und no sister und I'm lovin' so much mit my little cousin. She goes und makes he should say nothin' und in mine eyes stands tears. I was sad."

"Well, dear, that's a shame," said Teacher, "and if you really don't understand, go out into the assembly room and wait for me. Sadie is going to tell me all about it."

Eva vanished, only to return with the lurid bandage in her hand and the query: "Can I make this wet?"

Upon receiving permission so to do she retired with her courteous "Good-afternoon, Teacher," and her unchanged "Good-by, Sadie; I'm got yet that kind feelin'." Truly the "pangs of disprized love" seemed hers.

Several kinds of persuasion were practised in Room 18 during the next five minutes. Then Sadie accepted defeat, faced the inevitable, and began:

"Its like this: I dassent to be glad on Eva. So I want even, I dassent. My mamma has the same mad, und my papa. My mamma she says like this: So my papa gets sooner glad on my uncle she wouldn't to be wifes mit him no more! Such is the mad she has!"

"Why?"

"Well. Mine uncle he come out of Russia. From long he come when I was a little bit of baby. Und he didn't to have no money for buy a house. So my papa—he's awful kind—he gives him thousen dollers so he could to buy. Und say, Teacher, what you think? he don't pays it back. It ain't polite you takes thousen dollers und don't pays it back."

Sadie's air, as she submitted this rule of social etiquette to Teacher's wider knowledge, was a wondrous thing to see—so deferential was it and yet so assured.

"So my papa he writes a letter on my uncle how he could to pay that thousen dollers. Goes months. Comes no thousen dollers. So my papa he goes on the lawyer und the lawyer he writes on my uncle a letter how he should pay. Goes months. Comes no thousen dollers" At each repetition of these fateful words Sadie shook her serious head, pursed up her rosy mouth, folded her hands resignedly, and sighed deeply. Clearly this was a tale more than twice told, for the voice and manner of Sadie were as the voice and manner of Mrs. Lazarus Gonorowsky, and the recital was plagiarism — masterly and complete.

"And then?" prompted Teacher, lest the conversation languish.

"Well, my papa writes some more a letter on mine uncle. Oh-o-oh, a awful bossy-und-mad letter. All the mad words what my papa knows he writes on mine uncle. Und my mamma she sets by my papa's side und all the mad words what my mamma knows she tells on my papa und he writes them, too, on mine uncle. Mine uncle (that's Eva's papa) could to have a fierce mad sooner he seen that bossy letter. But goes two days. Comes no thousen dollars."

Here ensued a long and dramatic pause.

"Well, comes no thousen dollers. Comes nothings. On'y by night my mamma she puts me on my bed; when comes my uncle! He comes und makes a knopping on our door. I couldn't to tell even how he makes knopping. I had such a scare I was green on the face, und my heart was going so you could to hear. I'm a nervous child, Missis Bailey, und my face is all times green sooner I gets a scare."

This last observation was a triumph of mimicry, and recalled Mrs. Gonorowsky so vividly as to make her atmosphere of garlic and old furniture quite perceptible.

"So my mamma hears how my uncle knopps und says 'Lemme in—lemme in.' She says ('scuse me, Teacher)—she says 'he must be' ('scuse me) 'drunk'. That's how my mamma say.

"So goes my papa by the door und says 'Who stands?' Und my uncle he says 'Lemme in.' So-o-oh my papa he opens the door. Stands my uncle mit cheeky looks und he showed a fist on my papa. My papa has a fierce mad sooner he seen that fist—fists is awful cheeky when somebody ain't paid. So my papa he says ('scuse me)—its fierce how he says, on'y he had a mad over that fist. He says 'Pay me quick' und my uncle, what ain't paid that thousen dollers, he says just like that to my papa. He says 'I won't pay'. So-o-oh then my papa hits my uncle (that's Eva's papa), and how my papa is strong I couldn't to tell even. He pulls every morning by the extrasizer, und he's got such a muscles! So he hits my uncle (that's Eva's papa), und my uncle he fall und he fall und he fall—we live by the third floor, und he fall off of the third floor by the street—und even in falling he says like that 'I won't pay, I won't pay'. Ain't it somethin' fierce how he says? On all the steps he says, 'I won't pay'."

Miss Bailey had listened to authoritative lectures upon "The Place and Influence of the Teacher in Community Life," and was debating as to whether she had better inflict her visit of remonstrance upon Mr. Lazarus Gonorowsky, of the powerful and cultivated muscle, or upon Mr. Nathan Gonorowsky, of the deplorable manners, when this opportunity to bring the higher standards of living into the home was taken from her. The house of Gonorowsky, in jagged fragments, was tested as by fire and came forth united.

Eva was absent one morning, and Sadie presented the explanation in a rather dirty envelope:

Dear Miss:

Excuse pliss that Eva Gonarofsky comes not on the school. We was moving und she couldn't to find her clothes.

Yurs Resptphs,
Her elders,
Nathan Gonorowsky,
Becky Ganurwoski.

"Is Eva going far away?" asked Teacher. "Will she come to this school any more?"

"Teacher. yiss ma'an, sure she comes; she lives now by my house. My uncle he lives by my house, too. Und my aunt".

"And you're not angry with your cousin any more?'

"Teacher, no ma'an; I'm loving mit her. She's got on now all mine best clothes the while her mamma buys her new. My aunt buys new clothes, too. Und my uncle"

Sadie reported this shopping epidemic so cheerily that Teacher asked with mild surprise:

"Where are all their old things?"

"Teacher, they're burned. Und my uncle's store und his all of goods, und his house und his three sewing machines. All, all burned!"

"Oh, dear me!" said Teacher. "Your poor uncle! Now he can never pay that thousand dollars."

Sadie regarded Teacher with puzzled eyes.

"Sure he pays. He's now 'most as rich like Van'pilt. I guess he's got a hundred dollers. He pays all right, all right, und my papa had a party over him; he had such a awful glad!"

"Glad on your uncle?" cried Teacher, startled into colloquialisms.

"Yiss ma'an. Und my mamma has a glad on Eva's mamma, und my gran'ma has a glad on both of papas und both of mammas, und my gran'pa has a glad just like my gran'ma. All, all glad!"

As Teacher walked towards Grand Street that afternoon, she met a radiant little girl with a small and most unsteady boy in tow. She recognized Eva and surmised the cousin whose coldness had hurt her even unto tears.

"Well, Eva, and what little boy is this?" she asked.

And the beaming and transformed Eva answered:

"Its my little cousin. He's lovin' mit me now. Sadie, too, is lovin'. I take him out the while its healthy he walks, on'y he ain't so big und he falls. Say, Teacher, its nice when he falls. I holds him in my hands."

And fall he did. Eva picked him up, greatly to their mutual delight, and explained:

"He's heavy, und my this here arm ain't so healthy, but I hold him in my hands the while he's cousins mit me, und over cousins I'm got all times that kind feelin'."

THE END

WAR CYCLOPEDIA

Pertinent Facts of the War Concisely and Authoritatively Stated

A "War Cyclopedia" is the latest special war publication of the Government issued thru the Committee on Public Information. It is a handbook for ready reference on the great war, and contains in some 300 pages a great mass of information simply arranged and clearly stated. Because of its special value and the high cost of printing, a small price of 25 cents a copy has been fixed by the Government to cover the cost of production and distribution. It may be obtained from the Committee on Public Information, 10 Jackson Place, Washington, D. C.

COUNTY NOTES

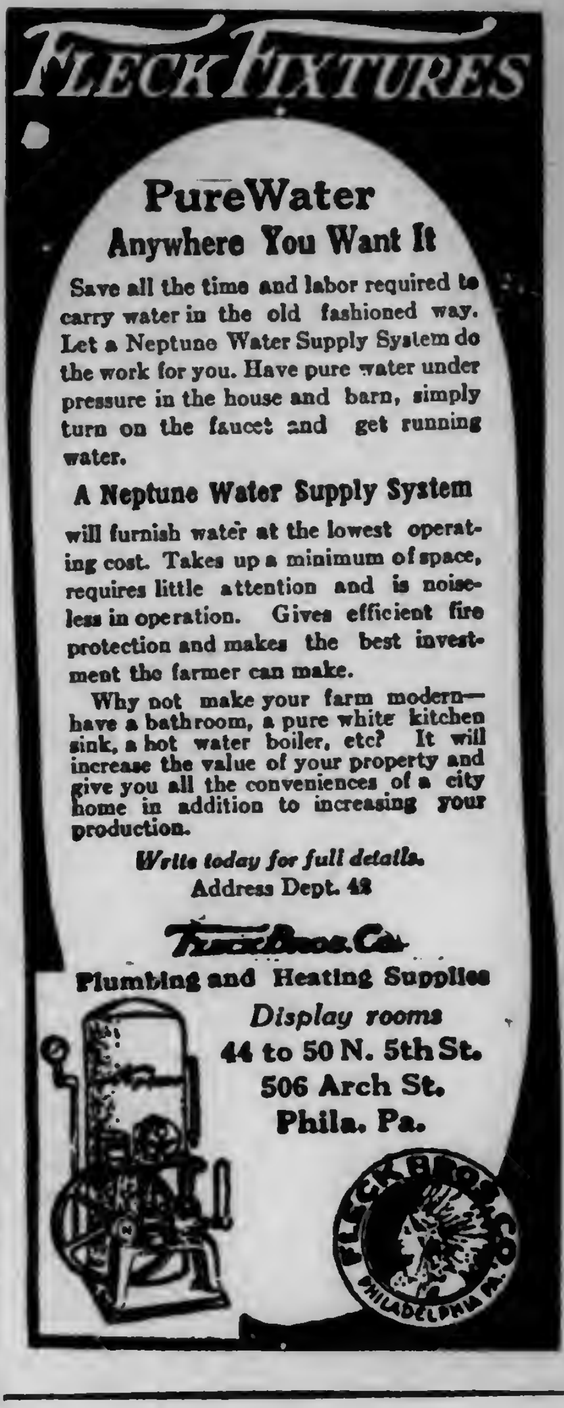
Lebanon Co., Pa., (S.E.) March 13.—Weather is colder and windy. Wheat appears to have wintered fairly well. Stock, too, is looking well. Most of the renters and tenant farmers have moved and are getting ready for the spring work. Some are hauling manure; others have started plowing. Eggs were 28 cents but are now 32 cents per dozen. Potatoes, $1 bu. Several new tractors were bought in this locality this spring.—Leonard F. Strickler.

Mifflin Co., Pa., (C.) March 14.—Mostly warm, with a few freezing nights. Snow about all gone. Heavy rain yesterday and today. All kinds of stock selling high at public sales. Dressed beef, 18c; pork, 20c; butter, 50c; eggs, 30c doz; apples, 25@30c pk; potatoes, 25@30c; comb honey, 18c; extracted, 12c and nearly all sold out. Bees wintered poorly; about half died. Wheat, $2; corn, be done toward farming. Attending sales and getting ready to move. A few farmers have corn to husk yet. —J. H. Byler.

Broome Co., N. Y., (S.E.) March 12.—Heavy rains a week ago flooded the rivers and started the ice. A break in an oil pipe carrying crude oil was an incident of the flood. The snow is nearly gone. Many farmers are hauling out manure. The produce that farmers have for sale is dropping off in price while feeds are going higher. Many of the local boys have been drafted for the army so the outlook for labor is worse than ever. Wheat brings $2.32 per bu; oats, $1.12; corn, $2.10; ground oats, $71 ton; bran, $41 ton; mixed feed, $52 ton; corn meal, $80 ton. Local dealers find it difficult to keep a supply of feed on hand. Hay is $18 to $20 a ton and getting scarce. Baled oat straw, $10 and $11; rye straw, $12; butter, 52 cents; eggs, 40 cents; potatoes, $1.10 and $1.25; beans, $7.50 to $8. Many farmers are selling their cattle. Horses are very high in price.—C. H.

Venango Co., Pa., (N.W.) March 4. — February more moderate than January. Fine weather now. Live stock holding its own fairly well and prices good. Crops are not looking well, being badly frozen. Butter, 50c; eggs, 60c; pork (dressed), 23c; veal, 20c; beef, 14c; potatoes, $1.50; cabbage, 3c; hay, $25; straw, $20; apples, $2 per bu. Hauling hay to market and manure to the fields is about all the farm work being done. General conditions as good as can be expected.—W. J. Pringle.

Spread lime and manure now. Labor will be scarce next spring and with this work out of the way you can put in more acres when planting time comes.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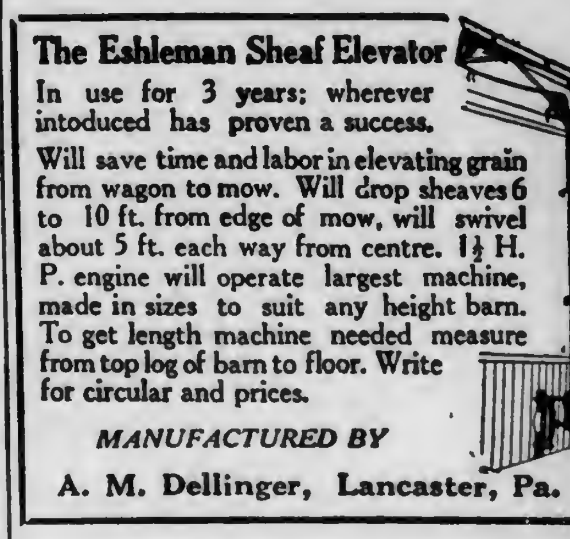
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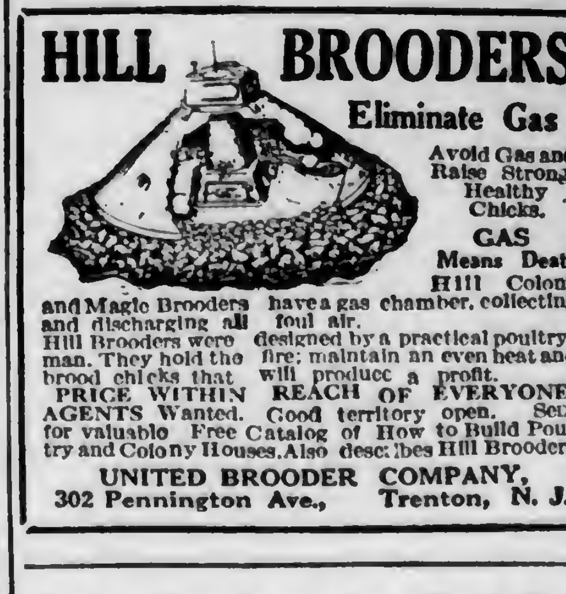
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Results prove it. **Order through your dealer now**—get the biggest yield from your acreage, at least cost.

The Berg Co., Ontario St. near Delaware River, Philadelphia

Grange

MARYLAND STATE GRANGE AT WORK

The Maryland State Grange has adopted this year a splendid series of resolutions, which the farmers of the state want passed by the General Assembly: Prohibition and the abolition of race tracks are strongly endorsed; also, increased salaries for public school teachers; maintenance of existing school laws; a substantial appropriation to the State College of Agriculture, and the support of the Public Library Commission.

"As a means of preventing many serious accidents, we favor a law compelling horse-drawn vehicles on the public roads at night to be provided with a light.

"We favor a state dog law which will promote the development of the sheep industry, thus giving us much-needed additional supply of meat and wool.

"We favor the establishment of the Torrens System of Land Title Registration in order that the delay, expense and uncertainty involved in our present system of transfer of title to real estate may be removed.

"We believe there should be a law to regulate the selling of seeds of garden or truck crops within the State of Maryland, requiring the labelling and inspection of such seeds upon the general plan or principle as that employed under the act now in force in this state, governing the sale, labelling and inspection of agricultural seeds.

"While the general incorporation law of Maryland is not designed to permit the formation of truly co-operative associations, altho the Sherman Anti-Trust Law does permit the formation of agricultural and horticultural organizations instituted for mutual help but not having capital stock or conducted for profit, we favor a law permitting the formation of agricultural and horticultural co-operative associations, with or without capital stock, based upon the approved practice of other states.

"In order that wheat may be graded so that the small farmer may have the same advantage as the shipper of carload lots of grain, we favor a law whereby a state grain elevator may be established within the city of Baltimore.

"We favor a law fixing 12 percent as the minimum percentage of butterfat in ice cream."—Marylander.

FOOD SHIPMENTS TO ALLIES

A general idea of the quantity of food sent to European Allies by the United States from July 1, 1914, to January 1, 1918, is given by figures just announced by the U. S. Food Administration. In that period the United States has furnished complete yearly rations for 57,100,933 people. In addition there was enough extra protein to supply this portion of the diet for 22,194,570 additional men.

The total export of wheat and wheat flour to the three principal Allies is equivalent to about 384 million bushels. Pork exports for the 3½ years amounted to almost two billion pounds. Exports of fresh beef totaled 443,484,400 pounds. The amount of food exported to Russia is negligible compared with that sent to the Western Allies.

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E. J. Reefer, the poultry expert, 240 Reefer Bldg., Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure it." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

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of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.
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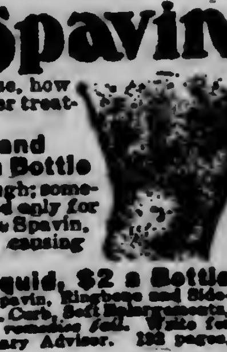

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Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Roup.—Last fall my flock of chickens was affected with roup. I have used potassium permanganate during the winter and have not been troubled with any sick birds until one week ago, when one of my chickens died showing symptoms of roup. Before I bought my place the owner had been troubled with this disease. The chicken house is modern, well ventilated and kept clean. It consists of two floors, the lower for scratching shed, but I do not use this. Could you advise me what I can do to exterminate this infective germ from the farm? S. H., Liberty, N. Y.—First of all, let me say that the cause of this disease seems to be far from settled. We have three forms of the disease, that is, three forms of leasions and any or all may be present in the bird. The nasal type is characterized at first by a thin watery discharge which gives off an offensive odor. This is characteristic of roup. The diphtheretic type affects the mouth. The ocular type seems to affect the mucus membrane covering the interior portion of the eye ball. This disease is often spread by birds introduced into a flock from infected premises and sometimes by exposure at poultry shows. Chickens suffering from a chronic type of this disease very often spread the infection and poultrymen generally are not energetic enough in removing any bird showing any of the symptoms of either acute or chronic roup from their well birds. In order to get rid of this infection, correct any bad sanitation or hygiene. Ventilate the hen house and keep it dry. Admit no drafts on the birds. Clean and repeatedly disinfect that part of your premises where the chickens are kept or run. When the disease is established in a bird it will not pay to treat it. The carcass had better be burned or deeply buried. Washing out the nasal passage with a 20 percent solution of baking soda, then injecting some peroxide hydrogen has good effect.

Septicemic Disease of New-born Animals.—This disease occurs in foals, calves, lambs and pigs. It usually attacks them before they are a week old. In some outbreaks I have known every calf or lamb born on the premises to die within a few days of birth. When the infection is once introduced into a stable it is very likely to remain there for some time. However, it is possible for this dysentery to develop in a stable without being imported. The infecting germ may enter the body thru the navel cord or with the food, milk or water. After eight days most of the danger is past. The symptoms usually appear in a few hours after birth, or before three days. The disease generally runs its course in from 12 to 48 hours, and the sooner the disease sets in after birth the shorter time the animal lives. About 90 percent of the cases prove fatal. Medical treatment is perhaps worse than useless, because it often means spreading the disease. I invariably kill and cremate the animal and at once commence cleaning and disinfecting the premises. This is the proper method of prevention. The hind parts of cow and others who stood next to her should be washed with a two percent solution of coal-tar disinfectant or any other good disinfectant solution you may have on hand. The barn should be whitewashed with fresh lime wash. Wash out vagina of mother with a two percent solution of carbolic acid daily until vaginal discharge ceases. The afterbirth should be burned. Paint the navel of all new-born calves and colts with equal parts tincture iodine and glycerine daily until the cord shrivels completely. Pregnant mares and cows should be removed to uninfected stable.

DISPERSAL SALE
50 Registered and High Grade 50 Holstein Cows
AT DUNCANNON, PA.
Friday, March 29, 1918 at 10 A.M.

On account of the farm help situation, I will disperse my entire herd of big producing Holsteins on Benvenue Island Farm, 1 mile north of Duncannon, Perry County, Pa.

A very choice dairy, extra good producers, quite a number of 10,000 to 12,000-pound-per-year cows among them.

Most of these cows are young and are daughters of our famous proven herd sire Hillside Esther Pietje, No. 57979, who is a son of Woodcrest Pietje, No. 35469, and he is a son of Pietje, the 22nd, with a even day record of 673.9 pounds of milk and 31.62 lbs. of butter.

The cows now carrying calves are mostly bred to Bonnymeade King Hartog, and the remainder are bred to Sire Rag Apple Korndyke, the 3rd.

These cows will weigh from 1000 to 1550 pounds.

3 REGISTERED HOLSTEIN BULLS

Will also sell three very fine Registered Holstein Bulls as follows:—Bonnymeade King Hartog, a 3-year old. One 6 months old, son of Sir Rag Apple Korndyke, the 3rd, No. 95282. One 8 weeks old, son of Hillside Esther Pietje, and a few choice heifers bred to freshen this fall. Also a few younger heifers not yet bred.

SALE RAIN OR SHINE AT 10 A. M.
Terms made known on day of sale.
Jno. H. RICHTER, Duncannon, Pa.
Col. Geo. W. Baxter, Troy, Pa. Auct.

REGISTERED HOLSTEIN BULL
of World's Record breeding, born March 22, 1917. Dam an A. R. O. cow.—A beautiful individual, ready for service. Price $150, delivered, express paid your station. Your money back if not perfectly satisfied.
ALLAMUCHY FARMS
Arthur Danks, Mgr. Allamuchy, N. J.

7-8 Holstein Calves
either sex $15 to $20 each express prepaid in lots of 5. 45 high grade 2 year olds close springers $65 to $80 each. 40 yearlings not bred. 30 registered heifers ready to breed $125 each. 28 registered bulls, registered and high grade cows at Farmers' prices.
John C. Reagan, Tully, N. Y.

Maple Lawn Holsteins
Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.
C. W. ELLIS, Jr., Cortland, N. Y.
Office, 31 1-2 Main St. Bell phone.

"NO HORNS"
Naturally Polled Holstein-Friesian
bull calves, sired by a son of the World's Record senior 4 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp.
GEO. E. STEVENSON & SONS, Clarks Summit, Pa.

MILL HILL FARM
offers Guernseys; bulls ready for service and calves. Tuberculin tested. Oscar Bolick, McKeansburg, Pa.

Beau Rio seventeen months old, registered, Hereford Bull for sale. Weighs 1,290 lbs. Sire, Beau Donald 37th, No. 469301; dam, Lady Geneve 2nd, No. 352467. Champion type. Fed by my twelve-year-old son, Edson. Write ROSS F. STOUT, Clarksburg, W. Va., for price.

Jersey Bull ready for service. Dam's record over 500 lbs. butter in 1 year. Sire's Dam 22 lbs. in 7 days. Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us.
J.M. MAIN & SONS. SHIPPENSBURG, PA.

Reg. & Grade Holsteins 30 head reg. heifers, $250 each; cash or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedgrees.
WALTER M. CRUTTENDEN Wilkes-Barre, Pa.

Holstein Bull Calf six months old; 24 lb. dam, 31 lb. sire.
George M. Carpenter, 41 S. Main St., Wilkes-Barre, Pa.

Two Registered Guernsey Bull Calves with A. R. backing. Write for pedigree and price. J. I. HERETER, Gettysburg, Pa.

AYRSHIRE BULL CALVES Advance Registry ancestry. Priced to sell. They will improve your herd.
ROBERT TEMPLETON & SON, ULSTER, PA.

Reg. Chester Whites big type. Guernsey Calves. Write your wants. MOSES EABY, Landenberg, Pa

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd
BONNYMEADS FARMS, R. D. 1, Harrisburg, Pa

Holstein bull calf, grandams have average record of 31 lbs. age 15 months. Price $80.00.
Oaks Dairy Farm, Wyalusing, Pa.

Milking Shorthorns Bull calves bred from the best milking strains, for sale; also few heifers. C.M. Kennedy & Sons, Ulster, Pa.

Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M E. Basehoar, Crystal Spring Stock Farm, Littlestown, Pa.

Swine

O. I. C. SWINE Big Type. Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants.
CRANDELL & SON, Box 53, Cass City, Mich.

Reg. P. Chinas; Berkshires; C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry.
P. F. HAMILTON, COCHRANVILLE, PA.

Winterthur Farms
Offer For Sale Sons of
"UNEEDA KING ALCARTRA" No. 182646
A 33-Pound Bull

He traces twice to King Segis through his two best sons; Johanna McKinley Segis with a 40-lb. dam, and King Segis Pontiac with a 37.20-lb. dam.
No. 8—Born December 11th, 1917. He is nicely marked, of good conformation and a show calf in every way. His dam, K. S. P. C. Peg 326111, is a 17.42-lb. Jr. three-year-old daughter of King Segis Pontiac Calamity, a 28-lb. son of King Segis Pontiac Alcartra. His 15 nearest dams average 25.6 lbs. butter in seven days.
No. 15—Born December 22nd, 1917. He is about even in color, long, straight back, deep bodied and a show bull in every respect. His 10 nearest dams average 28.4 lbs. butter in seven days. Dam: Queen Nazli De Kol Segis 226241, A. R. O. at 3y. 559.90 lbs. milk. 20.02 lbs. butter. She is a granddaughter of De Kol Beets Segis.
No. 20—Born January 7th, 1918. This bull is a little more black than white and an extra good individual for one of his age. He comes from heavy producing dams. His ten nearest dams average 27-lbs. Dam: Queen Greenwood Concordia De Kol 161413. A. R. O., 476 lbs. milk, 22.08 lbs. butter. Her dam is a 27-lb. cow with a 26-lb. dam.
WINTERTHUR FARMS
Winterthur. Delaware.

Big Type Berkshires
Majestic Mammoth, weight 407 lbs., at 7 month was bred and raised by me.
Special: Booking orders for bred sows and gilts. Minimum Prices: Weaned pigs, $20 each, bred sows and gilts $100 each.
C. H. Carter, Whitguern Farm, West Chester, Pa.

"HAMPSHIRES"
Any age. Free circular. Also bulls from accredited herd, registered Guernseys.
LOCUST LAWN FARM,
Box 2, Bird-in-Hand, Pa.

BERKSHIRES Booking orders now for large Berkshire pigs. Prices satisfactory. DAVID WIANT, HUNTINGTON MILLS, PA.

Poland China Sows (three) bred to best Poland Boar in County. Two have second litter of pigs, one bred now for first time. R. F. EPPLEY. R. F. D. 6 Zanesville, Ohio.

O. I. C's. BIG TYPE, bred gilts April & May farrow. 30 Aug. & Sept. Boar pigs priced to sell in next 30 days.
G. P. ANDREWS. Dansville, Mich.

Poland Chinas Registered and cholera immunized. Sired by or bred to half-ton boars from dams that weigh up to 800 lbs.
E. ROWELL, Jr. SCOTTSBURG, VA.

Chester Whites Big Type. Write your wants. We can fill them.
R. L. MUNCE, CANONSBURG, PENNA.

Penns Valley Berkshires are the large prolific kind. Write for our price list of young boars and open gilts.
W. F. RISHEL, CENTRE HALL, PA.

Durocs choice Sept. boars and gilts. Will breed gilts for Aug. & Sept Spring pigs either sex.
IRA D. JACKSON. R. 10, VAN WERT, OHIO

REG. BERKSHIRE pigs for sale cheap next sixty days.
W. J. McCONNELL, OXFORD, PENNA.

Large Berkshire Swine Registered High Grade Prices reasonable. Write
HOME FARM, CENTER VALLEY, PA.

O. I. C. & C. W. pigs, shipped C. O. D. Sired by and out of champions. Mischief 2d weight 500 lbs. at 12 mos.
S. L. RHODES, VERSAILLES, OHIO.

O.I.C. & Chester White Spring pigs ready soon. Satisfaction & safe delivery guar.
JOHN L. VAN HORN. TROY, PENNA.

Miscellaneous

PERCHERON STALLION
No. 125175, for sale. Foaled April 19, 1916.
ELIZABETH FARMS, R. F. D.
Lititz, Lancaster Co., Pa.

HAY
W. D. POWER & CO. 601 W. 33 St. New York
are the largest handlers of commission hay in greater New York: if you have hay to dispose of communicate with them.
HAY

365 Acre Farm in Buckingham Co., Va., 200 acres tillable. Ready to plant apple trees. 80 acre acorn orchard, fenced for hogs. 6,500 (half cash). 200 acres Central New York, $4000; 30 acres Connecticut, $3500; other smaller farms.
HARRY VAIL, Owner. WARWICK, N. Y.

Wanted at Once first class herdsman for pure bred Jersey herd. Also dairyman to assist in milking and do milk house work. Married or single, exempt from draft. Must have good references.
W. H. HAINES, Mgr. Dover, N. J.

Clydesdale Stallions Young horses, ready for service. Fine individuals; prices reasonable.
MONTROSE FARM, ORANGE, VA.

Imported Percheron Stallion for sale. Registered; color brown, weight 1650. Must sell to reduce stock. Price low. Joseph Seals, R. D. Hackettstown, N. J.

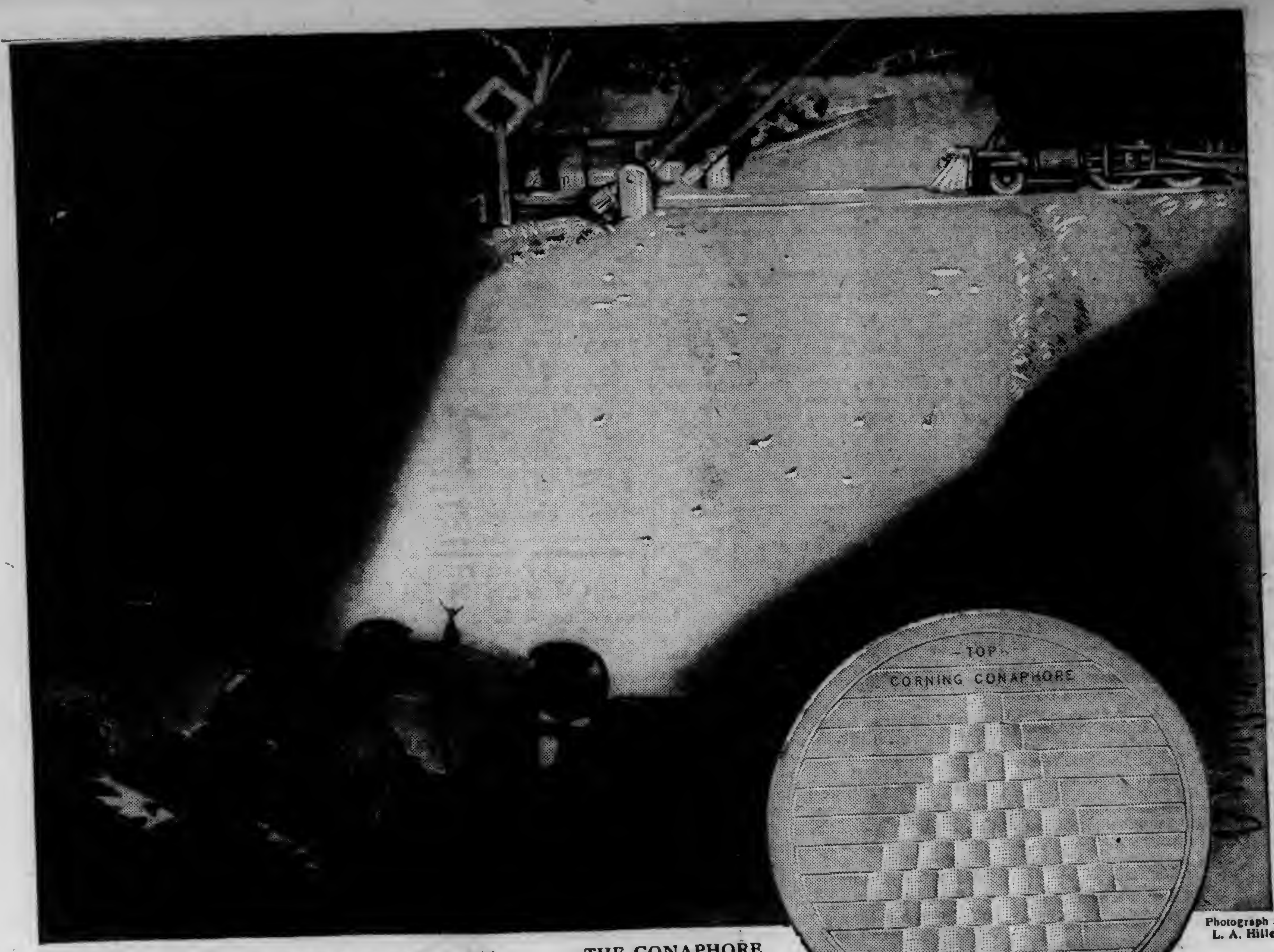
HAY Ship To The Old Reliable House
Daniel McCaffrey's Sons
623-625 Wabash Bldg., Pittsburgh, Pa

Hampshire Ram Lambs Beautiful form. Excellent breeding. Vigorous and stocky Manetto Hill Farm, Hicksville, L.I.

JACKS FOR SALE By
W. C. WHITE. COUDERSPORT, PENNA.

Farm Hand Wanted General labor, hogs and cattle. Locust Lawn Farm. Bird-In-Hand. Lancaster Co., Pa.

PLEASE say: "I saw your adv. in Pennsylvania Farmer."



Many railroad crossing gates are not operated after 7 P.M. This photograph shows how the 500-foot range of the Conaphore protects your safety. It also shows how the Conaphore keeps the beam within legal limits, and so makes for the safety of others

THE CONAPHORE
Smooth front surface. Easily cleaned. Does not clog with dust or mud

Photograph by L. A. Hiller

Country roads demand long range

Safety demands no glare

NOTICE how brightly the Conaphore beam lights up the railroad crossing and the engine in the photograph above. Then see how far beyond the crossing it illuminates the road.

The Conaphore does not diffuse and scatter the light in all directions. Neither does it dump the light directly in front of your car. Instead it shoots a long, broad beam ahead for 500 feet and more.

Notice, also, that where the Conaphore beam strikes the engine, the light is not more than 42 inches above the road. If a motorist were approaching from the other direction, the Conaphore rays could not dazzle or confuse him even to the slightest extent.

Conaphore design patented

Conaphores give you the range you need and to which your own safety entitles you. Yet they eliminate all glare and so make for the safety of others.

The Conaphore permits the bulb to be focused for maximum range. Its efficiency is due to scientific design.

A series of patented corrugations on the inner surface of the Conaphore bends down the beam, while cylinders in the center fan ample light sidewise.

These corrugations also limit the height of the beam to 42 inches. There is no chance of blinding the other fellow, and you are within the requirements of any state or local headlight law.

Pierces fog and dust

The Conaphore is made of Noviol Glass *patented*—invented by Conaphore designers and used in no other headlight device. This unique yellow-tint glass causes the light to pierce fog and dust, without "back-glare."

Blue and violet rays present in all white light are the chief cause of "back-glare," because they are easily diffused by the fog or dust particles. Noviol Glass absorbs these blue and violet rays, but projects all the rest of the light. Thus the Conaphore eliminates "back-glare" and gives you perfect road vision even when the night is thick. *The Noviol beam makes the easiest light for your eye to follow.*

Conaphores are also made in clear glass, but we strongly recommend the Noviol.

Help fight the glare evil

On dark country roads the glaring headlight danger is found at its worst. Put Conaphores on your car at once, and do your share to stamp out the glare evil. They give you the long range you want, yet take all glare out of your headlights.

Easy to install. Sizes made to fit all cars. If your dealer has not yet received his supply, write us and we will see that you are promptly supplied.

Retail Price List (per pair)	Noviol Glass	Clear Glass
5 to 6⅞ inches inclusive	$2.40	$1.60
7 to 8½ inches inclusive	3.50	2.50
8⅝ to 10 inches inclusive	4.50	3.00
10⅛ to 11½ inches inclusive	6.00	4.00

Prices 25 cents more per pair west of Rocky Mountains
Sizes vary by steps of ⅛ inch above 6⅞ inch size

Manufactured by the World's Largest
Makers of Technical Glass

CONAPHORE

Range 500 feet—No Glare—Pierces Fog and Dust

CONAPHORE SALES DIVISION
EDWARD A. CASSIDY CO., Mgrs.
1604 Foster Building - - New York City

CORNING GLASS WORKS

CORNING GLASS WORKS ALSO MANUFACTURES PYREX TRANSPARENT OVEN DISHES AND PYREX CHEMICAL GLASSWARE

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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

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Using the Limestone on the Farm

A Test in Grinding Limestone for Farm Use

Library Agri College Experiment Station

By E. L. WORTHEN and R. A. ANDREE
PENNA. STATE COLLEGE

All commercial forms of lime have advanced materially in price the last few years. Under normal conditions liming is a rather expensive operation when the commercial material is used; at present, delivered prices of purchased lime are frequently prohibitive. As a result, we should be more than ever interested in utilizing the home supply when we are so fortunate as to have limestone available on our own farm.

This home supply has been most commonly utilized by burning. Particularly on account of the high price of coal at this time, the cost of the home burned product has materially advanced. The only other practical way of preparing limestone for agricultural use is by grinding. Accurate figures on the cost of producing lime on the farm should be valuable to many farmers.

Limestone Gives Results

In past years much hesitancy has been shown in the use of pulverized limestone—some are still skeptical relative to the use of this material. Practices and prejudices in agriculture have undergone many radical changes on the part of our better farmers the last decade. These changes have come with the acceptance of accurate information secured by carefully conducted investigations. We now have conclusive information showing that limestone, when properly pulverized, is fully as efficient and just as prompt in its action as the other forms of lime.

Need of Cost Records

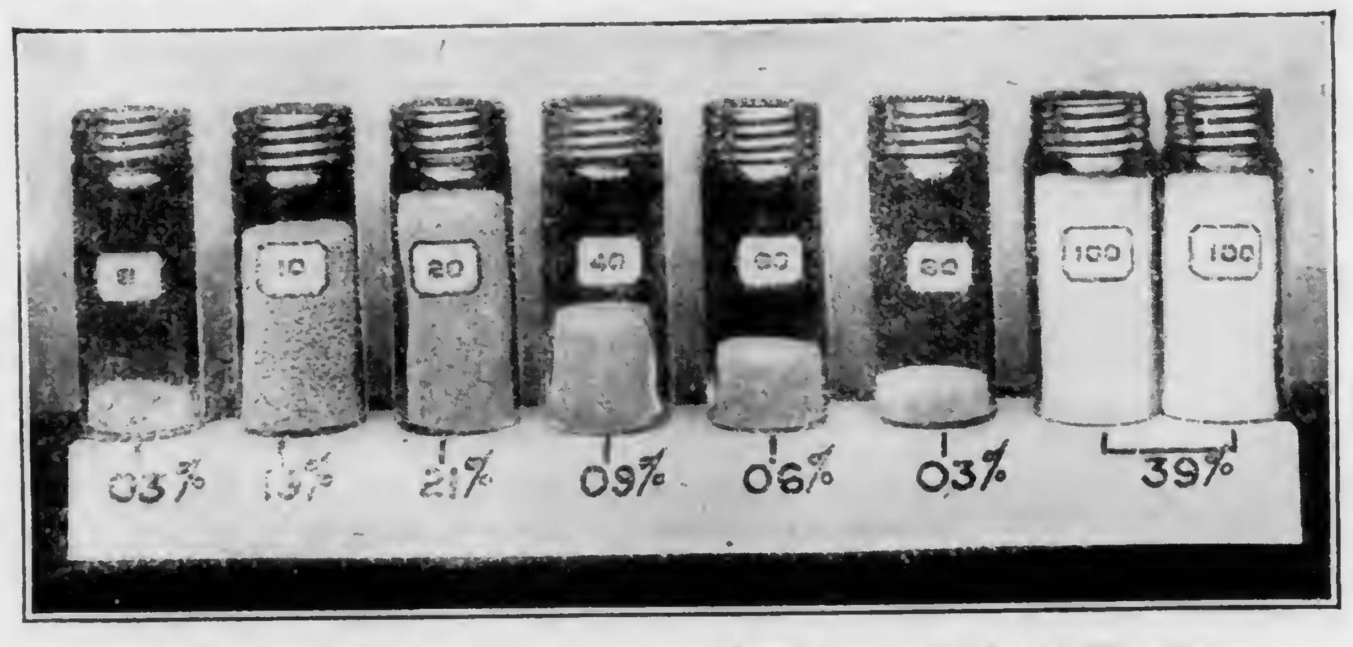
With the more universal use of ground limestone there is a greater need of accurate records as to the cost of the material. In fact, so much guessing has been done, and in so many instances cost figures have been modified on the part of commercial concerns encouraging the use of limestone as well as those discouraging its use, that the lack of definite figures available to the consumer has become rather embarassing. It has been apparent that if the pulverizing could be done cheaply enough, many farmers in Pennsylvania could neutralize their acid soil and improve their land by grinding up the outcrops of limestone on their own farms or on those in the immediate vicinity. Would it pay and was it practical?

Conditions of Experiment

It was therefore decided to run some tests in which the cost as well as the value of the pulverized stone could be definitely determined. The tests were run on a farm where the plan of fertilizer includes limestone, manure, phosphorus and clover—a farm which presented these conditions typically.

Using Limestone Outcrops to Best Advantage

This farm has been cultivated for nearly one hundred years, but never limed. Upon investigation it was found that the soil has a lime requirement of two tons of ground limestone per acre. Because of this acid condition clover had failed for a number of years. As a result the soil had become very deficient in nitrogen and organic matter as well as in lime itself. These identical conditions are present on the great majority of our older farms which have received no systematic soil treatment in past years.



Showing Comparative Amounts of Different Grades of Fineness

It became evident that under such conditions the first step to be taken in the improvement of the soil of this farm was the application of lime in amounts sufficient to correct this acidity. As high grade limestone outcropped in numerous places and interferred with the most effective tillage of some of the fields, it appeared the most economical source of lime. Besides this, there were many loose stones scattered over the fields. Those fit for grinding were gathered, and formed about 25 percent of all the stone used in the experiment. The cost of gathering and removing these stones from the fields was not charged against the pulverized product but was charged against field improvement. The cost of the labor of repiling was, however, included in the cost of the final product, since this was really part of the work of crushing.

About 15 percent of the limestone consisted of large stones which were blasted out of the ground in various parts of the farm to facilitate plowing and cultivating. Altho the farm was directly benefited by this, the entire cost of blasting and hauling was charged against the final product. The remainder, or 60 percent, was quarried. This was done at low cost, as the limestone was interbedded with shale, and easily removed without explosives. In this quarrying the land was benefited in that two outcrops were entirely removed from cultivated fields.

There are two well-known types of pulverizers on the market. One machine crushes the stone and then pulverizes it by passing it between several sets of rollers, while the other type of machine crushes the stone and then pulverizes it by means of rapidly rotating hammers which pound it to dust. The latter type of machine was used and it worked as well with wet as with dry stone. Part of the work was done with the kerosene-burning tractor as a source of power and part with the ordinary steam engine. This afforded an opportunity for comparing costs.

The Operations

Both steam and kerosene tractors ground about a ton of stone per hour. The elevator attachment was removed from the pulverizer when the kerosene tractor was used which would have a slight influence on the rate of grinding. The quantity of the product depended somewhat upon the skill of the man feeding the machine, while the quality, or the fineness of the product, was in direct ratio with the speed of the pulverizer. Power and speed are the chief essentials for satisfactory results. The hardness of the rock as well as the skill of the feeder affects the quantity of the product produced in any given time.

The following table gives in detail the cost of the various operations in pulverizing limestone. Man labor was figured at 20 cents and horse labor at 10 cents per hour. This was the actual rate paid at the time of grinding. The engineer's time was charged at 30 cents an hour and 30 cents an hour was paid for the use of the tractor. The cost of the use of the pulverizer was estimated at 10 cents an hour.

An expenditure of $90.12 produced 50 tons of ground limestone. This brings the cost down to $1.80 per ton. With the kerosene tractor 15 tons of pulverized limestone were produced at a cost of $6 for quarrying, $3.60 for kerosene, $1 for oil and $14.40 for grinding and use of tractor. This amounts to $26.50 for 15 tons or $1.77 per ton. However, this figure does not allow for interest on the investment nor wear and tear on the tractor.

Fineness of the Product

Many conflicting statements have been published and are still being published regarding the desirable fineness of ground limestone. There are so many influencing factors that it is difficult to analyze them in such a way as to draw the practical conclusions needed by the farmer. We can safely assume agreement on the following facts and these are really all that are vitally necessary from the practical standpoint:

First: Limestone not passing an 8 to 10 mesh to the inch sieve is of little agricultural value.

Second: Limestone passing a 60, 80 or 100 mesh to the inch sieve is sufficiently fine to become largely effective the year applied.

Third: When all the stone is pulverized very fine the results are not as lasting as when some material is of coarser grades.

Fourth: The ideal material should largely pass a 10-mesh to the inch sieve. A perceptible percent should pass the 60, 80 and 100-mesh sieve. This fine grade would become immediately effective. The ideal rate of application would supply sufficient amounts of these fine grades to correct the immediate acidity. The intermediate grades—those passing the 10, 20 and 40-mesh sieve—would become active rapidly enough to keep down acidity for several years following the application.

With this information, we judge of the efficiency of the home-ground material from the standpoint of fineness of grinding. The illustration on the preceding page shows the relative percent of the different grades secured from a careful separation of a representative sample of the product. This shows only 3 percent of material too coarse to be of real value. Even this grade passed an 8-mesh sieve and in time would have some beneficial effects. The remainder is divided almost equally into the group that would give immediate results—60, 80 and 100 mesh material—and the one slower but more lasting in effect—10, 20 and 40 mesh material. Forty-eight percent of the total material classes in the fine group and 49 percent as the coarser grades; 97 percent in all passing the 10-mesh and the remaining 3 percent readily passing the 8-mesh sieve.

In the light of our present knowledge of the desirable fineness of grinding as well as the present cost of the commercial product, certainly the quality of the home-ground material is satisfactory, and when the cost is considered it has proved a most economical source of lime.

Conclusion

There are many farms in the limestone valleys of Pennsylvania where soil acidity has developed to the point where clover fails. Clover plays such an important part in the maintenance of the soil on most Pennsylvania farms that soil depletion closely follows the failure of this legume. On these same farms good quality of limestone is frequently found outcropping. While the very material which is most essential in the economic improvement of the soil occurs in abundance on the farm and in many cases in the soil itself, it is not effective. Before it can accomplish its work, it must be gotten into a fine state of division either by grinding or burning. This home source of lime may often be used to good advantage. Experiments have conclusively shown that ground limestone is a satisfactory product. Under present conditions with the high price and scarcity of coal, the home grinding of limestone is certainly deserving of consideration as an economical source of agricultural lime.

Finally, it should be understood that whatever are the difficulties, and however high the cost as compared with former years, at least the minimum lime requirement must be supplied before any soil can yield full crops.

ITEMIZED EXPENDITURES FOR GRINDING WITH STEAM ENGINE

Operation	Man Hrs.	Man Cost	Horse Hrs.	Horse Cost	Machine Hrs.	Machine Cost	Total Cost
Quarring stone and hauling	61	$12.20	15	$1.50			$13.70
Grinding (1 man and engine)	50	15.00			50	$15.00	30.00
Grinding (pulverizing)					50	5.00	5.00
Belting and feeding pulverizer	50	10.00					10.00
Hauling water	20	4.00	34	3.40			7.40
Hauling coal	5½	1.10	14	1.40			2.50
Coal, 5900 lbs. at 28c							16.52
Meals, 16 at 25c							4.00
Dynamite, fuse and caps							1.00
Sum total							$90.12

Farm Problems and The War

By D. C. KAUFFMAN

YORK COUNTY

PENNSYLVANIA

The extraordinary pressure upon the farmers of America in producing the maximum of edible products is causing wide-spread agitation and comment, and it must be obvious to all that the man power on the farms will not be replaced for a long time. Nothing is of more importance than the winning of the war. That the farm situation is more than acute is abundantly demonstrated by the fact that experienced farm assistants have a wide choice of selection and make their own salary, but only on large, productive farms can these salaries be maintained.

Short Cuts

The scientific propaganda superinduced by war demands is loading upon the usual routine of farm duties new ideas that require not only extra help but additional capital. Increased knowledge of farming creates new obligations, and instead of reducing the labor incident to general farming more help must be hired. If these specific advisors have any ingenuity in short cuts of farm operations they seldom make mention of it. I believe there is a possibility of greatly facilitating some work which is not only laborious but absolutely useless.

Begin with the farm garden, which was abandoned here 10 years ago. In the rush of spring work the task of preparing the garden is usually assigned to the women. The men hardly spare the time to carry lime for whitewashing the fences, which can be done much quicker and easier with a good barrel sprayer than with a brush. Early vegetables can be grown more successfully in rich, long, narrow tracts out in the field than in a garden. Even where enclosures are small it is far better to plow than to spade. It always appeared ridiculous to me to expect a woman to dig, plant or hoe a large garden in a blazing hot sun when she has plenty of other work.

A seed drill and some handy cultivators and horse hoes will do this work far better and cheaper than the women can do it. I have grown everything in long field rows that can be grown in a garden. So I know that the farm garden is a positive nuisance.

Another expensive and useless farm job that is costing farmers extra labor is the shelling and chopping of corn. It is nothing unusual to hear large gas engines running well into the night preparing feed which the scientific feeder knows is better fed when crushed, cob and all. Experiments conducted at Pennsylvania State College prove that cattle do better upon crushed ear corn than on ground feed. What is the use of shelling it when the cob contains considerable feeding value? The man that is feeding from 15 to 25 head of cattle can wisely save himself useless and unnecessary work. Or, what is the use of cutting and husking corn when the New Jersey Station has made a net gain of $66 on ten 100-lb. hogs in thirty days on one acre hogging it off?

It may be said with truth that the Food Administration is not wholly wanting in its regulation of commodities. But there is ample evidence that many farmers have not kept abreast with the times, and some of our leaders and advisors are justly to blame in not making and devising better schemes for use of waste energy.

Home Conveniences

It is altogether possible for the farmer to have and maintain every house convenience incident to city homes. In fact, it is far less expensive in the country. Hot and cold water, furnaces, and baths which not only mean better health and sanitary conditions, but the saving of many unnecessary steps are possible in more homes. All of these things can be installed far below the cost of a good automobile and would mean more for the general health and welfare of the entire family. This is not all. The man who is seeking work is also seeking congenial surroundings, and the lack of these helps to make the farm labor problem heavier.

Another feature that would greatly aid the farmer in securing help is the profit-sharing idea. Many business enterprises have found that to get the best out of their employees they must allow a share in the proceeds. A salary and percentage basis would work out equally well on the farm. Giving the younger set some fascinating phase of the business is a most worthy and commendable idea. They want some money of their own, and they should be allowed some interest all their own.

It is quite safe to assert that the required quota of farm help cannot be supplied unless it is drafted, so long as ship-builders and other war industries offer from 50 to 75 cents per hour. Unless supply and demand control the market, few farmers could make progress with help at such figures. The prices of farm produce and edible commodities under normal regulations would automatically follow other products if legislation was adopted for the producer. And even this would, perhaps, come too late to prove effectual.

The Job Before Us

If an all-kind Providence does not provide a favorable season I cannot see how even a normal production is possible. The calamity howler should be hushed, but there is absolutely no use in denying just criticism. The fact will come to light when it is too late. We are at the start of another season with some mighty big problems unsolved. An early spring with favorable weather conditions during the growing season will aid materially in feeding the nations, but there are many far-seeing, intelligent men who see actual signs of starvation in this 250-billion-dollar nation. If the useless, needless and even harmful things of living were abolished the Government and farmer would have little need of begging for aid.

Should Other Grains Replace Oats?

Uncertainties of Spring-Sown Grains in East

By CHAS. F. NOLL

STATE COLLEGE, PENNA.

Oats give a small profit per acre and a low return per unit of labor compared with most other crops grown on Pennsylvania farms. But for many years oats have almost held their own in acreage, largely because the work with the oats crop does not seriously interfere with that of other crops; because oats are satisfactory as a nurse crop where wheat is not grown and because the grain is an excellent feed, especially for horses. Since oats prefer a cool climate they are least profitable in the southern counties, and here the acreage in oats has noticeably decreased in the last few decades.

In direct competition with oats we have the other small spring grains and it is a pertinent question now whether one or more of these should not be substituted for oats.

Barley

Barley should be considered first. It furnishes an excellent feed only a little lower in protein than oats and a third higher in net energy per unit of weight. In fact, while it is higher in digestible protein than corn meal, it is also slightly higher in energy value.

Granting that barley supplies a wholesome, nutritious feed it should not be grown unless the yield compares favorably with that of oats. As indirect evidence that barley has not been profitable we notice in the last census that in the thirty years ending in 1909 the acreage of barley in Pennsylvania decreased nearly 68 percent while that of oats decreased less than 7 percent. According to this same report, the average yields in Pennsylvania for the years 1879, 1889, 1899 and 1909 were 28.7 bushels of oats and 19.75 bushels of barley. Since barley weighs just half again as much as oats per bushel, the barley gave a few more pounds of grain than the oats. The U. S. Department of Agriculture, Yearbook for 1916, gives the average yield of oats in Pennsylvania for the 10 years ending in 1916 as 31 bushels per acre and of barley 26.1 bushels. These last figures credit barley with one-fourth more grain by weight than oats.

So little barley has been grown at our Experiment Station that not much evidence can be offered from there as to the merits of the crop. Champion Beardless barley was grown for a number of years as a nurse crop for alfalfa and the yields were low compared with those of oats. In 1917 three varieties of barley were grown in comparison with Japan oats. The oats somewhat outyielded two varieties of beardless barley and gave about the same yield as a two-rowed bearded barley, in pounds of grain per acre.

At the Ohio Experiment Station, which has about the same climatic conditions as parts of Pennsylvania, 9 varieties of barley were grown from 1904 to 1912 each for a year or more in comparison with oats. The best variety of barley (Manshury) was excelled in yield by the average of 22 varieties of oats by 20 percent, altho in some years the leading varieties of barley outyielded the average of the varieties of oats.

From the evidence presented, one can hardly hope for more pounds of grain per acre from barley than from oats. The beardless barley, of which Champion Beardless is the best known variety, is considered superior to the bearded varieties as a nurse crop but it gives lower yields of grain than the bearded varieties. The six-rowed bearded varieties are especially to be recommended, and leading varieties of this type are Mansbury and Oderbrucker.

Spring Wheat

Just now, when there is an insistant demand that farmers produce as much wheat as possible, more farmers are becoming interested in spring wheat. Almost no spring wheat has been grown in Pennsylvania, the 1910 census report giving only 2,000 acres for the whole state. Spring wheat is not a dependable crop for Pennsylvania and it is a question if much should be sown even under present conditions.

Cowpeas Between Corn Rows on Thin, Sandy Soil

At the Pennsylvania Experiment Station, two varieties, Marquis and Minnesota 169 were grown in 1916 and 1917 in the field in which varieties of oats were tested. These two varieties of wheat gave an average yield of 13.1 and 13.2 bushels respectively, while 32 commercial varieties of oats averaged 70.1 bushels, and in fields adjoining 30 commercial varieties of wheat averaged 32.6 bushels. Moreover, the spring wheat was of poor quality. Similar results are reported from the Ohio Experiment Station in Bulletin 257. Five varieties were grown there from 1904 to 1912, but no one variety continuously. The average yield of 22 varieties of oats were from two to four times as great in pounds per acre as that of the different varieties of wheat

It Takes Power and Good Implements to Make a Good Seedbed

Spring Rye and Speltz

Spring rye and speltz are two other spring grain crops that should be considered. The spring rye may give a fair yield of straw but will seldom give a satisfactory yield of grain. Speltz is a form of wheat having the chaff adhere to the grains. It has about the same feeding value as oats. While it is almost an untried crop, indications are that is not well adapted to Pennsylvania conditions.

Cultural Methods

A note should be added in regard to the culture of these spring grains. All are likely to suffer from rust in the hot summer weather and for best results they should be sown as early as possible. It is usually thought that barley may be sown later than oats. All will respond to applications of commercial fertilizer, especially acid phosphate, a fair application of which is 200 pounds per acre. Commercial forms of nitrogenous fertilizer as a rule have not given good profits when applied to oats, and likely will not when used for other spring grains unless the soil is low in fertility, and then not over 75 pounds of nitrate of soda or high grade blood in addition to the acid phosphate could be recommended. The rate of seeding should be about as follows: Oats and barley, 8 to 9 pecks; spring wheat, 7 pecks; spring rye, 6 to 7 pecks and speltz, 7 pecks. In most soils where weeds are not too troublesome, disking should give as good results as plowing.

(Editors' Note.—In connection with this question this spring is that of what to do with unpromising wheat fields. Late sowing and the severe winter have caused a most unfavorable prospect. Shall such feeds be left to produce what they will, or should they be disked up and seeded to other crops? The answer must be made by each farmer for himself, but it should be made carefully and soon.)

More Crops With Less Labor

American farmers are confronted with the most difficult problem which they have ever been called upon to meet—the necessity of increasing farm production with an ever decreasing supply of farm labor. To solve this problem agriculturists have proposed a number of plans, some of the more important of which are as follows:

First.—The use of more farm power by replacing or supplementing horses with farm tractors, thus increasing the productive capacity of man-labor, making possible the farming of larger acreages and accomplishing more timely and a better quality of farm work, which should result in increased yields.

Second.—The use of labor-saving and larger farm machines for tilling the soil and harvesting and handling the crops which should likewise result in greater achievement with the same or less man-labor.

Third.—The use of all available farm manure supplemented when necessary with proper commercial fertilizers in order to increase the productive power of the land, and thus give larger yields and greater returns for the labor expended.

Fourth.—The planting of well-bred seed of adapted varieties of corn and other grain, and the testing of the germination of seed corn and other seeds in order to insure better stands and larger yields.

Fifth.—A more careful organization of the farming business with reference to live stock raising, cropping plans, soil fertilization, the most economical use of available labor, machinery and power which the farm affords, and the securing of necessary working capital to purchase essential equipment and supplies.

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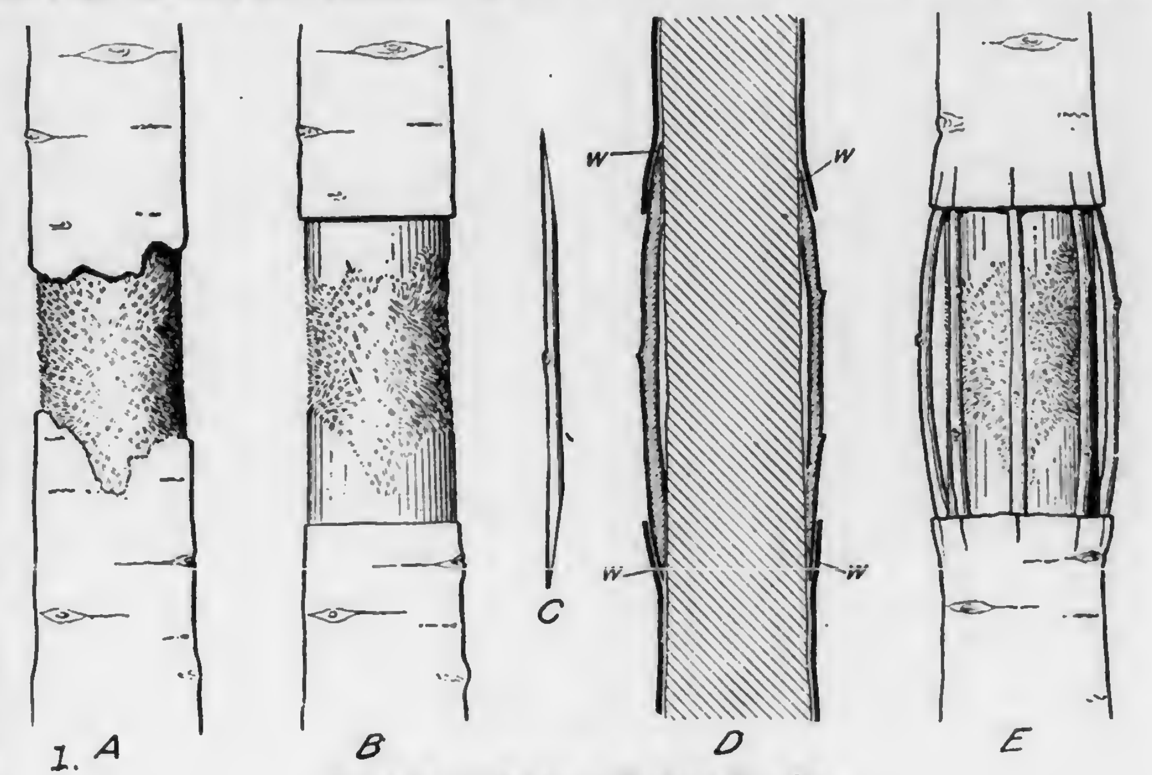
Horticulture

GIRDLED TREES

"Last winter the rabbits got hungry and ate the bark from nine of my little apple trees. The trunks are girdled all the way around. If there is any remedy by which I can save them I should be very glad to know it."—R. S. S., Bucks Co., Pa.

There is an unusual amount of this kind of injury in the state this year, done by either rabbits or mice, probably chiefly because of the long continued covering of deep snow.

Where trees are girdled completely the only practicable method of saving them is by bridge-grafting. This is done by using scions, or twigs of the preceding season's growth, to bridge over the injury by connecting the two portions of the bark which have been severed. The work can be done any time before the buds get well started into growth. It is usually best, however, to get it done somewhat before growth starts so as to enable one to secure plenty of scions or twigs that are still dormant, as the complete dormancy of the twig used is important.



Details in Making Bridge Grafts

The principal steps in the process are shown in Figure 1 and they are carried out as follows: First, cut back the irregular edges of the bark to an even margin of sound tight bark, both above and below the wound. Then select twigs, or good healthy water sprouts, of last year's growth and cut them about 3 inches longer than the space to be bridged. These twigs may be selected sometime prior to grafting, and may be kept dormant by burying them in a cool, shady place if there is any danger of running too late with the work. It is also well to remove the buds from the scions, before setting them in the tree.

Next bevel the ends of the scions as shown at C in Figure 1, by a single, long, slanting cut at each end made on the same side of the scion. Slit the bark slightly at the upper and lower margins of the wound, and force the sharpened ends of the scions under the bark at these points, as shown at D, and fit them together so that the cut surfaces on the scions will lie perfectly smooth and flat against the wood of the tree. The success of the whole job depends on this last point, viz., of getting a smooth and close fit between the flat, freshly cut surfaces of the scions and the wood or cambium layer of the trunk, and without disturbing or loosening the bark of the trunk too much. The permanence and tightness of the fit can usually be very materially improved by tacking the ends of the scions against the trunk by means of a small wire nail at each end. We have found this very advantageous in our own work.

A liberal number of scions should be used, in order to furnish a sufficient connection and also to provide for occasional failures. There is no advantage in placing them less than an inch or an inch and a half apart, however, as closer placing may loosen the bark and make it more difficult to keep the unions firm and tight.

The operation is completed by thoroly covering the ends of the scions and the margins of the wound with grafting wax. If the wound is low enough, it is also advisable to mound the soil up around the trunk until the grafted area is completely covered, and leave it that way thru the first season at least. If this can not be done, a coating of melted grafting wax over the barked area is usually worth while.—J. P. S.

PEPPERS AS A COMMERCIAL CROP

When the writer was a boy (which was somewhat more than a decade back) a leading truck grower in our community grew a small piece of "bull nose" peppers. When this crop was yielding heavily, I remember hearing the farmers say they did not believe so many peppers could be disposed of at remunerative prices. The only demand for them at that time was a few in each household for pickling purposes. However, that farmer sold his crop and continued planting from year to year, increasing his plot as demand increased. Others tried their "luck" with the new crop and succeeded with it as well as they did with most other crops. That was the beginning of commercial pepper-growing in this section of New Jersey. Since that time the growing of this crop has gone forward by leaps and bounds, until today. Some growers are planning to plant 75,000 to 100,000 plants the coming season and this is no more than has been planted for some years back.

Thus pepper growing has increased from 3,000 to 4,000 plants on one man's farm forty-five years ago to an acreage sufficient to produce a daily pick for the whole community of eight to ten thousand barrels. Even with this vast increase in production it has not kept pace with consumption, especially since the opening of the war. For two decades or more the pepper sold—except for the first few pickings — at about one dollar per barrel. For the last two seasons, the crop has sold on an

average of three dollars per barrel, ranging all the way from two to five dollars.

Some may ask what have peppers to do with war? To that I have this to say. The pepper has become so popular that it is used in dozens and dozens of food products,—many of which are exported for army use. Aside from that, enormous quantities are consumed in this country. Most foreigners consume great quantities of peppers, especially the Italians, Poles and Hungarians.

The pepper crop is one that is quite easily grown in the field. However, it requires some knowledge of hotbeds in order to get the plants in time. The plant can not be grown in the open and a crop harvested. They must be started in a hotbed and transplanted from there to the field.

Varieties

There are numerous varieties, and many of them so distinct that a blind man could distinguish one from the other. There is greater difference in pepper varieties than there is in any other crop the trucker grows. We have the "Bull Nose" and modifications of it. Then there is the Cowhorn, several varieties of it, with more or less different habits of growth. Some produce a small bush, while others grow a larger bush. Some varieties grow short and "cubby", while others grow long and slender. Another is neither "Bull Nose' nor "Cowhorn"; in shape of fruit, it is between the two. Some of this type are a much lighter green while growing. Then, we have abnormal ones like the "Chinese Giant" which grows to an enormous size. These, however, are not good commercial varieties because they set too few fruits; but when crossed with a good producing "Bull Nose" the cross makes a good marketable product. In all these mentioned none are planted to any extent in this section. The bulk of the acreage planted is from another variety selling under names such as "Cheese", "Squash", "Strawberry" and it would be more appropriate to call it "Pumpkin" because many of the fruits are shaped like a miniature pumpkin. This variety is planted very extensively in this locality. Now, we have a subdivision or I might say two. First, there are hot and sweet fruits of almost all varieties. Second, there is red and yellow fruit of many varieties. Furthermore, there are thick- and thin-shell varieties. Inasmuch as the shell or bod is the edible portion, it follows that the thicker that is, the greater value it has. That is why the little "Cheese" pepper has become a universal favorite. In a section where other conditions prevail, some of the other varieties may prove more popular.

During warm weather the sweet pepper sells at a higher price than the hot one but during the fall when the weather becomes cool and the commercial packers are in the market the hot fruits will bring just as much money as the sweet ones.

(To be continued.)

TIMELY FRUIT NOTES

By Dr. J. P. STEWART

Leaf-Curl and Borers in Peaches

"I have recently seen an article on fall spraying for the control of leaf curl on the peach. As this is so different from anything I have read I would like to ask your opinion about it. They recommend the 1-15 for curl or 1-8 for curl and San Jose scale.

"My orchard is inclined to be infested with curl, and altho we have sprayed every spring I find nearly every tree has it to some extent, not sufficient to do any great damage, but in sufficient evidence to show that it must be kept in subjection.

"Can you tell me what success has attended the use of carbon bisulphide for control of borers? I know the Government experimental stations have been trying this for a few years, but when I wrote for results, they answered that they would state nothing before publication." E. S. P., Bucks County, Pa.

Present evidence indicates that the leaf curl can be controlled very successfully by spraying either in the fall after the leaves have fallen, or in the spring clearly before any growth starts in the buds. Most of the failure to secure complete control by spring applications of lime-sulphur at scale strength have been due to the fact that the applications were made too late. Infection is likely to occur at the very first evidence of new growth at the tips of the buds, and the disease can not be controlled by spraying after it has entered the new tissues.

In regard to the use of carbon bisulphide for borers, would say that this is less certain than the mounding and cutting-out method and is very little used on peaches. It has been used with fair success in the case of apple and similar borers which go farther into the wood, but it is not always easy to locate the tunnels which are still occupied and the borers are usually protected within their tunnels by the presence of sawdust or frass with which they usually keep the burrows well plugged up behind them.

In general, I would prefer to use a good sharp knife and wire, or similar contrivances, to make sure of getting rid of the borers.

Fertilizing Apples and Strawberries

"We have an orchard 15 years old, on thin sandy and gravelly hill ground that needs fertilizer badly. We have acid phosphate, 16 percent and can get dried blood from the packing houses here at about $2.50 per 100 pounds. Would like to know if the acid phosphate would be of any benefit to apples of that age; also, about the best time to apply. Would acid phosphate be of any good on strawberries?" M. and G., W. Va.

You could well apply both the dried blood and acid phosphate on your trees. The dried blood should be used at the rate of at least 200 pounds to the acre and the acid phosphate may be added at the same rate, or slightly more. It is not likely that much benefit for the current season's crop will be secured from the dried blood application because it is slower-acting than nitrate of soda, which has been shown to have value in this regard. At the same time you should be able to secure material benefit from the crop next year from an application made any time within six or eight weeks of blossoming.

In fertilizing strawberries, the practice of one of the most successful growers in New Jersey is as follows: Just before or immediately after setting the plants, ground bone is applied broadcast at the rate of 1,000 pounds per acre. Four weeks later, high-grade tankage is applied 6 or 8 inches on each side, at the rate of 500 to 600 pounds per acre.

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Medium size 3 to 4 ft.	.25	2.00	18.00
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PHILADELPHIA, PA., MARCH 30, 1918.

Women Labor

The suggestion is frequently made that city women do what they can to help out the labor situation on the farms. There can be no doubting the sincerity or good intention of the women making these proposals, but it is questionable if much valuable help can be gained. There are hundreds of positions in necessary industries that can be well filled by working women, but general farming is not one of them. Certain operations in truck farming and small fruit raising may be done by inexperienced women under competent direction, but few important phases of general farming can be filled except by women especially fitted by experience and training. Many farm women do a great deal of outdoor work without injury to their health. Many more will help with the work this year than normally. The real place for town and city women to lend aid would seem to be in doing country housework to release the country women to such outwork as they can do better. The demand for help in the country homes is almost as urgent as out on the farms. There is abundant opportunity to help.

* * *

Milk Prices

The expected happened in the Philadelphia milk market. The Federal Milk Commission for the state announced a reduction of one cent per quart both to producers and consumers to take effect on April 1. The price to farmers will be 7¾ cents per quart for 4 percent milk f.o.b. Philadelphia, with the usual additions and reductions for butterfat. Full schedule of farmers' prices will be published next week. A reduction in price is always disappointing to the producer, but under existing conditions nothing else could be looked for. The condensary business has developed as a determining factor in the last several months. So long as transportation facilities permitted, the condensaries took all of the surplus milk at a price that sustained the whole milk market. With the curtailment of shipping, together with shortage of tin, the demand from condensaries has fallen off all over the country, and prices had to drop.

* * *

Flour Regulations

New regulations affecting the handling of wheat and wheat flour by farmers in Pennsylvania are published on the next page. Regulation of any character is bound to be annoying to a people that has enjoyed unlimited freedom in the use and abuse of food products. But wheat and wheat flour are among the most important contributions that we can make to the success of the war. It is well known that our normal surplus of these products is already exhausted. We have on hand less than enough to meet our normal requirements from now until harvest time. We must further deplete our short supply by making liberal shipments to our Allies. These shipments are fully as necessary to the success of the war as shipments of munitions and men. What wheat is to be sent can not come from a surplus supply. It must come from what we are able to save by wise and uniform conservation methods practiced by our people, and that means farmers as well as others. The new regulation permitting farmers to have their own wheat ground for their own use for the prescribed period of time removed a serious hindrance to established custom in many sections. The other requirements, looking solely to the substitution of other grains so far as possible, and thus releasing larger quantities of wheat and wheat flour for the urgent needs of the Allies, are slight sacrifices that most farmers are glad to make.

* * *

"Uncle Amos"

Most of our readers have probably come to know Uncle Amos, whose picture and homely sayings have appeared for some time in Pennsylvania Farmer. We might possibly have written "homely" before "picture" in the foregoing sentence and still been truthful. It is on this point that some of our readers object. They want to know why Uncle Amos' picture should not represent a modern farmer instead of a city paper's caricature of him. We admit that it is overdrawn, as is most work of art—even of beauty—but it represents a type which is passing away. Those of us who have known personally the good, old, honest, tho ungainly, farmer of this type do not feel fully recompensed by the substitution of a trim, modern man. There was a quality in the Uncle Amos type which has given backbone and brains to American civilization. No one need be ashamed of the ear-marks which hard work and privation have left on the bodies of those who have endured the hardships of pioneer life—experiences which made our lives possible and comparatively easy.

* * *

The Consulting Committee

The Federal Department of Agriculture has announced the appointment of a farmer committee of twenty-four members to be advisory to the Secretary of Agriculture and the Food Administrator. The appointment of this committee may be taken as a concession to the demand that farmers have some direct representation in the federal war program; but it is not what was asked for by representatives of farmers' organizations, and it is not likely to accomplish all that was looked for in the interest of agriculture. There can be slight if any objection to the personnel of the committee (see page 7). Most of the men are representative farmers; some are leaders of farmers' organizations and some have wide reputations as farm leaders. Pennsylvania and New Jersey are ably represented. But a large committee with members from widely scattered territory and little acquainted with each other, sitting for a day or two at long intervals, will not be able to give the advisory assistance or direction that is needed or that was contemplated in the request from the farmers' organizations.

The Federal Board of Farm Organizations, representing practically all of the farmers' organizations of the country, made a request for a farmer committee in its call on the President on February 8. But that request was for a smaller body of actual farmers to be selected by the President from men representative of and satisfactory to the farm organizations of the country. The committee was to report directly to the President on all questions that affect the increase of agricultural production and distribution. It was asked that this committee be held in uninterrupted session at Washington and have authority to secure information from all government sources. Such a committee was deemed necessary to give agriculture a partnership in the conduct of the war that would be on a par with other industries that have close and constant representation in Washington. The request was made with no thought of influencing special privileges or concessions to farmers, but merely to insure a broad, practical agricultural policy that would keep production to the high point required by the necessities of the war.

The farmers asked for advisory representation. They are given a plan that can yield only consulting representation at the best, and it will require rare quality of constructive statesmanship to make that representation effective. Pennsylvania has had an example of what a mere consulting committee can do, or rather what it can not do, in our state Agricultural Commission. Unless the members of this new federal committee develop unexpected strength, much the same results may be looked for.

* * *

Loans to Farmers

A rather careful student of agricultural affairs recently remarked that the worst slackers in our agricultural program were the small-town and rural banks. Faults in others always loom large to the critical; but this rather harsh charge is worth consideration. It is generally conceded that one of the greatest needs of agriculture is easier, short-time credits—a system or an institution thru which local farmers can borrow comparatively small sums of money for a short term of six months to one year at a low rate of interest and on safe but easily arranged security. Recognition of this need formed the basis of the Federal Farm Loan system. But the newly-created system does not offer short-term loans. Rural and small-town banks profess to be doing all that is needed. But some banks are doing more than others, and some recent independent activities indicate that few if any banks are doing all they could. We have an article for early publication giving a most interesting and instructive discussion of the attitude of the average rural bank and describing in detail the recent work of an exceptional rural bank. For the present we want to direct attention to work done by independent bodies.

On page 17 of last week's issue was an account of an extremely liberal credit arrangement provided for farmers in Crawford Co., Pa., last year. Public-spirited businessmen made a fund available from which farmers could borrow on easy terms—too easy so far as interest is concerned. We do not believe that it is necessary to lend money without interest. We believe that practically as many farmers would avail themselves of the opportunity and all would make better use of the money if a reasonable rate of interest was charged. The significant thing, however, is that farmers needed that money in small amounts. The loans averaged $30 each. That amount permitted many farmers to buy the seeds and supplies necessary to carry on full operations for the season. It is reasonable to assume that the lack of that small amount would have curtailed the activities of many and thus curtailed the aggregate production of the community had the fund not been available. The account does not say how many acres were added to the production area of the county, or how much produce was added because of those loans, but it does say that the experiment was a success and will likely be repeated.

Of greater interest, because of greater scope and detail, are the results under the Patriotic Farmers' Fund in New York State last year. This fund was also provided by a number of public-spirited men who appreciated the needs of the agriculture of their state. This money was loaned to farmers at 4½ percent interest upon no cumbersome security. The applicant secured the recommendation—not the legal endorsement—of three responsible neighbors and gave his personal note. A total of $290,000 was thus loaned to approximately 2,000 separate farmers. The loans averaged $99, and about 85 percent of the notes were paid as they fell due. The notes as a whole have been classed by bankers as from "good to fair". But the increased acreage in farm produce resulting from these small loans was 34,000 acres, and the estimated value of the products was in excess of three millions of dollars. Here was greatly increased production resulting from a small timely "lift" when most needed. The maximum loan was $150, and many ranged as low as $50. Again it is safe to assume that the production resulting would not have been undertaken had not the funds been available.

These two examples indicate the need of short-term credit facilities. We do not believe that terms need to be made any easier than is consistent with good banking practice; but farmers do need a system or an institution that will enable them to secure small sums in times of greatest need in the farm operations. The bank that meets that need is rendering the greatest service to its community at all times and to the nation in the present emergency.

HARRISBURG NOTES

Feverish to Help. — Now that springtime has arrived there are numerous movements under way to help the farmer. Some of them are more or less feverish, but they are signs of a wholesome awakening in the seat of government which may be reflected in legislation next winter. A list of activities rather bewildering is talked of at the Capitol. After leaving the state employment agencies to struggle along in efforts to list men for farms, there has been launched a general movement to get employers to send men to farms to help; that is, men who know something about farming. The plan for putting boys on the farm has been given a gubernatorial proclamation and what is most practical, the Secretary of Agriculture is calling on draft boards to see that the farm boys stay in deferred classes and that those granted such classification go back to the farm from mill, factory or office. From all accounts the number of boys registering for farm work is gratifying, but is going to take considerable training to fit them and now, when men are wanted, there are few to be had. The State Defense Commission has authorized buying of more tractors to help with plowing, if justified, and the forty originally bought will all be in service by April 1—some being already at work. The state has also re-established the farm advisory corps.

More Sales Made.—According to reports there have been very substantial reductions made since March 1, in the quantities of wheat and potatoes held on the farms. In many districts farmers who were prevented by winter weather and roads from getting their grain and potatoes to market have been busy, altho there is dissatisfaction expressed about the prices. In some sections of the state potatoes have sold considerably below a dollar a bushel. The effect of having over 10,000,000 bushels in storage on March 1 will probably be to reduce the acreage planted this year on farms.

Rates to Go Up.—There seems to be a general tendency to raise rates for all public service in country as well as city. Trolley companies are putting the rates for milk cans and bags and baskets higher, in some cases doubling them; telephone companies are advancing rates and electric, water and other utilities are joining the parade. In some cases the Public Service Commission has been appealed to for remedy of conditions, but in the main the increases are going unquestioned by people in their localities.

Highway Work.—The manner in which the state has been organizing its gangs for repair work on the highways does not indicate any great scarcity of available men. Hundreds of men are at work on repair of the main highways, especially between county towns and on the named roads which have had heavy winter truck traffic and in six weeks more probably the largest road maintenance operations ever undertaken by the state will be under way. Commissioner O'Neil believes in keeping dirt flying while running for governor and the combination is not a bad one.

A Heated Campaign.—The leading candidates for Republican gubernatorial honors now all seem to be on the same basis as regards the prohibition amendment and there are reports that there may be a candidate on a wet platform. Three weeks more remain in which to file nominating petitions and from indications the activities of the liquor people are going to be bent on electing men opposed to the amendment.

Pinchot Likely to Accept.—Acceptance of the governor's offer of a place on the State Commission of Agriculture by Gifford Pinchot is expected here soon and Capitol Hill will then settle down to watch the fireworks. To place Mr. Pinchot and some other eminent men the governor has in mind for the Commission, it will be necessary to create some vacancies on the Commission, but a little detail like that has never worried the governor. Mr. Pinchot remarked while here that if he accepted he would be "an active commissioner", and "make some stories".

NEW JERSEY FARM NOTES

Horses Sell High.—Wartime conditions have affected the annual spring horse sales and farmers find they have to pay high prices for teams needed for their farm work. At a recent big public sale in that vicinity, 22 head of Ohio horses and mules averaged $225 each. The highest price paid for a horse was $275, and three pairs of mules commanded $695, $610 and $500 respectively. It is understood that many of the farmers sold their horses last fall, one reason being the increased price of grain. This region of the state has also been drained by contractors for the army cantonment at Camp Dix in Burlington County and for the munition plants already built or under construction. These have taken many good working horses. Horse dealers who have been to the west for animals say army agents have obtained much of the good stock out there also.

Agricultural Program.—The members of the Monmouth County Board of Agriculture in quarterly meeting have pledged themselves to the government's program for increased farm products this year. Altho there were expressions of fear of a serious shortage of farm labor, there was a unanimous endorsement of the program and it was made plain that every tiller of the soil must do his utmost in the raising of food to win the war. E. A. Sexsmith, president of the county board, vigorously condemned the condition in the county which leaves Farm Demonstrator Ellwood Douglass without sufficient facilities, especially in the way of an office. He said other counties in this state, with half the agricultural wealth, provide their demonstrators with finely equipped suites. Among the work outlined by the Demonstrator for the coming year were the following projects: County and community organization; better seed potatoes; increased corn production; better dairy management; poultry management; cheaper pork production; boys' and girls' club work; orchard management; marketing of perishables. Monmouth County will use schoolboys for farm work this spring, it was decided.

Tomato Prices. — The representatives of the Tomato Growers' Association of Burlington, Camden, Gloucester, Salem and Cumberland Counties have gone on record as being of the opinion that the tomato growers are entitled to the cost of production plus a fair profit, and that the average estimated cost of growing tomatoes for South Jersey in 1918 will be about $27 a ton and, therefore, it would be inexpedient for the individual grower to contract at a price less than $30 a ton.

Colored Farmers Organize.—Better organization of the colored farmers of the state is being planned by the State Department of Public Instruction thru the Bordentown Colored Industrial School. The work will be along the lines of extension during the spring and will be similar to that conducted by Hampton and Tuskegee. J. R. Fugett, instructor in Agriculture at Bordentown, has been active in Salem County in interesting the negro farmers.—L.

NEW YORK LETTER

Maple Sugaring Begins. — Maple sugar making is well under way this week. Sap is unusually sweet this year supposedly because of the extremely cold winter. But sudden warm weather will make the season unusually short.

Prohibition Fight Continues.—Not since race track legislation in Governor Hughes' administration has there been such conflict in the Legislature as the present prohibition question involves. Both Senate and Assembly have repudiated the federal prohibition amendment and evade the issue by a proposed referendum. The Governor calls such a referendum a deception and an evasion. He urges immediate ratification, which at present seems hopeless and promises to veto the referendum bill.

Market the Wheat.—The various county food administrators are urging their farmers to market all wheat except seed wheat before May 1, in pursuance of a federal policy.

State's Death Rate Lowered.—The lowest death rate of the state was reached in 1915, that of 14.5 per 1,000 living persons. This year's record is 14.6 per 1,000. Great things in this line have been accomplished thru better control of children's infectious diseases.

The Result of New Principles of Draft.—As a result of repeated urging of the great need of labor on the farms, the Syracuse district draft board reports that of 3,000 farmers drawn from the twelve counties of Central New York only 117 had been placed in Class 1. Of these many will be reclassified. The adjutant-general has also pointed out that because a farm's acreage is small it does not follow that work on that farm is not necessary to the nation's welfare, urging that farmer's sons and farmer's helpers be deferred to other classes wherever possible.

To Save Wet Beans.—Over a million dollars' worth of wet, immature beans are still held in Western New York and earnest effort is being made by growers and by the state bean shippers' association to dry these beans for food. Elevator men have offered the use of their drying plants and individual apple drying houses are in use—the latter turning out about 100 bushels of beans a day. Some of the beans have been canned, and others will be. The necessity of early maturing varieties is urged on all growers.

FARMER ADVISORY BOARD APPOINTED

A report from the U. S. Department of Agriculture on March 15 says: A few days ago it was announced that the Secretary of Agriculture and the Food Administrator had formed an Advisory Committee of representative producers of farm products and live stock, the members of which have been selected with reference not only to the larger agricultural interests but also to geographical considerations. A partial list of the names of the members of the Committee already has been made public. The full membership is as follows:

E. S. Brigham, St. Albans, Vt.; Wm. F. Pratt, Batavia, N. Y.; C. J. Tyson, Floradale, Pa.; David R. Coker, Hartsville, S. C.; Henry C. Stuart, Elk Garden, Va.; C. S. Barrett, Union City, Ga.; David P. Massie, Chillicothe, O.; Oliver Wilson, Peoria, Ill.; D. O. Mahoney, Viroqua, Wis.; Marion Sansom, Forth Worth, Tex.; F. J. Hagenbarth, Spencer, Idaho; N. H. Gentry, Sedalia, Mo.; Isaac Lincoln, Aberdeen, S. D.; J. N. Hagan, Bismarck, N. D.; W. G. Gordon, Humboldt, Tenn.; W. L. Brown, Kingman, Kan.; H. W. Jeffers, Plainsboro, N. J.; Eugene Funk, Bloomington, Ill.; Milo D. Campbell, Coldwater, Mich.; W. W. Harrah, Pendleton, Ore.; George C. Roeding, Fresno, Cal.; W. R. Dodson, Baton Rouge, La.; C. W. Hunt, Logan, Ia.; John Grattan, Golden, Colo.

The Committee will be called into conference by the two departments from time to time to discuss national agricultural problems, and the first meeting will be held in the office of the Secretary of Agriculture on March 28.

WHEAT AND FLOUR REGULATIONS

Following is new statement of wheat and flour regulations issued by the Pennsylvania Food Administration on March 22. This statement specifically defines the regulations as affecting the farmers. The Official Ruling, effective March 25, 1918, is as follows:

1. A farmer may take wheat of his own raising to the mill for grinding, in sufficient quantity to meet his household needs, to September 1st, 1918, and may receive its equivalent in wheat flour.

2. No farmer is permitted to make a sale of wheat flour in any quantity, under penalty of the law.

3. Purchases of wheat flour by farmers are governed by the same rule as apply to purchases by the general public. Millers and retail dealers will sell wheat flour to farmers in quantity to meet household requirements for thirty days, when such wheat flour sale is accompanied by a sale in combination of an equal weight in official cereal substitutes. This sale of cereal substitutes may be waived by the miller or dealer in cases where farmers certify in writing to the previous possession of such substitutes in the quantity specified, together with an agreement to use the substitutes, in equal quantity, in connection with the wheat flour for family consumption.

4. Nothing in these rules shall be construed as exempting farmers from making the Official Householder's Flour Report of flour on hand, etc.

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The Dairy

IN THE MILK FIELDS

Inter-State Association Notes

The officers of the Inter-State Milk Producers' Association have recently visited many of the subordinate groups. The Vice-President and the Secretary attended a stirring meeting at Mt. Holly, N. J. They took part in the investigation and decision of the Food Administration at Easton, Pa. The Secretary visited Paradise Local, Lancaster County, and a joint meeting at Pennington, N. J. The Vice-President has been among the locals in Lebanon County. Our tester, Mr. Hicks, has been in Cumberland and Juniata Counties and Mr. Twining, our other tester, in Northampton County.

The office in Philadelphia is preparing a map indicating the extent of the dairy industry and of dairy organizations in those parts of New York, New Jersey, Pennsylvania, Delaware and Maryland that are influenced by the Philadelphia market. The increasing need for accurate information and its rapid dissemination has led to considerable increase of our mailing list and an increased activity in our educational department. The co-operation of several important dairy papers has been secured. The Executive Committee is now in a position to fill more and more requests for speakers. Meetings should be held at once in local districts to talk over the serious situation that confronts all eastern dairymen. More members are needed to keep this increased work going.

The association has passed all those experimental stages, when faint hearted people can say, "Wait 'til I see what happens". The movement is here to stay—it is helping everyone regardless of membership. There is nothing narrow or selfish about it and it has already done more for every dairyman individually than it promised. Compare the price of one year ago, $2.07, with the present price $3.57. If you doubt it, ask yourself, "Have I been carrying my share of the load?" If not, go to the officers of the nearest local and join at once. Don't in these busy times ask anyone to come to you. Do it now.

Milk Consumption

The Pennsylvania Food Administrators have satisfied themselves that it is the very best kind of conservation to increase the consumption of milk. The various interests have co-operated and after a month of educational campaign there are numerous signs that it is going to be very effective. There have been circulars distributed in the schools, a technical one for the teachers and leaders, and a simple book of recipes and facts for the children to take home to their mothers. Also all county leaders have had the matter before them and the movement has spread to other cities in Pennsylvania. The dealers have paid for suitable trolley car and billboard advertising and other advertisements, and the Inter-State Milk Producers' Association has contributed the services of an expert to address all meetings interested in the problem. Other cities may benefit by this experience by addressing either Dr. Clyde L. King, Pennsylvania Food Administration, or Miss Ellen S. Brinton, his assistant in publicity.

Advertising Milk

Have we not all failed to appreciate the need of advertising milk as milk, without regard to dealer or brand? We have appreciated the effects on the industry of isolated cases of infection from contagious diseases, of sensational exposures of bad practices, but what have we done to counteract these? Much attention has been called to the dangers of bad milk; but little to the advantages of good milk. Should we not see to its that all our dealers handle good milk? Should we not make our campaign a positive one and keep the high standard of our product and its value and importance as a food constantly before the public mind? Then, too, have we not seen one dealer's brand advertised spasmodically and then again his competitor's? Was that good business unless accompanied all the time by a continuous systematic campaign to get our consumers to use more milk? What's the use of robbing Peter to pay Paul?

The Philadelphia experience shows that while the advertising field has only been scratched over, here and there, the harvest has exceeded all expectations. What could we expect from a thoro systematic campaign? The best feature about it is that in these times of stress we are preaching true food conservation and the safeguarding of the public health.—B.

MILK SITUATION SERIOUS

Late Developments in the New York Field

About the middle of March local units of the Dairymen's League were notified from league headquarters in New York that condensors and manufacturers have repudiated the Federal Milk Commission and refused to further obey its findings, and distributors of fluid milk have made certain threats unles the Commission makes changes to suit them. The situation at this time is tense. Condensors threaten to close their plants in the east, cheese is a drug on the market and butter and cheese are in large supply in the markets of the country. The government is understood to have cut down the production of ice cream for the summer and thus forced back upon an already overstocked market large quantities of milk. There is an oversupply of certain food products, notably milk and potatoes, and the government is still urging economy in their use. The government seems indisposed to allow cheese to go into use in the army and is doing little to help dairy farmers to dispose of their products and may be discouraging their use to a considerable extent. To this is added the efforts of the New York City press and others to discredit dairymen. There is a strong sentiment among farmers to dispose of their cows, but the present situation will tend to depress prices and it is difficult to say what will be the effect. County meetings of dairymen are suggested for the 23d of the month, and will likely be held unless some settlement is reached in the meantime.

Dairymen have suffered considerably for several months from the dealers and the food administration, but they have tried to adjust themselves to the situation and make the

best of a bad bargain, trying to convince themselves that the Commission, at least, was doing its best. Just how this added grievance will be taken when sentiment becomes crystalized I will not undertake to predict. A few days will help to clear the situation in some ways, but may not find an outlet for milk. We are assured on one thing which we hope will not be deviated from, and that is that the League is trying to sell all of the milk and not a part only, and to get the best possible price obtainable that will keep all avenues open, and keep the condensaries and cheese and butter factories open, as well as the milk stations. This was omitted in the last sale and has caused much trouble. Such a resolution was urged at the last state meeting, and now the League has adopted it according to a recent circular letter.

There is one thing that seems certain, farmers as well as townspeople are not using dairy products as largely as they should. It is suggested that something like the following be asked for in each League and that it be passed and adhered to all along the line among the fifty thousand dairymen in the League.

Whereas, there is an underconsumption of dairy products in cities and in country at the present time, and the very considerable surplus of such products on the markets appears to be demoralizing trade, and

Whereas, we believe that the health of the people would be materially improved by a more liberal use of the products of the dairy, therefore,

Be it resolved, that we pledge ourselves, and urge upon all people, especially farm people, the importance of a liberal use of butter to the exclusion of oleomargarine, cheese as a partial substitute for meat, and a very liberal use of milk, not only for children but for adults as well, in order that the great dairy industry may not unduly suffer, the cost of living may be reduced, and especially that the health of the people may be better conserved.—L.

ACTIVE GUERNSEY ASSOCIATION

Progressive Stand on Tuberculosis

The Grove City (Mercer Co., Pa.) Guernsey Breeders, at their second annual winter meeting, made some history for themselves and started a move that has only been made by one other association in the United States previously. That, too, was made by a Guernsey Breeders' Association, in South Carolina. The move referred to was a unanimous motion by those at the meeting to take steps to have their herds tested for tuberculosis under government supervision with the idea of having them eventually become accredited herds. In order to put his herd that much nearer the accredited honor, one member, whose grades averaged during the past twelve months 334 pounds of butterfat, has already advertised them all for sale. It is his intention then to have his seven purebreds tested, have the reactors condemned, if there are any, then buy 10 imported heifers. Other members kept away from the meeting by excessively bad roads, when talked to by those present, are favorable to the plan. Dr. Smith, of the U. S. Bureau of Animal Industry, presented the plan at the meeting.

The American Guernsey Cattle Club was represented at the meeting by

19 OATS-
19 CORN-
1918 WHEAT-1,000,000,000 BUSHELS
Cleveland

The Task Before the Nation's Farmers

One billion bushels of wheat must be produced in this country this year.

An enormous increase in the yield of corn and oats is necessary.

Thousands of extra acres must be cultivated. Each individual farmer must produce about one-third more grain than last year.

The task before the nation's farmers is stupendous. Intensive methods of every kind must be employed. Machinery must take the place of muscle wherever possible.

In the face of this emergency the Cleveland Tractor becomes an absolute necessity. Its tremendous value to the farmer is emphasized more than ever.

Cleveland Tractor

The Cleveland Tractor not only conserves time and labor—it does far *cheaper* and *better* work. And by doing better work it makes possible the production of larger and better crops—enabling you to do your part for the government—*and make more money for yourself.*

The Cleveland Tractor shows the way. It plows 3½ miles an hour—8 to 10 acres a day. It travels on its own tracks like the great "tanks" of Europe. It will go practically anywhere—through ditches, gumbo, sand and gravel. It is steered by the power of its own engine—simply and easily, and will turn completely around in a twelve-foot circle.

It will not pack the soil, will not mire, will not slip or flounder. It has 600 square inches of traction surface. The track is designed for long service. The sections are constructed to prevent filling or packing with mud, and protection is provided to prevent dirt and mud from falling into the track. The sections are joined with hardened steel pins which have their bearings in hardened steel bushings. The Cleveland weighs less than 3200 pounds. It can be housed in less space than is required for one horse.

The Cleveland develops 12 h. p. at the drawbar for hauling and gives 20 h. p. at the pulley belt—plenty for stationary work of all kinds.

But in spite of its unusual power, the Cleveland is small and can readily be used in orchards and under and among small fruit trees.

Rollin H. White, the famous motor truck engineer, designed the Cleveland Tractor. He has used only the best materials. Gears are protected by dust-proof, dirt-proof cases and are of the same high quality as those of the finest trucks.

Prepare *now* to produce the enormous crops which we must have—and incidentally make more money for yourself. Get ready *now* for the great tasks before you. Order your Cleveland Tractor *now.*

Write to us for complete information and the name of the nearest Cleveland dealer.

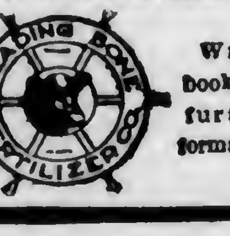
THE CLEVELAND TRACTOR COMPANY, Dept. AA, Cleveland, Ohio, U. S. A.

Reading Bone Fertilizer
Quality Service Satisfaction

We ask the patronage of every intelligent farmer desiring high-grade fertilizers, representing the most value for the money expended.

Reading Bone Fertilizer Co., Reading, Pa.
(This trade mark means quality)

Ask your dealer for Reading Bone Fertilizer.



Write for booklet and further information.

IRON AGE
Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow more crops with least expense? How can I cultivate more acres and have cleaner fields?

IRON AGE *Riding Cultivator* will help you do this. Has pivot wheels and gangs with parallel motion. Adjustable to any width of row. Every tooth can be raised, lowered or turned to right or left. Lever adjusts balance of frame to weight of driver. Light, strong and compact—the latest and best of riding cultivators. We make a complete line of potato machinery, garden tools, etc. Write us today for free booklet.

Bateman M'f'g Co., Box 76D, Grenloch, N.J.

ONTARIO

drills will pay you *best* in the end. Ask your dealer to show you the economical features in the Ontario or write us direct for descriptive illustrated booklet.

Ontario Drill Company, Baltimore, Md.

PLASTIC ROOFING

applied with a trowel over your old roof, costs less than prepared roofing and lasts longer.
LIQUID ROOF CEMENT applied with a brush will lengthen the life of your old roof. Order a barrel today, try a sample, and if not satisfactory return at our expense.
The Blackstone Oil & Paint Co., Cleveland, O.
References: Union Commerce National Bank

WIRE FENCE
Basic Open Hearth Steel—shipped on approval direct from factory. Get our special prices for short time only. Compare with others.
Rubber or metal roofing—highest quality at money-saving prices.
Standard Supply House
42 West Logan Street
Noblesville, Indiana.

WITTE
Kero-Oil Engines
Twice the Power at Half the Cost
Sizes 2 to 22 H-P.--Select Your Own Terms -- Direct-from-Factory prices. Write your own order--Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE-- by return mail, Postpaid.

Write Today
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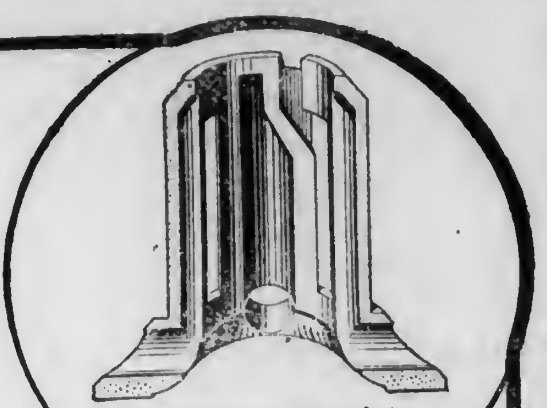


Patented milk distributing device used in the New De Laval (sectional view)

Some big advantages that you can obtain only in the

NEW DE LAVAL CREAM SEPARATOR

GREATER CAPACITY: Without increasing the size or weight of the new bowl, its capacity has been increased.

CLOSER SKIMMING: The improved bowl design, together with the patented milk distributor, gives greater skimming efficiency.

EASIER TO WASH: Simpler bowl construction and discs, caulked only on the upper side, make the bowl easier to wash.

HAS SPEED-INDICATOR: Every New De Laval is equipped with a Bell Speed-Indicator, the "Warning Signal" which insures full capacity, thorough separation, proper speed and uniform cream.

EASIER TO TURN: The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest and least tiring to the operator.

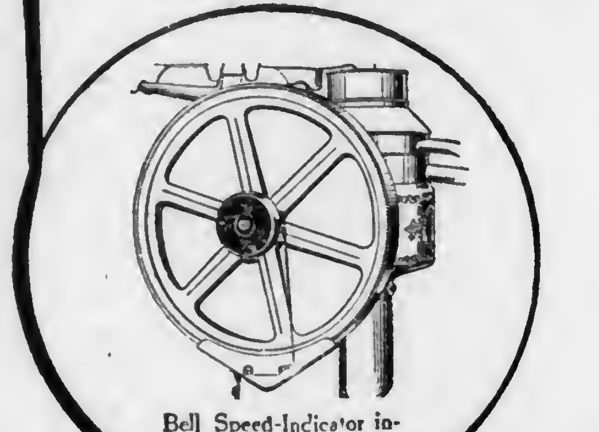
WEARS LONGER: Due to its much lower bowl speed, high grade of materials used, and careful and exacting workmanship, the De Laval outlasts and outwears other makes by far.

ASSURED SERVICE: In almost every locality there is a De Laval representative, able and ready to serve De Laval users.

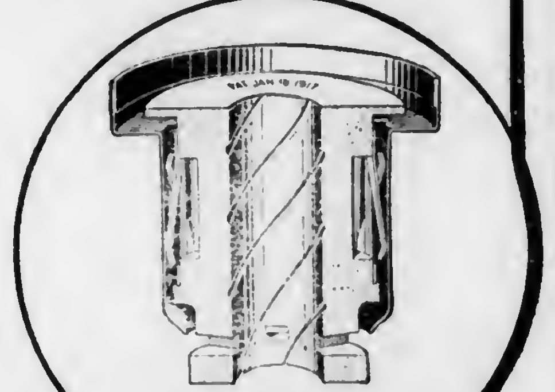
If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval at once. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several instalments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

THE DE LAVAL SEPARATOR CO.
165 Broadway, New York 29 E. Madison St., Chicago



Bell Speed-Indicator insures proper speed in every New De Laval



Cross-section of New De Laval self-oiling top spindle bearing

For Sale Used & Rebuilt Machinery

1 24 H. Port Huron steam traction engine; 2 22 H Peerless; 2 22 H. Wood Bros.; 2 20 H. Rumley; 20 H Baker; 20 H. Huber; 18 H. Huber; 3 18 H. Peerless; 18 H. Nichols and Shepard; 18 H. Minneapolis; 16 H. Pitts; 16 H. Stevens; 15 H. Case; 15 H. Port Huron; 12 H. Case; 2 32x54 Wood Bros. steel threshers; 28-inch and 26-inch Case steel threshers; 30-inch and 32-inch Advance; 30-inch and 34-inch Pitts; 28-inch and 32-inch Nichols and Shepard; 28-inch Huber; 30-inch and 33-inch Peerless; 33-inch Russell; 33-inch Port Huron; 22-inch Avery; 17x22 belt power Ann Arbor baling press; 14x18 Ohio; 8-16 Avery gas tractor; 8-16 International; 15-25 Titan; and many others. Save money by buying used machinery. Ask for new Greyhound machinery catalog.

The BANTING MFG. COMPANY
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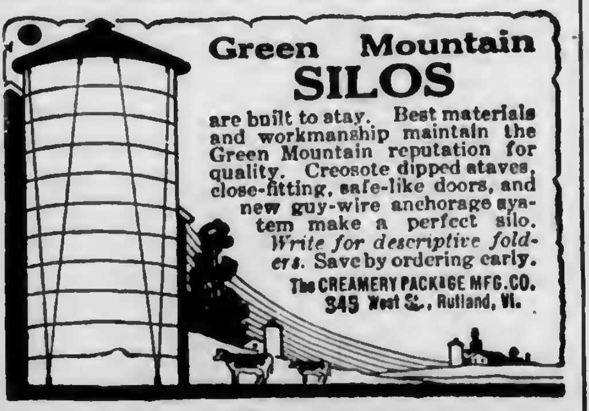


Green Mountain SILOS

are built to stay. Best materials and workmanship maintain the Green Mountain reputation for quality. Creosote dipped staves, close-fitting, safe-like doors, and new guy-wire anchorage system make a perfect silo. *Write for descriptive folders.* Save by ordering early.

The CREAMERY PACKAGE MFG. CO.
345 West St., Rutland, Vt.

Only $2 DOWN ONE YEAR TO PAY

$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here.

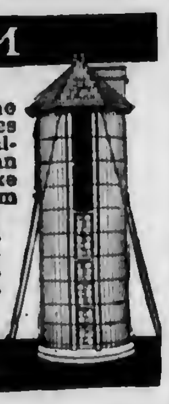
30 DAYS' FREE TRIAL Earns its own cost and more by what it saves in cream. Postal brings Free catalog-folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

125,000 new in use

ALBAUGH-DOVER CO., 2167 Marshall Blvd., CHICAGO

TIGHT AS A DRUM

A PERMANENT SILO



Every Economy Silo is equipped with the Storm Proof anchoring system that makes it absolutely permanent. Ensilage is always fresh and sweet—it can't spoil in an Economy Silo. Perfect fitting doors make the Silo perfectly air-tight. Hoops form easy ladder. Built of long leaf Yellow Pine or Oregon Fir. You can't buy a better silo. Also all sizes Water Tanks. Our motto is quality through and through. Factories at Frederick, Md. and Roanoke, Va. Write for catalog.

ECONOMY SILO & MFG. CO., Dept. Q, Frederick, Md.

ECONOMY SILOS

Renew your Subscription before the busy season.

PENNSYLVANIA FARMER
261 S. 3rd St., Phila., Pa.

DAIRYMEN!
HERE IS A
REAL MILKER
Send at once for FREE Booklet
Buckwalter Supply Co.
Dept. P. Lancaster, Pa.

A. C. Ramseyer, a prominent importer and breeder. He gave a talk full of very helpful advice to beginners in the purebred business. And this is what all the members of this young Pennsylvania Association are, for a year ago, when it was organized, there were hardly enough Guernseys in this section to make a "Dutchman's couple" while today several of the members are approaching the double figures in their numbers of purebreds. One point brought out in particular by Mr. Ramseyer was to watch out for type as well as "blood" when buying. Prof. A. A. Borland, of the Pennsylvania State College, gave a "right to the point" talk on silos and silage.

That the business men of Grove City are keenly interested in the development of purebred live stock in the community was evidenced by the fact that Mr. E. B. Harshaw, cashier of the Grove City National Bank, stated that he was ready at any time to meet the breeders more than half way, not only in lending them money with which to improve their herds, but in assisting in any other manner at his command. The bank paper published monthly by his bank has done much during the year to stimulate interest in Guernseys by publishing a column in each issue on "Notes on Guernseys". One of this bank's special contributions to Guernsey advancement around Grove City was the bringing in of 12 calves for the Boys' and Girls' Club.

Officers elected for the ensuing year were Geo. Dickey, president; F. A. Waldron, vice-president; Hugh Fergus, secretary and treasurer; J. A. Knauff, H. R. Reed, directors.

LEAD POISONING FROM SILAGE

"I painted the inside of my silo last August according to specifications laid down by an extensive paint manufacturer. Three of my cows have died and seven more are sick. Local veterinarians diagnose the case as lead poisoning. Have you any data giving account of cattle being poisoned by eating ensilage out of a silo painted with lead paint?"—Reader, Berks Co., Pa.

I have never heard of a case of lead poisoning from feeding silage that was stored in a silo with the walls treated with a paint containing white lead but there are good reasons to believe that such could easily happen. Reports of cattle being poisoned by licking lead paint from fences and farm buildings are not uncommon. The smell, or some other quality, about fresh paint appears to attract the cattle, and they like to lick it. Hence it is evident that any silage with lead paint on it would be readily eaten by dairy cows.

If your correspondent treated the inside walls of his silo last August with a paint containing white lead, this paint might not have dried thoroly before the silo was filled. In such an instance, it is possible that considerable quantities of the silage along the wall might get the paint on it as settling took place. On account of the great weight, there is a heavy pressure along the silo walls and a large amount of friction as the silage settles down.

If the paint had thoroly hardened and dried out before the silo was filled, there is still another possibility of contaminated silage. As fermentation takes place in the silage, large amounts of acids are always formed, the principal ones being acetic and lactic. In experimental work at the Pennsylvania Experiment Station, the writer found that acetic acid developed to a greater extent along the walls than at any other place in the silo. Since basic lead carbonate, the form known as "white lead", has the property of being dissolved by acids, it is highly probable that the acetic acids of the silage juice would bring considerable quantities of the lead in the painted silo walls into solution, and so contaminate the silage along the walls. Considering this fact, it is evident that the cows could easily get enough of the lead to cause poisoning.

One should never take the risk of using a paint containing white lead for treating the inside walls of a stave silo. The usual recommendation is that a good grade of linseed oil should be painted on the walls every two years, or more often if deemed necessary, in order that the wood may be protected from the effect of the silage acids and the life of the silo prolonged.—S. I. Bechdel, Asst. Professor of Dairy Husbandry, Pennsylvania State College.

SWEET CLOVER PASTURE

Sweet clover makes an excellent pasture for milk cows. Tests carried on by the Kansas Experiment Station show the high feeding value of clover. There are several varieties of sweet clover but the most profitable variety and the one used in this experiment is the white sweet clover. It is possible to obtain a continuous pasture with sweet clover by allowing it to seed itself each year or by seeding it each winter or spring.

The experiment state test started May 7. Six Holstein cows were turned onto a sweet clover pasture of 3.8 acres. The pasture used was the second year's growth, this field having been seeded the year previous with oats and the clover harvested for hay. The plants made an early start and had a good growth when the cattle were turned in. The entire number were kept on this field continuously for 40 days, and on account of the dry season checking the growth of the clover three cows were removed at this time. As the pasture improved later, one cow was returned on August 5, and after that time four cows were pastured continuously until October 1. The cows were kept on the sweet clover pasture day and night. The only food received by the cows outside the pasture was a grain ration composed of corn chop, bran, and oil meal, fed in the proportion of one pound of grain to each four pounds of milk produced per day.

During the period the cows were on the pasture, the total amount of milk produced was 19,393.5 pounds, containing 680.58 pounds of butterfat. The cows consumed 4,602.8 pounds of grain. Figuring the milk produced worth 20 cents a gallon and the grain fed $50 a ton, one acre of pasture produced $88.46 worth of milk. On the butterfat basis, with butterfat at 40 cents per pound, one acre produced $40.85 of fat, exclusive of the skim milk.

The total number of days of pasture obtained by all cows in the lot amounted to 618 days, an average of 154.5 days for four cows. At this rate the pasture of 3.8 acres kept four cows for approximately five months or, in other words, one acre of sweet clover pasture kept one cow for five months.

The Charles William Stores New York City

THERE are three reasons why "Your Bargain Book" is a real friend to you. You can buy cheaper from it than from almost any other place. You have the widest possible choice of goods—180,000 separate items. Every single thing you buy is absolutely guaranteed to give you complete satisfaction or your money will be returned.

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Heavy Copper Kettles $10.70 Up

727A4200 Copper kettles with iron rod bail and ears. Will not discolor jelly or fruits.

Cap.	Shpg. wt.	Price
12 gal.	21 lbs.	$10.70
16 gal.	24 lbs.	12.24
20 gal.	27 lbs.	13.75
25 gal.	50 lbs.	15.30

$1.09 Up

Nickel Plated Hammer

Adz eye, octagon neck, round poll, bell face. Forged crucible steel, tempered. Mahoganized hickory handle.
1A9200 No. 1. Shipping wt., 2 lbs. Price, each $1.27
1A9201 No. 1½. Shipping wt., 1¾ lbs. Price, each $1.18
1A9202 No. 2. Shipping weight, 13 ounces. Price, each $1.09

Galvanized Drinking Fountain

19A990 Made of heavy galvanized steel with lock seam. Chicks cannot foul the water. Easily cleaned. Feeds automatically; will not overflow.

Size	Shpg. wt.	Price
2 quarts	2 lbs.	56c
4 quarts	2¼ lbs.	78c
8 quarts	3½ lbs.	85c
12 quarts	4½ lbs.	95c

This Is the Book That Saves You Money!

The latest edition of "Your Bargain Book" is now in your hands. A careful perusal of its many bargains will soon show you a way to save some money. The items shown on this page are merely a few taken at random, but they typify the character of the merchandise and the low prices.

If "Your Bargain Book" has not reached you, it is on the way. However, if it does not arrive in a few days let us know and we will send another copy. Then open it the moment it arrives.

ELGIN
ELGIN CLOTHES WRINGER
WARRANTED FOR FIVE YEARS

$6.53 Elgin Wringer

727A2351 Rolls are 11x1¾ in. and are warranted for five years. Has spiral pressure springs, enclosed gear, steel ball bearings and reversible drip board. Wrings from either side. Shpg. wt., 28 lbs. Price, each.............. $6.53

Wear-proof Shoes $3.59

7A2923 Tan.
7A2924 Black.
No half sizes. Sizes: 6 to 12. Wide Widths. Price, pair, delivered free $3.59
Army cap toe last, long wear leather outsoles, clinch nailed and sewed fastened. Half bellows dirt-excluding tongue and long wear heels. The uppers are made of soft serviceable leather.

Plant Setter $4.85

719A659 Sets plants, waters and covers at one time. Jaws heavy sheet steel; body and water reservoir of heavy tinned plate. Shpg. wt., about [illegible] lbs. $4.85

19A1116 For marking poultry by punching a hole through the web between the toes. Nickel plated. Shpg. wt., 4 oz. Each... 17c

$2.59 Wooden Wheelbarrow

71A3488 Made of seasoned, selected hardwood. It is full size and guaranteed to be strong and durable. Has 16-inch steel wheel. It is well bolted and strongly braced. Shipping weight, 42 pounds. Price, each....................... $2.59

Buy Your Agricultural Implements Now!

Don't waste man power by using old and inefficient farm implements. Don't put off any longer getting the plows, harrows, cultivators, etc. Before you choose what you need, look in "Your Bargain Book." On pages 908 to 929 you will find just what you are looking for. And the prices are the lowest.

About Carpets and Draperies

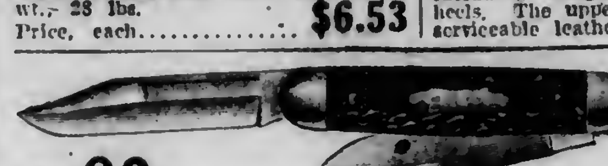
"Your Bargain Book" will help you a lot in picking carpets or draperies. There are 18 pages of colored illustrations showing exactly how the carpets, rugs or linoleums will look. Complete instructions showing just how to order carpets are given on page 741. Free samples will be sent of all kinds of carpets, linoleum, oilcloth or congoleum.

House, Barn, Porch, Floor Paint

Going to freshen up the house this Spring with a coat of paint? Before you start painting take advantage of our free information service. Send in the dimensions and our expert will tell you how much paint will be needed. And, no matter where you intend to buy your paint, be sure to ask for your copy of our free paint catalog.

Hardware of Every Kind

The Spring is a great time to do odd jobs around the house. Get that saw, chisel, plane or screwdriver that you have always needed to do a really good job. They are all in "Your Bargain Book" and at surprisingly low prices. See the pages beginning at 820 and also on pages 839 to 876.



Only 89c Beautiful Stag Handle Knife

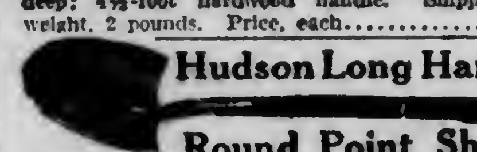
1A4433 A knife for business. Has two large blades, one a saber clip, other spear pattern. Separate spring for each blade. Hand cut stag handle, 4¼ in. long; length, with large blade open, 7⅝ in. Brass lining; German silver bolster and shield. Warranted. Shipping weight, 6 ounces. Price, each..................... 89c

75c Old Reliable Corn Planter

719A627 Segmental slide is made of pressed steel, adjustable to vary the drop. Jaws pressed steel securely riveted to hardwood sides. Shpg. wt., about 6 lbs. Price, each... 75c

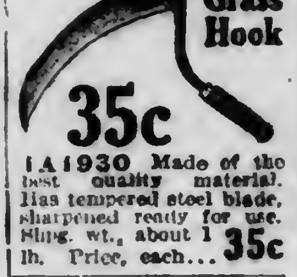
47c Diamond Shaped Hoe

71A1888 Warren Pattern Diamond Shape Hoe. An excellent hoe for light work. Has polished steel blade 5 inches wide, 7 inches deep; 4½-foot hardwood handle. Shipping weight, 2 pounds. Price, each................ 47c



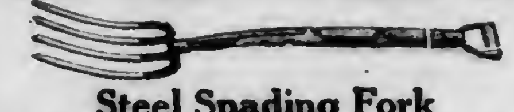
Hudson Long Handle Round Point Shovel

$1.40 71A1802 Made of the best crucible steel, socket shank, full polished. Extra quality handle. Size 9x12 in. Fully warranted. Shpg. wt., 5¼ lbs. Price, each.................. $1.40



Grass Hook 35c

1A1930 Made of the best quality material. Has tempered steel blade, sharpened ready for use. Shpg. wt., about 1 lb. Price, each... 35c



Steel Spading Fork

71A1830 Hudson extra quality Solid Steel Spading Fork. Four tempered and polished steel tines, diamond back selected handle, malleable "D" head, strapped ferrule. Shipping wt., about 5 lbs. Price, each........... $1.22

Bedroom Suite Complete $22.65

Pieces Also Sold Separately

Shipped promptly from stock at New York City or factory in North Carolina.

95A0975 DRESSER $11.95
Top, 36x19 in. Mirror, 24x14 in. Shipping weight, about 130 pounds.

95A0974 BED $5.45
Height, 48 inches. Width, 4½ feet. Shipping weight, about 105 pounds.

95A987 WASHSTAND $5.95
Top, 28x17 in. Double door cupboard. Shipping weight, 70 pounds.

Solid oak; high gloss golden oak finish. Pattern tops. All pieces castered. French plate plain mirror. Bed fitted with slats. Roomy drawer space.

96c Kitchen Chair

75A666 Shipped promptly from stock at New York City. Seat, 15½ inches wide. Full bow back. Hardwood with high gloss golden oak finish. Built to withstand more than the average hard usage. Shpg. wt., 9 lbs. each.

$20.85 Reversible Hillside Plow

Bottom Turns Freely and Locks Automatically

719A109 Standard 14-inch plow but by means of a lever will cut a furrow 8 inches wide. While it is primarily intended for hillside plowing, it will turn a furrow equal to any flat land plow. No other plow has such a wide field of usefulness. Clevis is controlled by a long lever and enables the operator to adjust the width of the furrow 8 inches wide without stopping team. Beam is extra strong and is rolled from a steel bar to a shape especially adapted to take care of a severe strain. The standard and subshoe is made of heavy malleable iron and is almost unbreakable. Shipping weight, 130 pounds. Price, each...................... $20.85

Seven Spring Tooth Cultivator

Can be set "A" shape or "V" shape instantly

$5.95 Great Bargain

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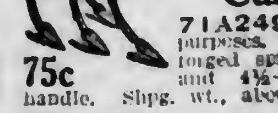

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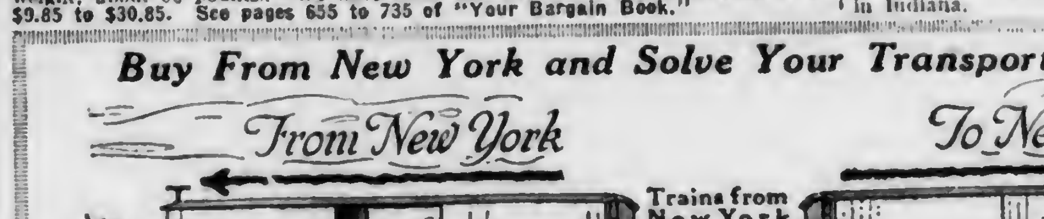

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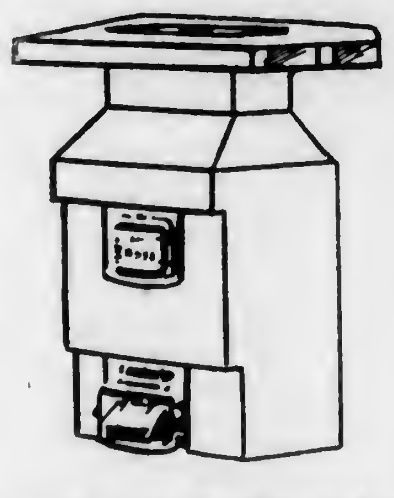

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Poultry

DUCK RAISING PROFITABLE

According to certain reports quite a few who formerly engaged rather extensively in the "green duck" business, having become frightened by the alarming and rapid increase in the price of feed, have sold rather closely. In fact, certain ones have even sold their whole breeding flocks. To my mind this is a rather foolish proceeding and not at all patriotic. With the government urging the production of all the meat possible it behooves everyone "to do their bit" and this would be the chance for stay-at-homes to prove their patriotism. Besides there will, in all probability, be just as big a demand as ever, in fact the probabilities are that the demand will be higher, and naturally prices will be higher—for hatching eggs. Therefore it would also be profitable as well as patriotic to plan to raise more ducks and keep a large breeding flock.

Personally, I am practicing just what I preach. My breeding flock numbers eighteen and I think this is rather a good sized breeding flock for a small poultry enterprise.

The Breeding Flock Enjoying an Icy Bath

As "green ducks" at ten weeks of age were easily raised last year (1917) and prices were high I intend raising more than I ever did even tho it did cost more to raise them and even if feed does stay high. For one thing I intend to cut down the cost of raising them. I intend to raise lettuce for them. That cuts down the feed bills considerably. Then allowing them as free a range as possible is another way to combat high feed bills. Besides, prices are high for the ducks and will probably be higher, therefore there's a profit in raising them.

The principal enemy of a duckling is the deadly head lice. The best way to combat them is never to give them a chance at all, and as the eggs will be hatched in an incubator the head lice will get no chance as they always come from the body of the hen that hatches the eggs. That is one way that will help lower the mortality.

The next deadly foe to the young duckling is rheumatism. When raised with hens many ducklings die with rheumatism if there is a protracted rainy spell. Nothing one can do will help them. The only remedy is sunshine and its warmth. So far I have never used a brooder to raise them, but I intend to try it this summer. I have an idea that if the sunshine's warmth will help them then the artificial warmth and heat will do the same.

A mash of two parts cornmeal to one of bran has always given me the best results. This is thoroly mixed and then enough water is added to make a crumbly mash. Beef scrap is added as they grow older and are confined.

Plenty of water for drinking is provided but no swimming is allowed. Allowing ducklings access to swimming is usually fatal as is exposure to storms. After they feather they are allowed access to the pond. In fact, the pond helps the sale of the ducklings as at marketing age—ten weeks—they are snow white and clean looking; and look "good enough to eat" which helps the sale as they are sold alive.

Plenty of lettuce should be fed as this green feed provides quick and cheap growth and provides the necessary green feed. But care must be taken in beginning to feed lettuce. If provided from the first there is no danger attached to the most generous feeding of lettuce. But when lettuce has never been provided, feed very carefully. Increase the quantity very gradually until they are getting all they will eat. The reason for this is that for some reason—we ascribe it to the laudanum in the lettuce—a big supply of lettuce given to ducklings when they are unused to it, will almost invariably result in the death of all or almost all of them.

I have hatched duck eggs both under hens and in an incubator, and while I must admit the hen brings out a larger percent of ducklings, I believe I prefer to raise the incubator ducklings because of their freedom from lice. A hen will bring out from ten to thirteen ducklings—a surprisingly large number of them bringing the thirteen—from thirteen eggs. The same fertile eggs in an incubator will bring less ducklings but they are easier raised than the hen-hatched.

So, in spite of the high price of feed, I intend to work my incubator and keep it very busy this spring. I often sell day-old-ducklings and find them very profitable and would sooner sell them at that age than raise them for "green ducks" altho that branch is profitable.

I began with common ducks and sold the duck eggs for 50 cents a setting of 13. The ten-weeks-old ducklings weighed 8 lbs. to a pair and at 20 cents a lb. brought $1.60 and with feed where it was then raising them was profitable at that price.

With one drake to every five ducks the eggs are always most highly fertile and customers often jubilantly report, "What do you know about that? I got thirteen ducklings from that setting of eggs!" And they not only come back repeatedly in a season, and every season, but also send all their friends here. One customer got a duckling from almost every egg, buying 5 settings and raising to maturity 60 ducks. Naturally that customer is a steady customer. Part of this fertility I attribute to the small pond on the place where the breeders spend most of their time even in the winter and where they bathe as long they can break thru the ice.

With such high fertility and such a splendid local demand when feed raised several years ago the price went to 75 cents and the demand seemed to increase. Meantime I had gotten dissatisfied with the weight and invested in heavier drakes, so the eggs were really worth the increase in price. Finally I bought purebred white Pekin drakes and have never regretted the investment as ten-week-old ducklings weigh eleven lbs. to the pair on the average.

Last summer instead of getting from $2 to $2.50 a pair I got from $3 to $3.90 a pair as they sold for thirty cents a pound instead of twenty cents as formerly, and the demand is never filled. In a few hours it is easily possible to sell a hundred ducks if one has them either in the open market or on the streets. Besides, regular telephone customers buy a large amount, especially Jewish and Polish people. The prices are live weight prices.

So, with present demand and prices, is it surprising that even with high-priced feed that I have planned to raise more ducks than ever? I intend to make the "green duck" profit bring me enough money to take me on a long-talked-of trip.

My advice to farm women is to go into this branch of the poultry business if there is a local demand, or, if they are within profitable shipping distance of the big eastern cities, as both demand and prices are high and I have always found it profitable and expect that this summer history will repeat itself.—Miss M. A. Harold, Luzerne Co., Pa.

Large sunflowers can be planted with profit on poultry ranges lacking shade. They grow rapidly and furnish first-class feed for the poultry in the early fall when such a feed in the ration assists in promoting rapid growth. Young stock ranging near a large patch of sunflowers have a good opportunity to escape from hawks whenever they sail over the range.

—

Feeding the chicks too soon is responsible for many deaths. Watch an old hen hover her chicks constantly for two or three days after they are hatched. She will seldom make any effort to search for food but simply keep the chicks warm and dry. When the chicks are about forty-eight to sixty hours old they are ready for water, grit and a little rolled oats. The rolled oats can be fed every two hours in small quantities so that the chicks will clean them all up and none will be left to be contaminated with dirt. We do some experimenting on different broods every year but so far we have found nothing as safe for feeding young chicks the first few days as dry rolled oats.

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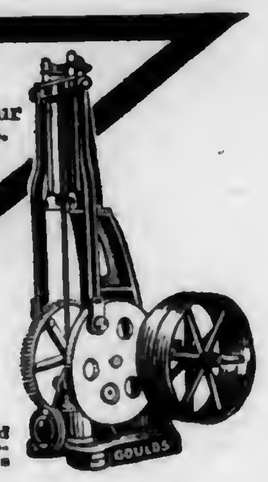

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Farm Products Prices and Prospects

WEEKLY MARKET REVIEW OF FRUITS AND VEGETABLES

Potato Markets Show Recovery

The general market trend shows improvement. While prices reached new low figures during the week at some shipping points, there was usually recovery before the close, and some markets advanced sharply. Round whites at Presque Isle, Me., after dropping to 91c per 100 lbs., bulk, trackside, recovered to last week's prevailing range, $1.06@1.21 per 100 lbs., closing at top. Rochester, N. Y., held nominally at last week's closing figure, $1, but the tone was very strong. Grand Rapids, Mich., ranged slightly stronger at 75@90c. White stock sold to jobbers in New York at $1.80@2.10, bulk, compared with $1.85 last week and with $2.96 October 20, five months ago, when price was $1 higher and shipments were at the season's height with movement of 5,800 cars per week.

Apple Market Slightly Weaker

The tone of the market was rather weak. Northwestern box apples from cold storage continued firm at $1.85@1.90 for extra fancy large Winesaps f.o.b. shipping stations. Demand in large centers was generally slow. Extra fancy large Romes sold at $2@2.50, and Winesaps $2.25@2.75. Nearly all of the barrel stock seemed to have been moved out of the producing sections and no large f.o.b. sales were reported. New York Baldwins, A, sold generally at $4.75@5.25, and Michigan A ranged $5.50@6 in Chicago. New York Greenings, A, reached $7 in Chicago, but ranged generally $5.25@5.50. New York Roxbury Russetts, firsts, ruled $5@5.50.

Cabbage Slightly Lower

Cabbage markets continued weak but without the heavy losses ruling lately. Florida cabbage, pointed type, ranged 50@60c for 1½ bushel hamper, f.o.b Palmetto, with slow weak market; 100-lb. crates ranged 90c to $1.10. Old cabbage sold slowly in most f.o.b. markets, ruling $20 per ton in bulk, carloads, f.o.b. Rochester, N. Y., growers receiving $15 for good stock. Much remaining stock is low grade. In distributing markets New York Danish seed ranged generally $23@30 per ton.

Onion Market Steady

Quotations at shipping stations tended lower, ruling $1.10@1.25 in 100-lb. sacks in the Massachusetts Onion District, and $1.25 f.o.b. Rochester, N. Y., or $1@1.10 at New York country loading stations. Onion movement is still heaviest from New York, 59 cars and Ohio 56 cars, but Massachusetts moved 37 cars, and total was 230 cars, compared with 201 last week, 207 the week before and 213 the week next preceding.

Beans Inclined Lower

The bean markets are now less dominated by recent Government purchases and show a weaker trend. Michigan choice hand picked Navys sold 40c lower, at $13 per 100 lbs. sacked f.o.b. Grand Rapids and Detroit.

AMOUNT OF GRAIN ON FARMS

The Crop Reporting Board of the Bureau of Crop Estimates makes the following estimates from reports of its correspondents and agents:

The amount of corn on farms March 1, 1918, was about 1,292,905,000 bushels or 40.9 percent of the 1917 crop, against 782,303,000 bushels or 30.5 percent of the 1916 crop on farms March 1, 1917, and 1,116,559,000 bushels or 37.3 percent of the 1915 crop on farms March 1, 1916. The proportion of the 1917 crop which is merchantable is about 60.3 percent (equivalent to 1,905,723,000 bushels), against 83.9 percent (2,154,487,000 bushels) of the 1916 crop and 71.1 percent (2,127,965,000 bushels) of the 1915 crop.

The amount of wheat on farms March 1, 1918, was about 111,272,000 bushels or 17.1 percent of the 1917 crop, against 100,650,000 bushels or 15.8 percent of the 1916 crop on farms March 1, 1917, and 244,448,000 bushels or 23.8 percent of the 1915 crop on farms March 1, 1916.

The amount of oats on farms March 1, 1918, was about 595,195,000 bushels or 37.5 percent of the 1917 crop, against 394,211,000 bushels or 31.5 percent of the 1916 crop on farms March 1, 1917, and 598,148,000 bushels or 38.6 percent of the 1915 crop on farms March 1, 1916.

The amount of barley on farms March 1, 1918, was about 43,404,000 bushels or 20.8 percent of the 1917 crop, against 33,244,000 bushels or 18.2 percent of the 1916 crop on farms March 1, 1917, and 58,301,000 bushels or 25.5 percent of the 1915 crop on farms March 1, 1916.

POTATOES IN GROWERS' HANDS

Over ten million bushels, one-third of the Pennsylvania potato crop of 1917, remained in the growers' hands on March 1, according to estimates announced by the Pennsylvania Department of Agriculture.

The census taken in every county of the state showed that 33 percent of the crop had not been marketed on March 1. This condition was brought about by the extremely cold winter, impassable roads and the hope of many growers for higher spring prices. Many times during the fall Secretary of Agriculture, Charles E. Patton, and the Bureau of Markets urged the growers to market a major portion of their crop as the record crop and shipments from the west were gradually reducing market prices.

It was impossible for many growers to move potatoes during the winter, except to local markets and this condition prevented a large percentage from being disposed of.

Several counties show fifty percent of the crop in storage by growers while the lowest figures show twenty-two percent in a few counties. The reports show that Lehigh County growers had on March 1, 449,502 bushels or 27 percent of the crop while Lancaster County growers had 429,462 bushels or 25 percent of the crop. Schuylkill County had 35 percent or 429,172 bushels and York County 28 percent or 403,432 bushels.

PROFITS IN POTATOES

A great deal has been said during the past six months about the increased cost of growing a bushel of potatoes under present war conditions. I am inclined to think that this has been so exaggerated that it will prevent a normal planting for the coming year. In fact, a great many men have said to me that it does not pay them to grow potatoes because, with a great deal less effort, they can make the money to buy the necessary potatoes for their families, and reports are constantly reaching us that the farmers during the coming year will reduce their potato area because of the comparatively low price being paid now for their last year's crop. They have the firm belief that with the high cost of labor, fertilizer, etc., the coming crop will not pay.

There are two phases to this situation beyond the mere facts that appear on the surface that need very careful consideration.

The first is that it is entirely possible that this country will reach the stage within the next year or eighteen months when our food supplies will be so nearly exhausted that money will not buy potatoes or possibly other food as well, and therefor, people living in villages with a small garden acreage should look well to their own supply of potatoes regardless of their money value.

The question of the farmer growing potatoes for profit brings out an entirely new problem. Potatoes are not selling as high as was anticipated and in some cases they are undoubtedly selling below the cost of production.

With several other men interested in the growing of potatoes, I went pretty thoroly thru the potato belts in this and New York state during the digging season last year and each day we took the record from at least ten farmers as to the cost of growing those potatoes. All cost including interest on investments and depreciation of machinery was taken into consideration and the cost price on the average farm ran from $100 to $125 per acre which, with the yield last year, brought the cost per bushel at $1.00 to $1.50. This did not leave even a sufficient profit at the prices paid for the stock.

There was, however, a profit for the potato farmer who was thoroly efficient in his work and produced a large yield of potatoes to the acre.—F. R. Stevens.

A SUCCESSFUL SMALL CITY MARKET

A profitable feature of the recent Cortland County (N. Y.) Pomona meeting was a practical talk by the Mayor of the city, Guy C. Hoagland, on the expense of building the city's neat, new public market, its operation during the last half the past season, and the future he hoped to see for it. This city has the neatest, cleanest, most sanitary market of any city in the state; built last year by the city at an approximate cost of $1,200. It is a cement building about 22x80 feet in size, with cement floors, open front and wide cement yard in front extending to the street. It can be easily enclosed and heated from the city engine house which adjoins it and has a corner planned to accommodate a refrigerator when such shall be needed. Advisers all said Cortland, with its 12,000 inhabitants, was too small a city to need or support a market. But the mayor thought differently, and after a careful study of other public markets of the state and nation decided to put in one on his own initiative, charging no fees to the farmers who should make use of it. He converted his aldermen to his way of thinking that such fees would, in the long run, come out of the city's own pockets in the form of higher prices, and he set a high value on a right feeling between farmers and city buyers that has made the plan a great success.

There was no market master during the season, except as the mayor and chief of police out of sheer interest in proceedings sometimes served voluntarily as directors of operations. The result was a success from the start, tho Cortland has never had many market gardeners, and farmers have never catered to retail trade, and neither were prepared for a market at planting time for a public market trade. They came and brought what they had, however, and both city buyers and farmers were well satisfied. Some new lines of trade were developed in the two or three months the market operated, like that of selling live poultry direct to consumers—an entirely new practice for Cortland buyers. A good trade in bouquets and flowers was also developed. Pears and plums had always gone to waste in Cortland County orchards, yet this year they found a ready sale. Extra vegetables and fruit from the farm gardens came to the city fresh and crisp and found ready buyers. One market gardener sold between $2,600 and $2,700 worth of produce in the 18 or 20 weeks trade and others did nearly as well.

The mayor hopes to see this maret an all-kyear-round proposition He hopes Cortland farmers will grow produce in sufficient quantities that the city grocers will come here to buy at wholesale instead of making long trips to neighboring cities as of old. He wants farmers to make a community affair of their planting and not all grow one thing, as might happen with no plan in their planting.

The prices charged on the market have been a little under retail grocers' prices, so as to give those a chance who are willing to carry their purchases home, tho some city buyers are so pleased with the extra freshness of the farmers' goods they are willing to pay grocers' prices and deliver, too.

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When you come to town to buy the used automobile that you need on the farm, clip out this advertisement and bring it along with you.

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We propose to reserve this department for the use of our readers to discuss all problems and matters of general interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. It will be necessary to limit such articles to 200 or 300 words. Publication of an article in this department does not signify editorial endorsement.

THE AVERAGE FARMER

The many articles appearing in different papers concerning the up-to-date methods of farming and the large percentage of profit per dollar invested have all been very interesting reading to the wealthy farmer or to the city man who contemplates using his spare cash to experiment on a farm. They are interesting reading to the city people who are continually harping on the excessive profits made by the farmer and are urging Congress to enact laws, curbing the sales of farm produce, lowering the cost to the consumer, etc. But there are many points overlooked by the learned gentlemen in painting this picture of life on the farm.

In the first place, the majority of all of the farm products sold are produced by the average farmers, the farmers whose names never appear in the agricultural papers. The average farmer was raised on the farm and when reaching his majority purchased a farm, paying part down and the balance in form of a mortgage. He started to work 12, 14 and 16 hours a day, rain or snow, plodding, planning, endeavoring to pay off that mortgage before the time to start his first-born in high school. He has had little chance to accumulate wealth. His city brother takes care of that. He is minus in the state legislature. Representatives of other business know that so long as they can work the present tax on the farmers they will not disturb big business.

Again, big corporations manufacture all tools and machinery used on the farm, they control all feed and flour mills, lime and cement factories; in fact, everything used in the raising of farm products. They buy the raw material, convert it into goods, raising or lowering the price as permitted by the law of supply and demand. A margin of profit is theirs regardless of the lean years, which are the drawback to the average farmer, years when he strains his credit, works harder without profit, has less pleasure and must be satisfied with visions of what he will do next year.

It is not my purpose to discredit the patriotic utterances of the press, especially when urging the average farmer to renewed efforts along the line of greater production. Neither do I make a plea for charity for the average farmer. There is no person more patriotic, self-sacrificing or hard working than the average farmer. He is aware that the world war depends largely upon his efforts. He is willing to work early and late to do his bit towards universal peace. But in order to do so he must be given an equal chance. He should have a margin of profit, lean years as well as fat. To continue the extremely high prices of materials used on the farm is to defeat the objects that so many millions are being spent to attain. Give the average farmer just taxation, equal representation and materials at reasonable prices, and it will not be necessary to appoint committees and spend millions to induce full efforts. He will soon show a production that will supply the world and lower the cost to the consumer.—F. E. Bidlack, Bradford Co., Pa.

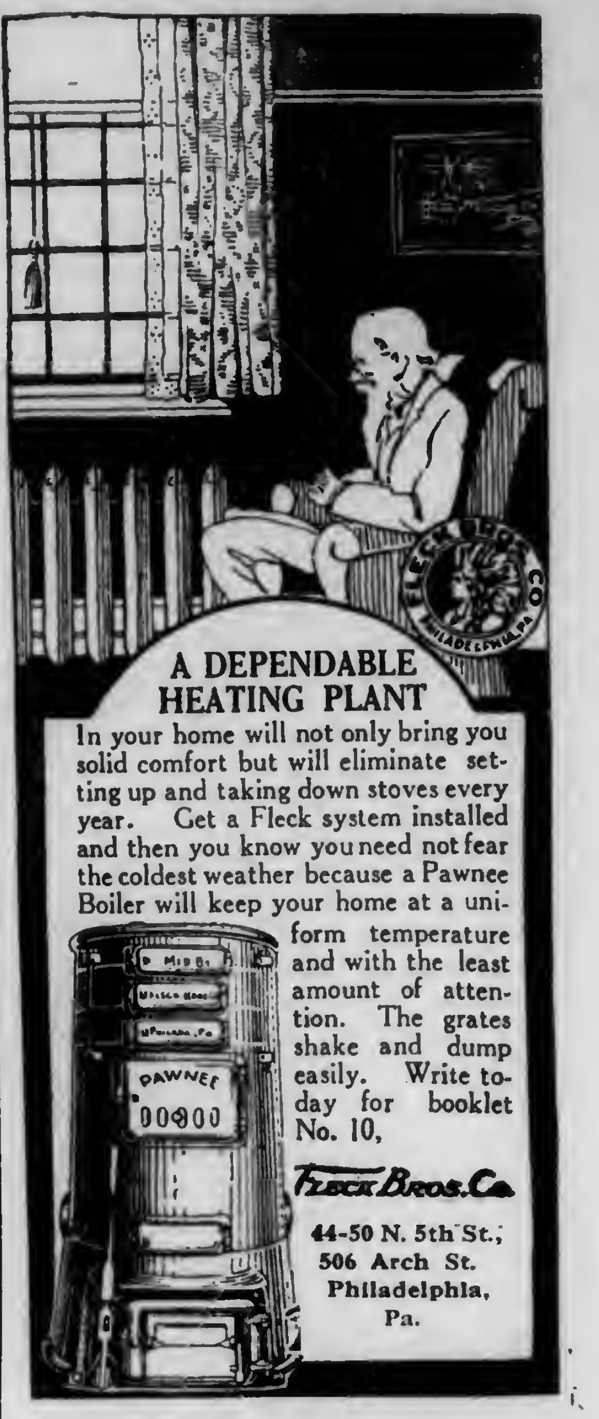
JUST WHAT DOES PATRIOTISM MEAN?

A. R. S., of Tompkins Co. (N. Y.) hits the nail on the head all right when he says "we must organize solidly, protest vigorously, and get our rights;" but he never could say so slightly, "Never mind the dollars", if he had produced fruit, vegetables, eggs, etc., at an actual loss for several seasons, worked early and late, and been unable all winter to join the Red Cross because of the scarcity of cash. I feel very much as my small daughter often says when we're trying to put her off without paying due attention to her demands — "I guess not, 'never mind'". As to the dollars, I wouldn't care particularly for a million of them, but I would like one that didn't absolutely have to go for taxes or shoes or bread.

Why should patriotism, for me, mean producing foodstuffs at a price appreciably below the cost of production, working like a Trojan to make both ends meet, and existing on only the barest necessities of life; while patriotism, for the Hog Island millionaire ship-builders and ten thousand more of their kind, means saving millions for themselves and that, in some cases, out of a dollar-a-year government job? Why should America have 17,000 millionaires in 1916 as compared with 7,000 in 1914, anyway?

I say, too, that every picture like that on page 211 of the Pennsylvania Farmer, showing a man sitting comfortably beside the evaporator while the maple syrup runs into the strainer over the receiving can, is misleading and has an influence making it harder for every farmer to eke out an existence and easier for every millionaire to gain more millions. We admit that it could be done long enough for a snap shot, but the men in our family have worked over a modern evaporator and they know that it means hustling business every minute. You don't sit at your ease while the syrup makes itself.

There is little danger that any farmer will "quit farming because he can't become a millionaire"—few farmers have any such unholy ambition, and I doubt if any of them would care to be in the class with those 10,000 patriots (?) who have become millionaires during the war. But many farmers may quit because they are forced out of the business. When a man sees his children suffering for necessities he is quite likely to look about him for a business that will provide them. So long as we farm we expect to produce all we can of course, we couldn't possibly pay expenses otherwise, but we do want a square deal. We don't want war profits but we can't live on patriotism alone.—E. M. A., New York.



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The Home Sewing—VII

By M. JANE NEWCOMB,
Home Economy Department, Pennsylvania State College

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(No. 1 of this series explained measure taking; No. 2, how to adjust patterns; No. 3, use of adjusted patterns; No. 4, underwear finishing; No. 5, adjusting bias facings and ruffles; No. 6, bands and buttonholes.)

Making a Skirt

With the skirt pattern carefully fitted, hung and marked, no fitting should be necessary until it is ready for turning the hem. Materials stretch on the bias, so in most cases there will be little change in the line at the bottom. The following directions cover the principal steps in the making of a simple skirt.

Reading the Pattern

A pattern has certain marks always used in one form or another (circles, squares, crosses, etc.).

A long line of perforations thru a section of a pattern indicates the line which is to follow the warp of the cloth.

A group of perforations near the edge of a section of the pattern indicates that the edge is to be placed on a lengthwise fold of the material.

Notches on the edges of the sections of a pattern show which edges are to be placed together.

Other markings vary with the pattern.

Cutting the Skirt

A skirt pattern usually gives one-half of the front and sections for but one side. This means that the straight edge of the front must be laid on a fold, and that two of each of the side pieces must be cut.

If there is no up and down or nap to consider in the material, fold it end to end, and when you place the pattern, put the lower edge of the first section on the cut end of the cloth. This makes the strip left at the side more usable in cutting the next section. Following the perforations, place the pattern in the most advantageous position on the material and pin carefully, remembering that the front edge of the front section must be laid on a straight fold of the material.

If there is up and down or nap, the side sections of the skirt must be cut separately. Be sure that the first side section is cut with the figure in the material right side up, or that the nap runs down. To cut the second section of the same shape, place the right side of the first section against the right side of the material with figure or nap going the same way as the first section.

Cut the edges straight, allowing a one-inch seam at the side, and three-eighths inch at the top, if no seams are allowed on the pattern. Mark the seam line with tailor's chalk, basting or tracing wheel. Do not use a lead pencil because it is sure to leave a soiled spot.

If the hips are different, as is frequently the case, both sides of the fitted pattern must be used in the marking. Mark the notches with tailor's chalk, basting or tracing wheel. Do not cut them.

Basting the Skirt

Place the proper edges together as shown by the notches. A bias edge is usually placed against a straight edge in a gored skirt. Pin the seams, making both upper and lower edges meet, and "easing in" the bias if necessary (See Fig. 1). Baste, holding the bias edge toward you. Some skirt seams are finished on the inside (a plain seam, welt seam and a slot seam are of this kind). These seams are basted on the wrong side of the skirt. For a flat tailor's seam or a French seam the first basting is done on the right side.

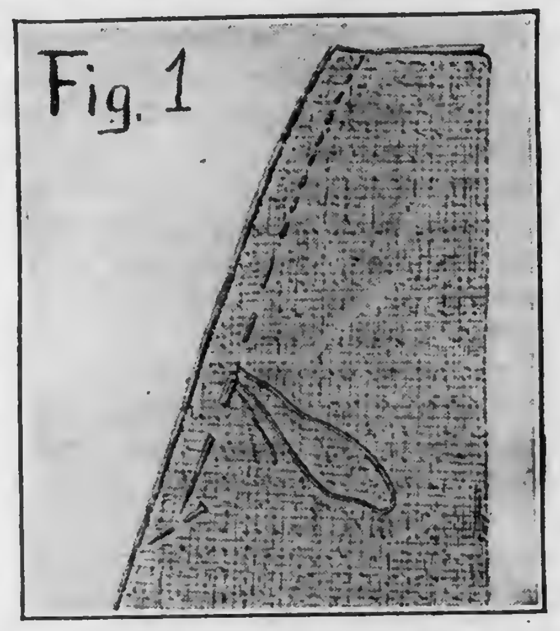
Fig. 1

Plackets

Plackets vary with the style of the skirt. The front and side closing skirts requires styles different from those required by a back closing.

Placket Facing for Front Closing Under a Plait. — Baste a tape or straight strip of material in the fold of the plait where the placket opening is to be. Make this strip as wide as the material which is folded back to form the plait. When basting the skirt for stitching, baste the plait in place for the entire length of the seam, marking the lower end of the placket opening (12 to 14 inches from waist line).

Begin at this mark and, using a gauge, stitch to the bottom of the skirt. Open the placket and, on the right side, stitch in line with the plait stitched below, joining the stitchings carefully where they come together. If the plait has a raw edge, bind the entire length, including the edge of the plait on the right-hand side of the placket opening.

On the left-hand side of the opening, face back with a straight facing slightly narrower than the plait, that the stitches may be entirely covered by the plait on the right side of the skirt.

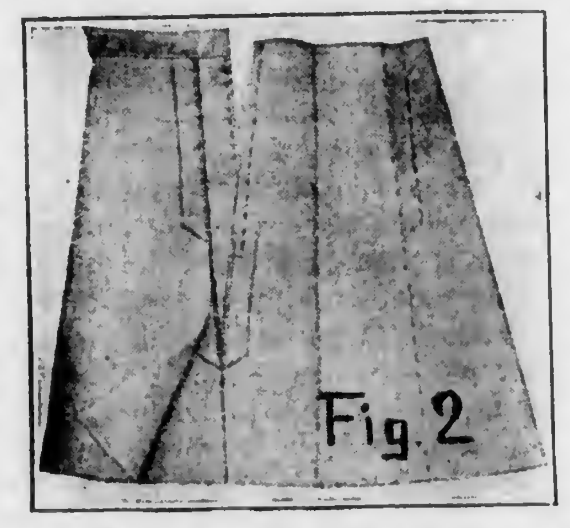
Fig. 2

Placket Facing for Back Closing in the Seam.—Cut two straight strips of material, each ½ inch longer than the opening, the first 1½ inches wide and the second 2½ inches wide. The narrower strip is for the facing on the right side of the placket, and the wider for the underlap on the left side.

The seam of the skirt where the opening is to be made should be pressed open to define the sewing line. Place the narrow strip on the right side of the opening with right sides of material together, baste just inside the sewing line of the material as creased, and stitch. Turn this strip to the wrong side of the skirt to form a one-inch facing, and hem so that the stitches do not come thru the right side of the skirt.

On the left side of the opening, place the right side of the 2½-inch strip against the right side of the skirt, baste and stitch just inside the sewing line of the seam.

Turn this strip back to the line of stitching just made, baste and hem. This forms a one-inch underlap to meet the one-inch facing when the placket is closed (See Fig 2). The lower end of the facing and the lower end of the underlap should be stitched together and the seams bound.

Hanging the Skirt

Make the belt, and sew on the hooks and eyes. Adjust the belt in position around the waist to accommodate the position of the placket. Pin the skirt to the belt very carefully, placing the hip seams a little back of the hip bone. The upper edge of the skirt should be 1½ to 2 inches larger than the band, and should be "eased in" in the pinning and basting. This avoids a drawn look above the hip line and the spreading of the placket.

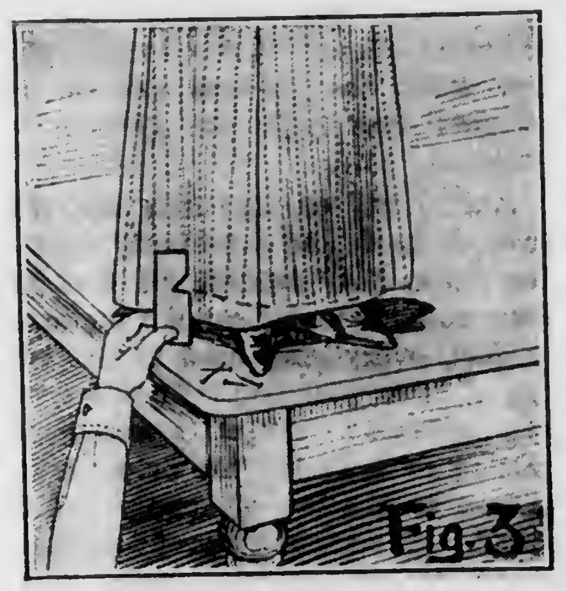
Fig. 3

Stitch the waist band in place, put on the fasteners, and finish the seams before measuring for the hem. If the skirt is to be joined to a waist, this should be also done before measuring for the hem. The skirt hem should be 3 or 4 inches wide.

There are many ways of measuring a skirt for turning the hem. A card notched at the right height may be used. This card can be moved around the skirt, and the skirt marked with tailor's chalk at the notch, thus getting the lower edge of the hem (See Fig. 3).

Another method is by use of the yard stick. Place the yard stick on the floor and mark where the upper end strikes the skirt. Go carefully around the skirt in this way, and the line thus marked will be parallel with the floor. Now spread your skirt out on a table, and from this marked line measure a yard minus the distance you wish your skirt to be from the floor. This gives the lower edge of the skirt. Turn to the wrong side the part left for the hem, and baste on the fold.

To baste the skirt hem, measure from the fold a distance ¼ inch less than the desired width of the hem. Run a gathering thread around the skirt ¼ inch from the raw edge and adjust to fit the skirt (See Fig. 4). Stretch one edge of a bias strip of lawn binding and baste to the upper edge of the hem so that the stretched edge follows gathering thread (Fig. 5). Stitch this edge to the hem, not thru to the skirt. After this bias strip is stitched to the hem, baste its upper edge carefully to the skirt and stitch or hand-hem in place. Hand-hemming makes a neater appearance, but the stitches must be tiny and not show thru to the right side much. This method of finishing the hem can be used on all of the heavier materials, either cotton, linen or wool, and makes laundering and pressing easier.

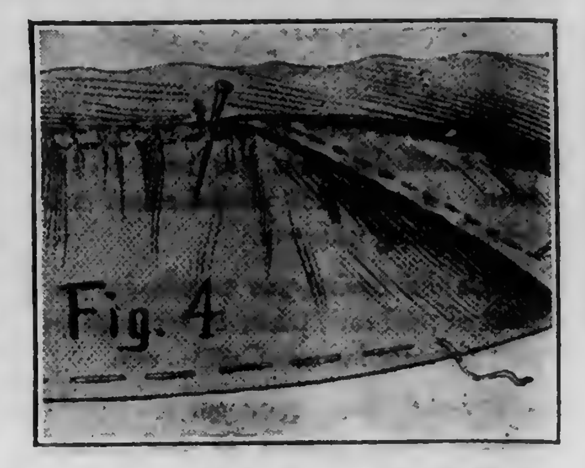
Fig. 4

Skirts that are very circular should be faced instead of hemmed. If the facing is cut bias, it can be stretched at the lower edge and made to fit without gathering.

Finishing the Seams

All seams should be finished. Overcasting raw edges is not satisfactory. They should be bound if not tailored. For a cotton skirt, bias lawn binding ½-inch wide is best and most convenient. Baste this carefully over the raw edges of the seams, and stitch with a long stitch and easy tension. In all seams with a plait or stitched edge on the right side, both raw edges are turned in the same direction, and should be bound together.

On very thin material the two raw edges are turned in toward each other and a fine overcasting done over the two folded edges. Tailored seams are flat seams which are basted and stitched on the right side, one of the edges of material in the seam trimmed shorter than the other, the longer side turned and basted like a fell seam, and stitched on the edge.

Fastenings

Hooks and eyes or snap fasteners may be used for a cotton skirt, but buttons and buttonholes are always best if suitable to the style of skirt.

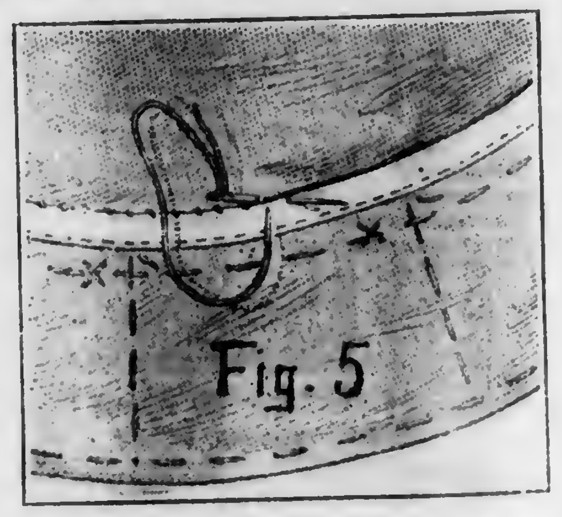
Fig. 5

(Illustrations by courtesy of Butterick Company.)

Cabbage Purse. — Chop a white head of cabbage, add 1 minced onion, 1 celery stalk chopped fine and a little parsley. Cook until very soft, drain in a colander and pound to a pulp. Put over fire with 2 tablespoons butter, and cook 10 minutes. add 1 quart of soup stock and a sea- thru a fine sieve and serve.

Let Potatoes Save Wheat

There is a large supply on hand that must be used or go to waste. Now is the time to use them while the ban on meat is lifted for a while. Back up savory stews with ample servings of potatoes and cut down on bread.

Potatoes are an acceptable substitute for bread. A pound of baked potatoes is equal in nutritive value to seven ounces of bread. (Editor's Note.—Potato bread is probably familiar to most of our older housekeepers; they know that it is a very good bread, white and flaky. It was the bread which we first learned to make.)

In the present food crisis all cereals are precious; they will keep and the potatoes won't. As an emergency measure increase the use of potatoes. If you eat two baked potatoes you will not eat much bread, and so we shall easily cut down the use of wheat flour in the "less bread" program that must be rigorously followed from now until harvest. These recipes will interest you.

Potato Bread

Soften 1 cake dry yeast in 1 cup lukewarm water (you can use 1 cup liquid yeast or 1 cake compressed yeast instead of the dry yeast if you prefer, but since most of us in the country use the dry yeast, we indicate this as well). Then add 3 tablespoons syrup (maple or corn), 3½ cups mashed potato and enough flour to make a medium batter. Let this sponge rise until quite foamy—better start the sponge soon after dinner, then it will come up so that you can mix it into a stiff loaf before you go to bed. When you get ready to mix it into the stiff loaf, add 4 teaspoons salt; it is better to add the salt after the sponge is well risen because salt tends to retard action of yeast. Mix in enough flour to make a loaf that will not stick to your fingers as you knead it, and incorporate the flour gradually as you knead, because this works it in better and makes a better texture. Leave to rise over night in the bread pan, well covered in a moderately warm place. In the morning mix into loaves, let double in bulk, then bake about 1 hour. It should be cautioned that the potato must be thoroly mashed in order not to have lumps to bother in the kneading or to spoil the texture of the finished loaves.—H. M.

Potato Pancakes

Ingredients.—1 cup riced potatoes, ½ teaspoon salt, ½ cup milk, 1 egg beaten, 1 tablespoon flour.

Mix the above ingredients in the order given, beat thoroly and bake on hot greased griddle.

Potato Muffins

Ingredients.—4 tablespoons fat, 2 tablespoons sugar, 1 egg, 1 cup mashed potatoes, 2 cups flour, 3 teaspoons baking powder, ½ teaspoon salt, 1 cup milk.

Cream the fat and sugar; add the egg well beaten, then the potatoes and mix thoroly; sift flour, baking powder and salt; add milk and flour alternately; bake in greased muffin tins 25 to 30 minutes.

Potato Biscuits

Ingredients.—1 cup hot mashed potatoes, 1 cup flour, 4 teaspoons baking powder, 1 teaspoon salt, 2 tablespoons fat, ½ cup water or milk (about).

Sift together flour, baking powder and salt; work in the fat with fork or knife; add potatoes and mix thoroly; then add enough liquid to make a soft dough; roll the dough lightly to about ½ inch in thickness; cut in biscuits and bake 12 to 15 minutes in hot oven. The excellence of potato biscuits depends very greatly upon the softness of the dough, light handling, and quick baking.

Potato Souffle

Ingredients.—4 cups hot mashed potatoes, 1 tablespoon melted fat, 2 tablespoons milk, 1 teaspoon salt, ½ teaspoon pepper, yolks of 2 eggs, white of 2 eggs beaten stiff.

Mix all but the whites of the eggs in the order given; beat thoroly, fold in the stiffly beaten whites; pile in a baking dish and cook until the mixture puffs and is brown on the top.

Surprise Balls

Form mashed potatoes into balls and with a teaspoon make a depression in the top of each; mix 1 cup of grated cheese with salt, celery salt, and butter and put 1 teaspoon in the hollow of each potato ball; mold the ball so the stuffing is concealed and brown in the oven or frying pan.

Colcannon

Mix 1 cup of mashed potatoes and 1 cup of chopped greens to a smooth paste; add 1 tablespoon of fat, salt and paprika to taste; place in baking pan, cover with mashed potatoes, brown in the oven and serve very hot.

White Potato Custards

Ingredients.—2 cups riced baked potatoes, 4 eggs beaten slightly, 1 cup sugar, ⅓ cup fat, ¼ cup thin cream or top milk, juice and rind of one lemon.

Mix in the order given; beat hard for 5 minutes; pour into baking dish. Bake in hot oven 20 or 30 minutes or until custard is set.

Potatoes in Cake

In the usual cake recipe, substitute 1 cup of mashed potatoes for 1 cup of milk and ½ cup of flour; mash the potatoes and beat up with milk until very light. Potato cake does not dry out so quickly as all-flour cake.—U. S. Food Administration.

HONEYCOMB STEAM PUDDING

"Will some of the sisters kindly give me a recipe for honeycomb steamer pudding, made of suet, molasses, soda, flour? If no one has this recipe give me one that is very light when steamed."—L. T., Edgemont, Pa.

We do not seem to have any recipe for "honeycomb pudding", but here is a good steamed pudding: Mix 1 cup chopped suet with 4 cups war flour, add 1 cup sweet milk, 1 cup molasses and ⅛ teaspoon soda, and lastly 1 cup raisins. Pour into cups and steam 3 hours.

Maple Sugar Sauce for Pudding.—The following is a good sauce to serve with the above pudding: Boil ½ cup maple syrup until it threads, then add the juice of 1 lemon. Beat the whites of 2 eggs to a stiff foam, fold them and the syrup together the same as in making a boiled frosting, and when they are well mixed ½ cup thin cream.

If any of our readers can give us a good "honeycomb" pudding recipe, we shall be glad to pay them for it.—The Editor.

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Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

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To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5th. Wages to competent help, $50 a month and up, board and lodging.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Mar. 25, 1918.

The condition of the potato market is peculiar. Altho supplies are rather light, the demand and movement are slow and draggy. With prices at primary points firm and higher, receivers here have been trying to advance prices accordingly, but buyers were not willing to accept the advance and as a result trading has been very limited. At this writing Pennsylvania and New York State potatoes are selling generally from $1.65 to $1.85 per cwt., with now and then some extra fancy Pennsylvania drawing $2, but only in a small way. New Jersey potatoes are in fair supply and moving steadily at 60 to 70 cents per ⅝-bushel basket. The few Eastern Shore barrels that are arriving are selling from $1.75 to $2.25 for primes, with seconds at $1.25.

Sweet potatoes continue in liberal supply, and the market shows a further decline. New Jerseys are now selling from 85 cents to selling from $1.75 to $2.25 for primes, with No. 2's at 50 to 60 cents. Delawares and Marylands in bushel hampers are selling mostly at $1.25 to $1.35, with now and then a few extra fancy at $1.50. No. 2's are selling mostly at 75 cents.

Vegetables

There is no change to be noted in the dried bean market. Marrows are selling from $15 to $15.25; pea and medium, from $13.50 to 14; and red kidneys, $13.75 to $14. Asparagus has been in very light supply and instead of the expected lower prices as we predicted last week the market is firm and higher. Collossal is now selling from $6 to $9 per dozen; fancy, $4 to $6; extra, $3 to $4.50; culls from $2 to $3.50. Supplies are coming mostly from Georgia and South Carolina, with a small amount from California. Under light supplies both green and wax beans are firmer. Stictly fancy are selling at $4 per hamper, with poorer grades from $2 to $3.50. New beets are in light supply and firm at $2 to $2.50 per crate. Old beets, on the other hand, are plentiful and as the quality is generally poor are moving very slowly, with best at $1 to $1.25 per barrel, and some poor as low as 50 cents.

Old cabbage is doing a little better, most sales now ranging from $23 to $25 per ton. New cabbage is also higher, selling mostly at $1.25 to $1.50 per hamper, with now and then some extra at $1.60. Carrots are moving slowly at $1 to $1.25 per barrel mostly. Cauliflower is in quite liberal supply and showing quite a range in quality, with best selling at $1.75 per crate and poor from $1 to $1.25. A few Southern cucumbers are making their appearance on the market and selling at $4 to $7 per hamper. Hot house cucumbers are firm at $1.50 to $2 per dozen. Celery is practically unchanged fom last week. Florida stock is selling generally from $1.25 to $1.60 per crate, with some poor as low as 75 cents. Pennsylvania continues about steady at 8 to 12 cents per bunch. Egg plants, while still in light supply, are generally only ordinary in quality and prices are lower, ranging generally fom $2 to $4 per crate. New Jersey and Pennsylvania horse radish is in fair demand at $4 to $7 per barrel. Kale is quite plentiful and selling mostly at $1 to $1.10 per barrel. Lettuce is firm and higher, Florida stock is selling all the way from $2 to $3 per hamper, and California Iceberg from $2.25 to $3.25 per box.

The onion market continues dull, draggy and weak, with best selling at $1 per cwt., and poor from 40 to 75 cents as to condition. Onion sets are in light supply and fancy Pennsylvanias and New Jersey are active at $5.50 to $6 per bushel. Western sets are generally very poor and selling at low prices, mostly $4 to $4.50 per bushel. Parsnips are a trifle firmer at $1.50 to $2 per barrel. Fancy peas are scarce and readily bring $4 per hamper, while poor are moving slowly at $2 to $2.50. Radishes are in light supply and active at $2.25 to $2.50 per hamper, with long reds in barrels are selling at $7 to $7.50. Peppers are more plentiful and lower, best selling at $4 to $4.50, with No. 2's at $2 to $3. Scullions are in good demand at 75 cents to $1 per 100. Shallots are very scarce and selling at $7 to $7.50 per barrel. Spinach is in much more liberal supply and the market is lower; Virginia selling at $1.75 to $2.25 per barrel, with Texas selling at 40 to 50 cents per bushel.

Tomatoes are increasing in supply and the market is gradually easing off. Strictly fancy are bringing good prices but there is a wide range in the quality, consequently a wide range in prices. Fancy 144-size are selling all the way from $3.50 to $4.75 per crate. Choice 180-size are selling all the way from $3 to $4.25, while culls, crooks and gems are selling from $1.85 to $3.25. Hot house tomatoes continue about steady at 35 to 45 cents per pound. Under much more liberal supplies, rutabagas show a decline from last week's prices. Much of the stock was poor and pithy and sales are being made generally from 75 cents to $1 per cwt. Turnip tops from Maryland and Delaware points are coming quite freely and selling all the way from 50 cents to $1.50 per hamper, as to quality. Watercress is a little more plentiful, ranging from 1½ to 2 cents per bunch as to quality.

Fruits

There is no change to be noted in the apple market from last week's report. Offerings while moderate, are about ample for the supplies. Strictly fancy apples comprise a very small percentage of the offerings and this class of fruits is firm at outside quotations. Poor and ordinary apples are quiet and prices on these vary as to quality. Range of values is about as follows: Baldwins, $3 to 5.50; extra fancy, $6; Ben Davis, $2.50 to $4.50; Ganos, $3 to $4.50; Greenings, $3 to $5.50; Hubbardstons, $3 to $4.50; York Imperials, $3 to $5; Winesaps, $3.50 to $6; Russett, $3 to $4.50; Albe Pippins, $3 to $5; unclassified, mixed common varieties, Hogs.—Receipts, 8,800; irregular; heavy, $1.50 to $3.50. Box apples are also in moderate supply and meeting an active demand when fancy, at about the following range of prices: Rome Beauty, $1.75 to $2.50; Spitz, $1.75 to $2.50; Stayman Winesaps, $2 to $2.50; Pearmain, $1.75 to $2.50; Winesaps, $2 to $3; Yellow Newtowns, $1.75 to $2.25; Ben Davis, $1.40 to $1.75. Strawberries continue in light supply and meeting an active demand at high prices when fancy. A few cars of open crates are arriving and up to the present writing are selling from 35 to 40 cents per quart. The refrigerators are showing variable condition and quality; best are selling at 40 to 45 cents, with some in very poor condition from 15 to 25 cents per quart.

Poultry

Live poultry is in very light supply and the market is firm and higher than last week's quotations. Soft meated young roosters are now selling at 38 to 43 cents; staggy young roosters, 32 to 36 cents; old roosters, 30 to 33 cents; ducks, 38 to 42 cents; geese, 38 to 42 cents; guineas, $1.20 to $1.40 pair. Pigeons, 35 to 50 cents pair.

Eggs

The egg market is practically in the same condition as reported in these columns last week. While prices at the present time are somewhat lower, they are still unsettled and fluctuating a little from day to day. The consuming demand continues very strong and with the storage almost at hand it looks as tho the market will rule some where around the prices now prevailing. At this writing current receipts are selling at about 37 cents per dozen, with firsts about 37½ to 38 cents.

PITTSBURGH PRODUCE

Pittsburgh, Pa., Mar. 25, 1918.

Vegetables.—The country produce market has become moderately active because of the more seasonable weather and downward tendency of prices in the case of some fruits and vegetables. White potatoes braced up last week, but did not hold. Cabbages and onions continue weak and slow, and various lines of new green vegetables from the South are declining. Apples and strawberries are in moderate request.

Potatoes, car lots, $1.50@1.60 cwt; sweets, $1.75@2 hamper. Onions, yellow, $1.25@1.50 per 100-lb. bag; do., white, $1.75@2. Cabbage, $20@25 ton. Parsnips, 45@50c bu. Rutabagas, $1.50@2 bbl. Turnips, 50@60c bu. Carrots, 50@60c bu. Lettuce, $1.40@1.65 hamper. Celery, $1.25@2.50. Tomatoes, $3.50@4 crates. Radishes, 20@25c bch. Asparagus, $3@4.50 case. Rhubarb, 65@75c bundle. Beets, 50@60c doz. bchs. Apples, $3.75@6.50 bbl; $1.75@3 box. Strawberries, 25@30c qt.

Poultry.—The poultry market is quiet and, while high prices are asked, it is not difficult to secure them if the goods show quality. The most of the offerings are frozen stocks put in the coolers last year. Offerings of fresh-killed poultry are light and a large percentage lacks quality.

Hens, 34@40c lb; springers, 35@40c; broilers, 42c; roosters, 32c; ducks, 35@37c; turkeys, 38@43c.

Dairy Products.—At Chicago, Saturday the price of creamery butter was reduced two cents a pound and a like reduction was made here, effective this morning. The butter market continues weak and, as the season for increased production is approaching, lower prices are looked for. The egg market is weak and unsettled on heavy receipts. Until speculators begin to place the overplus in cold storage, declines are more likely than advances.

Dairy Products.—Elgin prints, 46@46½c; Elgin tubs, 45@45½c; Ohio and Pennsylvania dairy, 42@43c; Cooking butter, 32@33c. New York cheese, 28@29c; do., Ohio, 26@27c; Selected eggs, 35@36c; eggs at mark, 34@35c.

Hay and Grain.—No. 2 yellow ear corn, $2@2.07 bu; No. 3 yellow shelled, $2@2.02. No. 2 white oats, $1.02½@1.03; No. 3 do., $1.01@1.01½; standard oats, $1.02@1.02½ bu; No. 1 timothy hay, $33@33.50 ton; No. 2 do., $31.50@32. No. 1 clover hay, $32.50@33; No. 2 do., $30.50@31.50. No. 1 mixed hay, $32.50@33 ton. No. 1 light mixed, $31.50@32. Rye straw, $20@20.50. Oat straw, $18.50@19.50. Wheat straw, $18.50@19.

YORK PRODUCE MARKET

York, Pa., Mar. 25, 1918.

There is little change in market conditions over those reported last week. Apples are running lower in quantity, but not rallying in price; in fact, as they get scarcer they are actually easing off a little in price. In speaking with one of he larges home growers yesterday, he said there was nothing doing in the apple market and he would not plant another tree if he were paid for it.

Eggs.—32@34c per dozen.

Butter.—Country, 45@48c per lb; separator, 48@54c. Milk, 10c qt.

Poultry.—Live hens, no sale; dressed, 75c @$1.75 each.

Vegetables.—Potatoes, 10@15c ½ pk; 60c @$1 per bu; much frozen stock; lettuce, 5@10c hd; beets, 5c bch; radishes, 6c bch; onions, 6c bch; 10@12c ½ pk; lima beans, 18c pt; soup beans, 16@18c pt; celery, 5@10c stalk; turnips, 20@25c ½ pk; cornmeal, 10@12c qt.

Country Butchering.—Sausage, 30@34c lb; smoked, 42@46c lb; backbone, 24@28c; spare ribs, 32c; tenderloin, 45c; steak, 34@38c; pudding, 24@28c; cured meat, 40@45c; whole lard, 32c.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, 95c; rye, $1.85; bran, $1.90 cwt; middlings, $2.65 cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.75; oats, 90c; rye, $1.70; bran, $45 per ton; middlings, $52 per ton.

BALTIMORE PRODUCE

Baltimore, Md., Mar. 25, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.50@1.75 cwt; do., New York, $1.50@1.75 cwt; Eastern Shore, $1.25@1.50 cwt. Sweet potatoes, yellow, $4@4.50 bbl; $1.25@1.40 hamper. Cabbage, danish, $20@25 ton. Celery, New York, $1.50@3.50 crate; do., native, 5@6c bunch. Lettuce, 75c@$1.50 basket. Onions, yellow, $1@1.25 per cwt; red, $1@1.25 per cwt. Tomatoes, $4.50@5 crate.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5.50; New York State, $4@6; do., No. 2, $3.50. Strawberries, 15@35c qt.

Butter.—Creamery, western, extras, 47@48c; firsts, 46@47c; pound prints, 49@50c; do., firsts, 49@50c. Nearby creamery, 44@45c; do., firsts, 43@44c. Dairy prints, 35@36c; do., firsts, 34@35c.

Eggs.—State, Pennsylvania and nearby, 34@35c; Eastern Shore and Virginia, 34@35c; Southern, 33@34c.

Live Poultry. — Chickens, 40@45c; do., rough, 35@40c; old roosters, 30@32c; ducks, 30@35c; turkeys, 40@45c.

Hay and Straw.—No. 1 timothy, $33; standard timothy, $32@32.50; No. 2 timothy, $31.50@32; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover, $33@34; No. 2 clover, $31@32. No. 3 do., $28@29. No. 1 straight rye straw, $24@25; No. 1 tangled, $20@21; wheat straw, $18.50@20; oats straw, $17@21.

LANCASTER PRODUCE

Lancaster, Pa., Mar. 25, 1918.

Eggs and potatoes in abundant quantities were offered on the market today, but despite the supply, last week's prices were firmly maintained and sales were limited. Many dozens of eggs were taken home by the dealers, unable to unload them at 37 and 38 cents a dozen. Southern vegetables made their first appearance in quantities.

Butter and Eggs.—Creamery butter, 50c lb; country butter, 50c; fesh eggs, 37@38c.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Fruits.—Spinach, 30c ½ pk; potatoes, 12@20c ½ pk; do., 80c@$1.10 per bu; sweet potatoes, 25c ½ pk; new beans, 60c ½ pk; tomatoes, 20c box; carrots, 10c bunch.

Grain Market.—Wheat, $2.10 bu; chicken wheat, $2.10; corn, $1.78; rye, $2.13. Timothy hay, $26@27 per ton; mixed hay, $25@26; wheat straw, $17@18.

NEW YORK PRODUCE

New York City, Mar. 25, 1918.

Butter is in fair demand with little change in price from last week. Cheese trade slightly more active. Larger receipts have lwered egg prices and the market is irregular. Potato offerings are liberal with trade slow and weak. Apples in heavy supply and moving slowly.

Butter. — Creamery, extras (92 score), per pound, 43c; higher score, 43½@44c; thirds to firsts, 37@43c; state dairy, 35@41c; ladles, 29½@33c.

Cheese. — Colored specials, 25@25½c. Daisies, 26@26½c.

Eggs.—Fresh gathered extras, 39½@40c; extra firsts, 37½@38½c; nearby white, fine to fancy, 47@48c; ordinary to good, 45@47c; browns, 41@42c.

Vegetables and Greens. — Beets, per bbl. $1@2.50. Onions, per 100-lb bag, 50c@$1.50. Potatoes, Jersey, $1.66@2 per 100 lbs.; state and western, $1.80@2.12 per 100 lbs. Carrots, 50c@$1.25 per barrel

Apples.—Winesap, $4@6; York Imperial, $3.50@5.50; King, $4@6; Baldwin, $3.50@5.50; Greening, $4@6; Northern Spy, $4@7.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Mar. 25, 1918.

Beef Cattle.—Demand was fairly active and prices of steers and calves were slightly advanced, offerings being light. Transportation conditions were showing improvement.

Steers, choice, $12.50@14; extra, higher; fair to good, $11@12.50; bulls, $8@10.50; extra, higher; cows, fat, per lb., choice, 8½@10c; fair to good, per lb., 7@8½c; bologna cattle, choice, 5½@7c; common, 4@5c; calves, extra choice, $18.50@19; fair to good, $17@18; common, $14@16; Tennessee and southern, $9@16.

Sheep and Lambs.—The market for sheep ruled firm, with demand absorbing tho limited offerings. Lambs sold fairly and values were well sustained.

Sheep.—Wethers, extra, $14@14.50; good to choice, $11@12.50; medium, $9@10.50; common, $7@8.50; ewes, heavy, fat, $12@13. Lambs.—Choice, $17.75@18.25; do., medium, $16.50@17; inferior, $14.50@16.

Hogs.—The market ruled firm under light offerings and a fairly active demand. Quotations for best western, $20@20.50.

City-Dressed Stock.—There was a fairly active trade in steers, heifers and cows and the market ruled firm and higher, with supplies well under control. Calves were also well cleaned up and a shade firmer. Lambs were slightly higher, but other descriptions were without quotable change.

Steers, 17@22c; heifers, 16@20c; cows 13@19c; calves, 25@27c; southern and barnyards, 18@20c; country dressed, 21@23c; sheep, 23@24c; do., extra, 25c; lambs, 28@30c; hogs, 26c.

NEW YORK LIVE STOCK

New York City, Mar. 25, 1918.

Beeves.—Receipts, 2550; irregular; steers, $10@14.30; bulls, $7.50@10.75; cows, $4.50@10; tops, $10.25.

Calves.—Receipts, 4160; firm; veals, $17@21; culls, $14@16.50.

Sheep and Lambs.—Receipts, 3720; firm; sheep, $9@13; culls, $7@8.50; light prime lambs, $17.50@19.75; culls, $16.

Hogs.—Receipts, 7060; steady at $18.50@18.90; pigs, $18@18.50; roughs, $17.75.

BUFFALO LIVE STOCK

Buffalo, N. Y., Mar. 25, 1918.

Cattle.—Receipts, 2,800; active and strong; prime steers, $13.50@14; shipping steers, $13@13.25; butchers, $10@12.75; yealings, $11.75@13.25; heifers, $9@12; cows, $5@12.25; bulls, $7@11.25; stockers and feeders, $7.50@16.50; fresh cows and springers, $65@135. $18.25@18.50; mixed, $18.75@18.90; Yorkers, $18.90@19; light Yorkers, $18.25@18.50; high, $18@18.50; roughs, $16.50@16.75; stags, $13@14.

Sheep and Lambs. — Receipts 7,000; strong; wool lambs, $13@19.35; clipped lambs, $16.35; others unchanged.

CHICAGO HORSE MARKET

Horses were in moderate supply and demand last week, with army purchases restricted to mules and cavalry horses, these and other horses selling at generally unchanged prices. Inferior to good farm chunks were quotable at $60@150, drafters at $185@265, loggers at $150@225 and feeders at $150@240, with choice animals scarce.

NEW YORK HAY AND GRAIN

New York City, Mar. 25, 1918.

Feed.—The market situation was without material change on Saturday. A slightly easier tone was again noted, but the offerings were not heavy. Apparently the more seasonable weather and the improvement on traffic conditions have brought about this situation. Not much attention was given to the new import embargo restrictions covering oil cake, for this is not brought into this country. In the meawhile the demand is good and offerings coming on the market are readily absorbed in view of the scarcity of feeding grains in general. The opening to pastures soon will do much to relieve the tight situation. Quotations (prompt Western shipment): White corn bran, $56 per ton; rye middlings, $56.50 per ton; oat feed, $33.50 per ton.

Hay and Straw.—All terminals still liberally supplied and the market easy, altho lighter stocks in transit and the accumulation as reported by the railroads headed for this market is being reduced.

Hay.—No. 1 large or small bales, $29@31; No. 2, $26@28; light clover, mixed, $26@28. Rye straw, $21@28 per ton.

Corn.—No. 3 yellow, $1.80.

Oats.—No. 2 white, $1.06½@1.07½.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., Mar. 25, 1918.

Butter.—Demand for solid-packed creamery developed considerable force for Saturday, and prices advanced 1c owing to very light receipts. Prints were also 1c higher, with supplies closely cleaned up.

Western, fresh, solid-packed creamery, extra, 43c; higher-scoring goods, 44@45c; extra firsts, 42c; firsts, 41@41½c; seconds, 39@40c; sweet creamery, extra, 44c; under grades, 40@43c; nearby prints, fancy, 47c; do., average extra, 44@46c; firsts, 42@43c; seconds, 40@41c; special brands jobbing at 48@50c.

Receipts as compiled by the Bureau of Markets, 213 tubs of butter and 4996 cases of eggs.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., Mar. 25, 1918.

Baled Hay and Straw.—Receipts, 96 tons of hay and 8 cars of straw. The hay market was quiet and barely steady. Straw sold slowly at former rates.

Timothy hay, according to location—No. 1 large bales, $30@31; No. 1 small bales, $30@31; No. 2, $29@29.50; No. 3, $26@27; sample, $21@23; no grade, $17@19. Clover hixed hay, light mixed, $28@29; No. 1 do., $24@27.50; No. 2 do., $24.50@25.50.

Straw.—No. 1 straight rye, $21@21.50; No. 2 do., $20@20.50; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1 wheat straw, $19@19.50; No. 2 do., $18@18.50; No. 1 oat straw, $19@19.50; No. 2 do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $1.95@1.96.

Oats.—No. 2 white, $1.06@1.06½.

NEW YORK MILK MARKET

New York City, Mar. 25, 1918.

The surplus continues with demand moderate and receipts increasing. Early last week the condensers, the last of the group of wholesale milk buyers, consented to abide by the decisions of the Federal Milk Commission. The Dairymen's League, the distributors and manufacturers and condensers have now accepted the Federal Milk Commission as the last word in prices in the New York market. All differences of opinion were wiped out. The commission has determined that the April rates for producers of Grade B in the 150-mile zone shall be $2.50 a hundred for 3 percent milk; $2.74, or approximately 5.8 cents a quart for 3.6 per cent; and $2.90 for 4 percent. This a drop to the producers of approximately 1.28 cents a quart, while the retail rate for bottled Grade B delivered was reduced only ½ cent, to 14 cents.

This relatively large reduction to the producer is generally believed to have been due to a desire to save the distributor from losses on surplus. The executive committee of the Dairymen's League, considering that the retailer had not received sufficient consideration, asked for a special meeting of the Milk Commission to consider this phase of the question. The meeting was held on March 23. In the absence of Mr. Jordan, the chairman, no decision was reached. There probably will be another meeting this week. It has been decided that the balance of the recoup for the losses of the producers in December last, should be made up in the months of May, June, July and August, at the rate of 3 cents a month on the hundred.

Receipts of milk and cream in 40-quart cans for the week ending March 23 were as follows:

Railroad	Milk	Cream
Erie	47,361	2,508
Susquehanna	6,708	30
West Shore	10,020	905
Lackawanna	60,140	1,525
N. Y. Central (long haul)	114,722	1,640
Ontario	35,113	2,726
Lehigh Valley	45,443	678
New Haven	5,679	30
Pennsylvania	10,920	190
Other sources	5,990	185
Totals	342,096	10,417
Same week last year	354,595	12,723

GRANGE NOTES FROM NEW YORK STATE

S J. Lowell, Worthy Master of New York State Grange, of Fredonia, N. Y., and his two sons form a noteworthy trio in grange circles. "Like father, like son" is here amply illustrated. S. J. Lowell is a most respected and honored farmer of his state, and the worthy master of the largest state grange in the country. His youngest son, Clyde M., is master of Fredonia Grange No. 1, the largest subordinate grange of the state, with a membership of 758. The other son, Fred A., is master of Chautauqua County Pomona Grange, the largest pomona grange in the state. Is not this a record to be proud of?

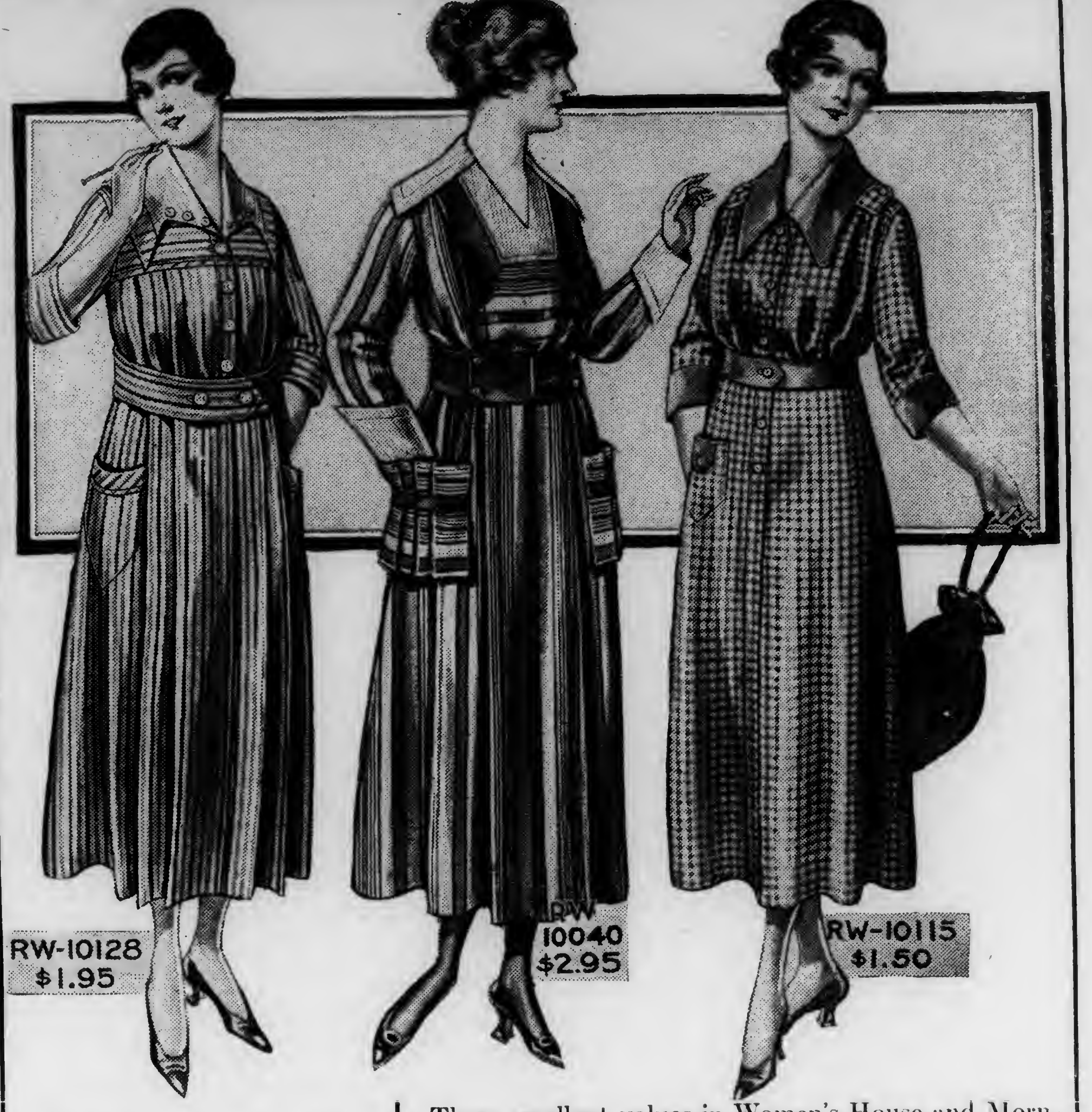
Niagara Falls now stands a good chance of getting the National Grange next fall and if so, one session may be spent in old Fredonia Grange hall, as the guests of the Lowell family. All patrons in nearby counties and states should plan to take advantage of this trip, as Fredonia can give some valuable object lessons to grangers of all degrees.

Webster is Fredonia's worthy competitor in membership, a real live campaign for members now being carried on by each grange—with the goal of 800 members well in sight for each.

Cayuga County Pomona Grange recently held an interesting session. Mrs. Campbell of the home economics department of state grange spoke on the opportunity of the women of the country to help in the work of the farm in its lighter forms, in imitation of their Canadian sisters. Miss Mary Bowen, county conservation agent, urged preparedness on the part of the housekeeper and the need of greater simplicity in the daily menus served. Less variety was recommended.

E. C. Weatherby, manager of the County Farm Bureau, advised the farmers not to criticise the government but to put their own representatives into power. "Farming interests can best be run by farmers—not by politicians, merchants, lawyers, or others who know nothing of the farm. Farmers should take the word order as their guide, first organizing the work of their own farms, using their best efforts to provide food for the nation. The next step is to organize farm interests, and carry out those projects which make for efficiency."

Cortland County Pomona Grange in recent session gave much consideration to the farm labor question. Reports were made of various manufacturing concerns of the county that last spring promised to release labor to help the farmers when needed in crop emergencies, and that later on almost to a man refused to let their workmen go when the farmers called for much needed help—even for very short periods, with the farmers willing to pay the high factory wages. Any sort of help that could be obtained was hired to save crops from frost, sometimes paying $3 a day for help that was physically incapacitated to do a real day's work or even help to lift a crate of potatoes into a wagon. The general belief was that when a similar campaign to enlist help for farm work should be made this spring that all promises of factory owners and even of factory workers to help when needed be put down in black and white, as patriotism and performance seem to be two distinct things.



RW-10128—Women's House Dresses of Striped Gingham, White Ground with Pink, Blue and Brown Combination Stripes. Made in straight plaited style from the deep yoke, a model greatly in demand; gingham belt; jaunty patch pockets, three-quarter length sleeves; broad fancy white collar trimmed with gingham and buttons. Sizes 36 to 46 inches bust measure. Price.......... **$1.95**

RW-10040—Striped Gingham Morning Dresses in pretty color combinations, White Ground with the predominating stripe in Pink or Blue. Unusually effective style—round white pique collar and deep cuff yoke of white pique and plain chambray: chambray belt: decorative patch pockets on the straight plaited skirt. Sizes 36 to 46 inches bust measure. Price **$2.95**

RW-10115—Exceptional at $1.50! House Dresses of Neat Checked Gingham in Blue-and-white, Lavender-and-white or Black-and-white. Collar of chambray in plain color trimmed with tabs of checked gingham and buttons; plain chambray cuffs and belt; patch pocket on the gored skirt. Sizes 36 to 46 inches bust measure. Price **$1.50**

Three excellent values in Women's House and Morning Dresses---just the type of Dress of which every woman must have one or two. Well made, comfortable and good looking enough for trips to town, neighborhood visits, and the like.

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The Striker's Story

By Frank H. Spearman

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I would not call her common. Not that I would be afraid to, tho most of the boys were more or less afraid of Mrs. Mullenix, but simply that it wouldn't be right—not in my opinion.

She kept a short order house, let that be admitted at once, but her husband was long a West End engineer. Denis Mullenix went into the Peace with Hailey and Ed Peeto and Durden the night of the big June water on the West End. The company didn't treat her just right. I was a strong company man, altho I went out with the boys. But I say, and I've always said, the company did not treat Mrs. Mullenix just right.

A widow, and penniless, she bought the eating-house at McCloud with the few hundreds they gave her.

There were five young Mullenixes, and they were, every one, star children, from Sinkers, who was foxy, to Kate, who was not merely fine, she was royal. Twenty, and straight, and true, with a complexion like sunrise and hair like a sunset. Kate kept the cottage going, and Mrs. Mullenix ruled personally in the eating-house and in the short order annex. Any one that has tasted a steak grilled swell in Chicago or in Denver, and tasted one broiled plain by Mrs. Mullenix in McCloud, half a block from the depot, can easily understand why the boys behaved well. As for her coffee, believe it or not, we owe most of our world-famous West End runs, not so much to the Baldwin Locomotive Works, renowned as they are, nor to Mr. George Westinghouse, prince of inventors tho we rank him—but to the coffee drawn by Mrs. Mary Mullenix; honor where honor is due.

Mrs. Mullenix's coffee for many years made the boys hot; what now makes them hot is that she can't be persuaded to draw it for anybody except McTerza, and they claim that's the way he holds the Yellow Mail with the 808; but all the same McTerza is fast stuff, coffee or no coffee.

They were none of them boisterous men, those Reading engineers who took our jobs after the strike; but McTerza was an oyster, except that he couldn't be swallowed.

McTerza didn't give up very much to anybody; not even to his own chums, Foley and Sinclair. The fact is he was diffident, owing, maybe, to a hesitation in his speech. It was funny, the bit of a halt, but not so odd as his disposition, which approached that of a grizzly. He had impudence and indifference and quiet—plenty of each.

There was one place up street that was, in special and particular, headquarters for the bad men in our crowd—for we had some—Gatling's billiard hall. Foley himself never had the nerve to tackle Gatling's. But one night, all alone and come from nobody knew where, the hall stuffed with striking men who had tasted blood that very day—McTerza walked into Gatling's.

It was like a yearling strolling into a canyon full of wolves. They were so surprised at first they couldn't bite, but pretty soon they got McTerza up against a mirror and began pasting pool balls at him.

When Ed Banks arrived it was as bad as a rapid-fire gun, and he carried McTerza out the side door like a warm tapioca pudding. When the fellow got round again, tho, he was just as careless as ever.

It was pretty generally understood that in the strike the short order house was with us. Mrs. Mullenix had reason to feel bitter toward the company, and it became speedily known that Mrs. Mullenix's was not a healthy place for the men who took our engines; their money was not wanted. In fact, none of the new men ever tried to get service there except McTerza. McTerza one morning dropped into the short order house.

"Coffee," said he; he always cut things short because he was afraid he would get hung up between stations in remarks. Mrs. Mullenix, sick, had to manage as she could. Kate was looking after things that day at the restaurant, and she was alone. She looked at McTerza chillingly. Kate had more than enough instinct to tell a Reading man from the Brotherhood type. She turned in silence, and she poured a cup of coffee, but from the night tank; it was the grossest indignity that could be perpetrated on a man in the short order management. She set it with little of civility and less of sugar before McTerza, and pushing her girdle down, coldly walked front, half perched on a stool, and looked listlessly out of the window.

"Cool," ventured McTerza as he stirred a lump of sugar hopefully into his purchase. Kate made no comment on the observation; the thing appeared self-evident.

"Could I have a little c-c-c-condensed milk?" inquired McTerza presently. "This sc-sc-scream looks pretty rich," he added, stirring thoughtfully as he spoke at the pot of mustard, which was the only liquid in sight.

Kate Mullenix glared contemptuously at him, but she passed out a jug of cream—and it was cream. From the defiance on her face as she resumed her attitude she appeared to expect a protest about the cold coffee. None came. McTerza drank the stuff very slowly, blowing it carefully the while as if it was burning him up. It vexed Kate.

"How much?" asked McTerza humbly, as he swallowed the last drop before it froze to the spoon, and fished for a dime to square his account.

"Twenty-five cents." He started slightly but reached again into his pocket and without a word produced a quarter. Kate swept it into the drawer with the royal indifference of a circus faker and resumed her stool.

"C-c-could I get another c-c-cup?" asked McTerza patiently. It looked like a defiance; however, she boldly poured a second cup of the cold coffee; and McTerza tackled it.

After an interval of silence he spoke again. "Do you sell tickets on c-coffee here?" She looked at him with a questioning insolence. "I mean, c-could a fellow buy a chance—or get into a raffle—on the h-h-hot tank?" asked McTerza, throwing a sad glance on the live coffee urn, which steamed cozily beside its silent companion.

"That tank is empty," snapped Kate Mullenix recklessly, for in spite of herself she was getting confused.

"If it is," suggested McTerza, peering gravely underneath at the jet of gas that blazed merrily, "you ought to draw your fire; you're liable to b-b-burn your c-c-crown-sheet."

"What's the matter?" demanded Kate angrily; "is your coffee cold?"

"Oh, no," he responded, shaking his head and waiting for the surprising diclaimer to sink in. "Not exactly cold. It's just dead."

"We don't serve Reading men here," retorted Kate defiantly.

"Oh, yes, you do," responded McTerza, brightening at once. "You serve them like t-t-tramps." Then after a pause: "Could I get a cigar?"

"Yes."

"How much is that kind?"

"Fifty cents," snapped Kate, glancing into the street for some friendly striker to appear.

"I want a good one."

"That's a good one."

"Fifty cents a b-b-box?"

"Fifty cents apiece."

"Give me a small one, please."

He put down a dollar bill as he took the cigar. She threw a half back on the case. At that moment in walked two of our boys, Curtis Rucker and Ben Nicholson. McTerza had a great chance to walk out, but he didn't improve it. Rucker and Ben were Reds, both of them. Ben, in fact, was an old terror at best. Curtis Rucker was a blackish, quick young fellow, fine as silk in a cab, but a devil in a strife, and what was more, a great admirer of Kate Mullenix, and the minx knew it. As McTerza bit off the end of his cigar and reached for the gas-lighter he noticed that her face lighted wonderfully.

With a smile the newcomers called for coffee, and with a smile they got it. McTerza, smoking quietly at the cigar case, watched the steaming liquid pour from the empty tank. It was a dispiriting revelation, but he only puffed leisurely on. When Kate glanced his way, as she presently did, disdainfully, McTerza raised his finger, and pointed to the change she had thrown at him.

"What is it, sir?"

"Mistake."

The strikers pricked up their ears.

"There isn't any mistake, sir. I told you the cigars were fifty cents each," replied Kate Mullenix. Rucker pushed back his coffee, and sliding off his stool walked forward.

"Change isn't right," persisted McTerza, looking at Kate Mullenix.

"Why not?"

"You forgot to take out twenty-five cents more for that last cup of c-c-coffee," stammered the Reading man. Kate took up the coin and handed a quarter back from the register.

"That's right," put in Rucker promptly, "make the scabs p-p-pay for what they g-g-get. They're sp-p-pending our money." The hesitating Reading man appeared for the first time aware of an enemy; interested for the first time in the abuse that had been continually heaped on him since he came to town: it appeared at last to reach him. He returned Rucker's glare.

"You call me a scab, do you?" he said at last and with the stutter all out. "I belong to a labor order that counts thousands to your hundreds. Your scabs came in and took our throttles on the Reading—why shouldn't we pull your latches out here? Your strike is beat, my buck, and Reading men beat it. You had better look for a job on a threshing machine."

Rucker jumped for McTerza, and they mixed like clouds in a cyclone. For a minute it was a whirlwind, and nothing could be made of it; but when they could be seen McTerza had the best man in our camp pinned under a table with his throat in one hand like the latch of a throttle. Nicholson at the same moment raising an oak stool smashed it over McTerza's head. The fellow went flat as a dead man, but he must have pulled up quick, for when Neighbor, rushing in, whirled Nicholson into the street, the Reading man already had his feet, and a corner to work from. Reed, the trainmaster, was right behind the big master mechanic. Rucker was up, but he saw he was outnumbered.

"Hurt, Mac?" asked Reed, running toward the Reading man. The blow had certainly dazed him; his eyes rolled seasick for a minute, then he stared straight ahead.

"Look out," he muttered, pointing over Reed's shoulder at Kate Mullenix, "she's going to faint." The trainmaster turned, but Kate was over before her brother Sinkers could reach her as he ran in. Rucker moved towards the door. As he passed McTerza he sputtered villanously, but Neighbor's huge bulk was between the two men.

"Never mind," retorted McTerza; "next time I get you I'll ram a billiard c-c-cue down your throat."

It was the first intimation our fighting men had that the Reading fellow could do business, and the affair caused McTerza to be inspected with some interest from behind screens and cracker boxes as he sauntered up and down the street. When the boys asked him what he was going to do about his treatment in the short order house he seemed indifferent; but the indifference, as our boys were beginning to find out, covered live coals; for when he was pressed he threw the gauntlet at the whole lodge of us, by saying that before he got thru he would close the short order house up. That threat made him a marked man. The Reading men were heated; McTerza was slated for the very worst of it. Everybody on both sides understood that—except McTerza himself. He never understood anything, for that matter, until it was on him, and he dropped back into his indifference and recklessness almost at once. He even tried the short order house again. That time Mrs. Mullenix herself was in the saddle. There were things in life which even McTerza didn't hanker after tackling more than once, and one was a second interview with Mrs. Mullenix. But the fellow must have made an impression on even the redoubtable Mrs. Mary, for she privately asked Neighbor, as one might of an honorable adversary, for peace' sake to keep that man away from her restaurant: so McTerza was banned. He took his revenge by sauntering in and out of Gatling's, until Gatling himself went gray-headed with the fear that another riot would be brought on his place.

Oddly enough, McTerza had one friend in the Mullenix family. On

the strike question, like many other McCloud families, the house of Mullenix was divided against itself. All held for the engineers except the youngest member, Sinkers. Sinkers was telegraph messenger, and was strictly a company man in spite of everything. He naturally saw a great deal of the new men, but Sinkers never took the slightest interest in McTerza until he handled Rucker; after that Sinkers cultivated him. Sinkers would listen just as long as McTerza would stutter, and they became fast friends long before the yard riots.

The day the carload of detectives was imported the fight was on. Scattering collisions breaking here and there into open fights showed the feeling, but it wasn't until Little Russia went out that things looked rocky for the company property at McCloud. Little Russia had become a pretty big Russia at the time of the strike. The Russians, planted at Benkleton you might say by Shockley, had spread up and down the line like tumbleweeds, and their first cousins, the Polacks, worked the company coal mines.

The night of the trouble took even us by surprise, and the company was wholly unprepared. The engineers in the worst of the heat were accused of the rioting, but we had no more to do with it than homesteaders. Our boys are Americans, and we don't fight with torches and kerosene. We don't have to; they're not our weapons. The company imported the Polacks, let them settle their own accounts with them, said our fellows, and I called it right. Admitting that some of our Reds got out to mix in it, we couldn't in sense be held for that.

It was Neighbor, the craftiest old fox on the staff of the division, who told the depot people in the afternoon that something was coming and thinking back afterward of the bunches of the low-browed fellows dotting the bench and the bottoms in front of their dugouts, lowering at the guards who patrolled the railroad yards, it was strange no one else saw it. They had been out three weeks, and after no end of gabbling turned silent. Men that talk are not so dangerous; its when they quit talking.

Neighbor was a man of a thousand to act on his apprehension. All the afternoon he had the switch engines shunting cars about the roundhouse; the minute arc lights went on the result could be seen. The old man had long lines of furniture vans, box cars, gondolas, and dead Pullmans strung around the big house like parapets. Whatever anybody else thought, Neighbor was ready. Even old John Boxer, his head blacksmith, who operated an amateur battery for salutes and celebrations, had his gun overhauled; the roundhouse was looking for trouble.

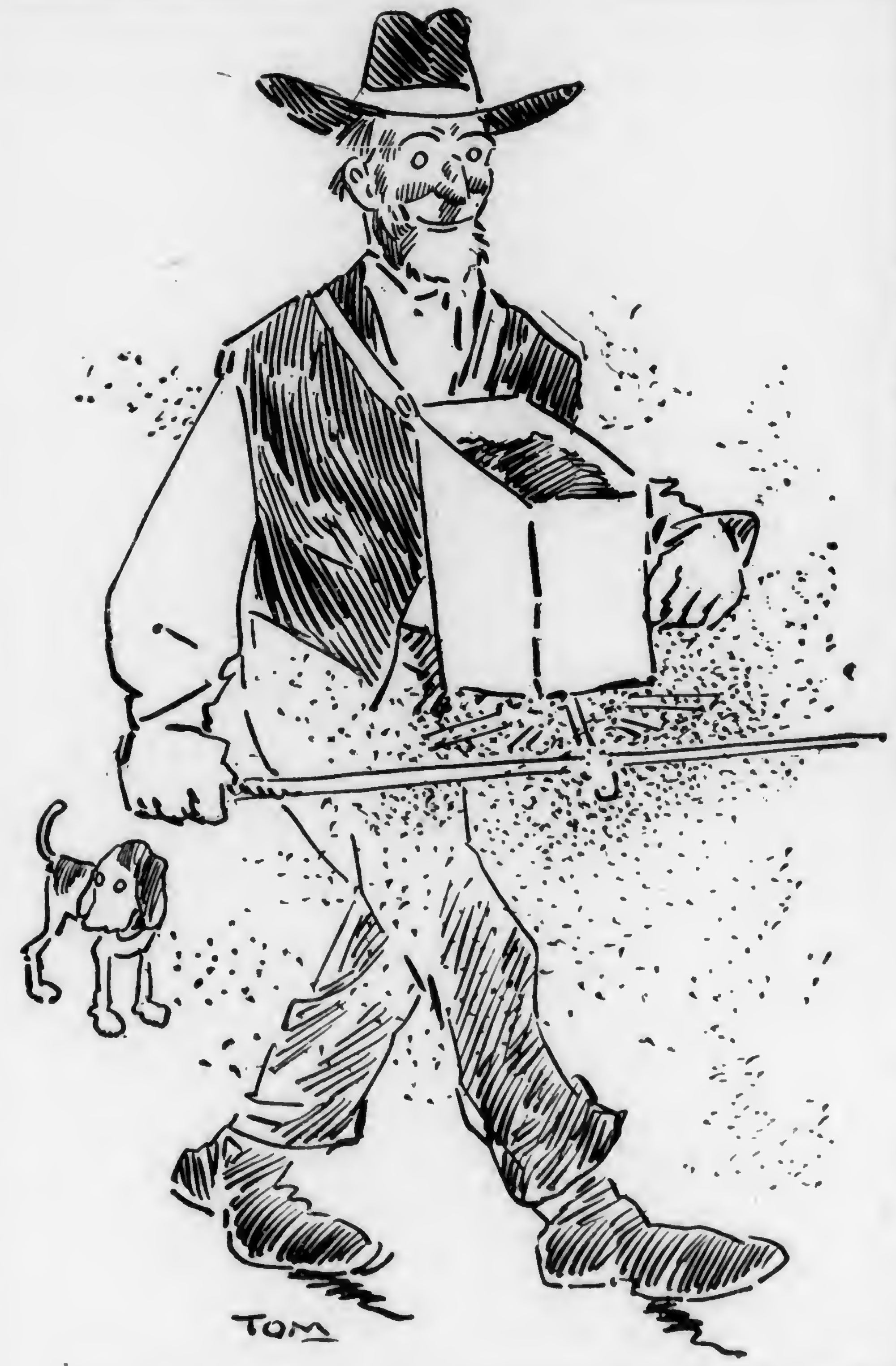
It was barely eight o'clock that night when a group of us on Main Street saw the depot lights go out, and pretty soon telephone messages began coming in to Gatling's from the company plant up the river for the sheriff; the Polacks were wrecking the dynamos. The arc lights covering the yards were on a different circuit, but it didn't take the whiskered fellows long to find that out. Half an hour later the city plant was attacked; no one was looking for trouble there, and the great system of arcs lighting the yard for miles died like fireflies. We knew then, everybody knew, that the Polacks meant business.

Not a man was in sight when the blaze sputtered blue, red, and black out; but in five minutes a dozen torches were moving up on the in-freight house like coyotes. We could hear the crash of the big oak doors clear down on Main Street. There, again, the company was weak; they hadn't a picket out at either of the freight houses. There wasn't so much as a sneeze until they beat the doors in; then there was a cry; the women were taking a hand, and it was a loot with a big L. The plunder maddened them like brandy. Neighbor, who feared not the Polacks nor the devil, made a sortie with a dozen men from his stockade, for that was what the roundhouse defenses looked like, to try to save the building. It wasn't in men to do it. The gutting was done and the kerosene burning yellow before he was half-way across, and the mob, running then in a wavering black line from the flames that licked the high windows, were making for the storehouse. The fellows were certainly up to everything good, for in plundering the freight house first they gave their women the chance to lay in supplies for months. Neighbor saw in a minute there was nothing left for him to protect at the east end, and before he could cut off the constantly lengthening line of rioters, they were between him and the long storehouse. It must have made the old man weep blood, and it was there that the first shooting occurred.

A squad of the detectives, re-enforcing Neighbor's little following, ran in on the flank of the rioters as the master mechanic caught up with their rear. They wheeled, on his command to disperse, and met it with a cloud of stones and coupling pins. The detectives opened with their Winchesters, and a yell went up that took me back to the Haymarket. Their answer was the torch to the storehouse and a charge on the imported guards that shook their front like a whirlwind. The detectives ran for Neighbor's breastworks, with the miners hot behind, and a hail of deadly missiles on their backs. One went down at the turn-table, and it didn't look as if his life was worth a piece of waste. But the fellow, raising on one arm, began picking off the Polacks closest with a revolver. They scattered like turkeys, and he staggered across the table before they could damage him any worse. Half a dozen of us stood in the cupola of the fire-engine house, with the thing laid below like a panorama.

Far as the blazing freight house lit the yards, we could see the rioters swarming in from the bottoms. The railroad officials gathered up stairs in the passenger depot waited helpless for the moment when the fury of the mob should turn on the unprotected building. The entire records of the division, the despatchers' offices, the headquarters of the whole West End were under that roof, with nothing to stand between it and the torches.

(To be continued.)



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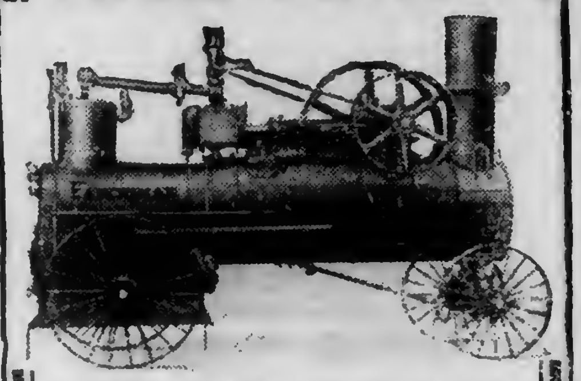

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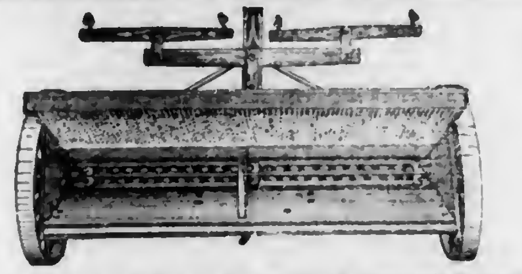

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Forage in Pork Production

Pastures Makes Good Cheap Pork

By W. H. TOMHAVE, PENNA STATE COLLEGE

The general interest in pork production stimulated by the demand from our Allies and the needs for our own army will mean a greater number of swine on many Eastern farms. Simultaneous with this increase in pork production the farmers are confronted with high priced feed and in many instances considerable difficulty in securing it. The scarcity of feed is likely to be more pronounced later in the summer before the new crop becomes available. This condition will be brought about to some extent by the growing scarcity all over the country, and the large amount that will have to be diverted into other channels in order to supply the flour substitutes. The American farmer has never entered upon a spring season with such a world scarcity of grain and at the same time such an urgent demand for greater live stock production, especially pork.

But the farmer is in position to utilize to a large extent forage crops and pastures to carry him thru the difficult season and supply the live stock necessary. It will require some adjustment on many farms, but the task will be accomplished. Cattle and sheep have in the past been pastured and very little grain required during the summer. In the past, nearly all pork production, especially thruout the East, has been on a grain basis. It is not possible to eliminate the grain entirely from the diet of the hog as he is not equipped with the proper machinery to utilize forage crops alone. It is possible, however, to reduce the amount of grain necessary to grow young pigs, and brood sows can be maintained almost entirely on good forage.

Forage Crops

There are a variety of forage crops that give good results with swine. The selection of these depends to some extent upon the location of the farm. It is well to arrange the crops in a rotation so that fresh forage can be provided from time to time. The acreage to set aside for forage depends upon the condition of the land and the number of swine to be pastured. On a farm where six to ten brood sows and their litters are kept, about five acres of good land should be set aside for forage crops.

Good clover or alfalfa pasture always provides a splendid amount of summer forage. It can be pastured quite early in the spring and carry the swine most of the summer. If it is found that the swine cannot consume all the forage, it may be cut for hay in order to have a strong second growth. When this is done the entire pasture field should not be cut at once. A portion of it should be left standing to supply forage while the new growth gets a start. Bluegrass pasture can be used to advantage but does not provide good pasture all summer. It makes excellent early pasture and also good late pasture after fall rains begin.

The common practice in many sections and the one best suited to many farms is the use of annual crops. These should be arranged in a rotation to provide pasture during the entire summer. If a field of rye has been seeded, this will provide early spring pasture before the spring crops are far enough advanced. This crop provides some succulent feed but does not rank very high as a forage crop. As soon as the land can be worked in the spring, a field should be sown to a mixture of 1½ bushels of oats, 1 bushel of Canadian field peas and 4 pounds of dwarf Essex rape per acre. This combination should be followed at the end of three to four weeks with a seeding of 1½ bushels of oats and 5 pounds of rape per acre. Four weeks later seed another plot to rape, allowing 8 to 10 pounds per acre. The forage crops should be from 8 to 10 inches high when the pigs are turned on to the pasture. After the first field has been pastured, it may again be seeded to dwarf Essex rape at the rate of 10 pounds per acre so as to have an abundance of late fall pasture.

Grain Supplements

Brood sows, if they are in fair condition of flesh, can be maintained most of the summer on good forage crops without grain in addition. If they are bred for fall farrowing it may be necessary to supply some grain during the latter part of the gestation period. During the early spring, while they are suckling pigs and if they have large litters, they should have all the grain they will consume as any grain fed will be recovered in growth in the young pigs. Young growing pigs can not be developed on forage crops alone. Any attempt to do so will be a loss of time and money. The small pigs should be fed all the grain they will consume up to the time they weigh about fifty pounds. After that period they should be allowed from two to three pounds of grain per 100 pounds of live weight daily in addition to good pasture. Such method of feeding will result in the most economical gains, altho not as rapid gains as when a full grain ration is fed.

The grain mixture allowed will depend upon the kind of feed that can be secured. A very desirable mixture is one made up of corn meal 4 parts, wheat middlings 3 parts and tankage 1 part. If the tankage can not be secured, 1½ parts of oil meal will make a desirable substitute. This mixture should be fed twice a day at the rate suggested, depending upon the condition of the pasture. If it is inconvenient to feed twice daily it may all be fed at one time.

Forage crops are usually planted in fields where there is no natural shade. This condition makes it necessary to provide shade of some kind.

Plenty of good clean water is as essential as feed and shade. It should be provided in such amounts that the hogs can have access to it at all times. Separate watering troughs are desirable altho not essential. The water can be put in the regular feeding trough after the grain is eaten.

With the prevailing price of grain feed it is not economical to attempt growing swine without forage crops because of the greater amount of feed required to produce daily gains. Nearly all experiments show that a saving of about 100 pounds of grain is usually made for each 100 pounds of pork produced when pasture crops are used. In addition to the saving of grain, greater thrift is found among swine on forage crops as well as less danger of trouble from internal parasites and disease

Hogs Thrive on Tankage

Tankage builds big frames to carry fattening. Experiment station reports show that tankage is the cheapest and the best feed for hogs and growing pigs.

Martin's Abattoir Tankage

is carefully sterilized, especially prepared and ready to feed. It produces money makers for you. Buy direct from manufacturer and save money. Prices on request.

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When in need of any parts for repair, bring or send the broken parts to us, at once, by parcel post or express (we will pay one way) and on receipt of same will quote you price by return mail.

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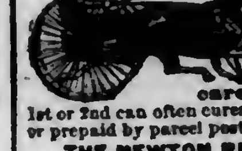
DEATH TO HEAVES! NEWTON'S



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67 Acre Farm $900

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are the largest handlers of commission hay in greater New York; if you have hay to dispose of communicate with them.

HAY

365 Acre Farm in Buckingham Co., Va., 200 acres tillable. Ready to plant apple trees. 80 acre acorn orchard, fenced for hogs, 6,500 (half cash). 200 acres Central New York, $4000; 30 acres Connecticut, $3500; other smaller farms. HARRY VAIL, Owner. WARWICK, N.Y.

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HAY Ship To The Old Reliable House Daniel McCaffrey's Sons 623-625 Wabash Bldg., Pittsburgh, Pa.

Binder Twine Granges, Farmers' Clubs get our price. Farmer agents wanted. Write us. Theo. Burt & Sons, Melrose, Ohio.

Farm Hand Wanted General labor, hogs and cattle. Locust Lawn Farm, Bird-In-Hand, Lancaster Co., Pa.

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Offer For Sale, Sons of SIR INKA PRILLY SEGIS

Who is a son of King Segis out of a 30-lb. granddaughter of the noted foundation cow Prilly. We have 65 of his young daughters born at Winterthur, the first of which will freshen in 1918:

No. 21—Born January 19th, 1918. He is about four-fifths white and a good growthy fellow. His 14 nearest tested dams average 26 lbs. butter in seven days. His dam, Mayflower Topsy Walker 308597, is a 16-lb. two-year-old granddaughter of King of the Pontiacs.

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Full particulars including pedigrees and photographs will be furnished on request to

WINTERTHUR FARMS
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"I have tested 272 cow months. Of this 110 Holsteins, 47 Jerseys, 57 Shorthorns, 35 Herefords, 7 Red Polls, 13 Angus and 3 mixed. Have had 1 Jersey, 1 Red Poll and 2 Herefords exceed 30 lbs. fat in 30 days. 30 Holsteins have made from 30 to 62 lbs. fat each in 30 days."

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Are the Most Profitable Cows

Many purebred Holstein cows yield from 15 to 30 lbs. of fat a week. You can make money with these cows.

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Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.

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of World's Record breeding, born March 22, 1917. Dam an A. R. O. cow.—A beautiful individual, ready for service. Price $150, delivered, express paid your station. Your money back if not perfectly satisfied.

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either sex $15 to $20 each express prepaid in lots of 5. 45 high grade 2 year olds close springers $65 to $80 each. 40 yearlings not bred. 30 registered heifers ready to breed $125 each. 28 registered bulls, registered and high grade cows at Farmers' prices.

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MILL HILL FARM

offers Guernseys; bulls ready for service and calves. Tuberculin tested. Oscar Bollck, McKeansburg, Pa.

Beau Rio seventeen months old, registered Hereford Bull for sale. Weighs 1,290 lbs. Sire, Beau Donald 37th, No. 469301; dam, Lady Geneva 2nd, No. 352467. Champion type. Fed by my twelve-year-old son, Edson. Write ROSS F. STOUT, Clarksburg, W. Va., for price.

Holstein Bull Calf six months old; 24 lb. dam, 31 lb. sire. George M. Carpenter, 41 S. Main St., Wilkes-Barre, Pa.

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees. WALTER M. CRUTTENDEN Wilkes-Barre, Pa.

Reg. & Grade Holsteins 30 head reg. heifers, $250 each; cash or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Cheshires Just a few young boars of excellent type soon ready for service. FRED W. CARD & SON, Sylvania, Pa.

Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M. E. Basehoar, Crystal Spring Stock Farm, Littlestown, Pa.

Milking Shorthorns Bull calves bred from the best milking strains, for sale; also few heifers. C.M. Kennedy & Sons, Ulster, Pa.

Holstein bull calves $25 to $100. Heifer calves from a 30lb. sire $75 to $100. The Oaks Dairy Farm, Wyalusing, Pa.

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd. BONNYMEADS FARMS, R. D. 1, Harrisburg, Pa.

For Sale Fine Reg. Guernsey heifers, Imp. & American bred. Some to freshen Apr. Some fine Imp. granddaughter of Gov. Chene; bull calves. J. S. Yoder, Wooster, O.

Ayrshires young A.R. cows, bull and heifer calves. Best blood lines, reasonable prices. Inspection invited. Robert Templeton & Son, Ulster, Pa

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Weak Horse. — My 16-year-old horse has for a long time been in the habit of not lying down. A few nights ago he went down, and had to be helped up. We now keep him in sling. What can be done for this kind of a case? G. R. R., Mauch Chunk, Pa.—Give him one dram fluid extract nux vomica, one ounce tincture cinchona, ½ ounce Fowler's solution at dose in feed or in drinking water, 3 times a day. This horse should be exercised some every day, his bowels kept open and his back and hind quarters well hand-rubbed twice daily.

Teat Obstruction. — My 10-year-old cow has what is commonly called "Spider" in one of her teats. We have been using tube, but it hurts her. She also has another teat which seems to have small bunch near end. This makes milking difficult. G. P., Flanders, N. J.—Teat ailments of this kind must be treated surgically by a competent veterinarian or they will not get well. Some cases improve after tincture iodine has been applied to teat directly over bunch. Sometimes such obstructions can be removed with a guttered ½ round probe. This probe is inserted into teat canal, then revolved. Lack of absolute cleanliness in such an operation sometimes infects udder, doing more harm than good. Disinfect tools thoroly before treating a cow's teat.

Lice on Cattle.—I wish you would tell me how to kill lice on cattle. J. M., Tunkhannock, Pa. — Dissolve 2 pounds soft soap in 2 pints of boiling water, add 1 pint of kerosene. Churn or stir violently for some time and then add 3 quarts of water. Apply this solution to lousy cattle as often as necessary to kill all their lice. Keep in mind that the stable may be infested with lice, therefore clean the stable and apply same kerosene emulsion. The commercial coal-tar disinfectants regularly advertised in this paper will also kill lice and are not expensive.

Lead Poisoning.—Last August my silo was painted with lead paint on inside, according to directions of paint manufacturer. Lately some of my cows have died, others are sick. Our local veterinarians diagnosed them as cases of lead poisoning. In your experience and veterinary practice have you met with similar cases? H. A. L., Birdsboro, Pa.—I hesitate to believe that your cattle died the result of lead poisoning. Perhaps the food was infected and they died of silage poisoning, not lead poisoning. The writer has never known cattle to die from lead poisoning caused by eating silage put in some time after the silo was painted.

Cow Sucks Herself.—I have a very profitable cow. After having three calves and after our selling the third one, she took to sucking herself. I have tried calf sucking devices without doing any good. Muzzles do not help to prevent this vice. J. A. C., North East, Md.—Unless you can secure some sort of mechanical appliance to keep her head in line with body, she will have to be kept in stable.

Contagious Abortion.—Have three cows that calved three months before calving time. Do I have contagious abortion in my herd? H. L. P., North East, Md.—Yes, your herd is infected. Cleaning and disinfecting your stable, segregating the aborters from balance of herd will assist in its control. Your other cows are perhaps already infected. Burn or bury deeply the dead calf and afterbirth. Sponge off hind parts of cows with one part carbolic acid and forty parts water, twice a day. Feed the cows well and do not breed them for two months.

QUALITY CHICKS

for immediate delivery.

Well hatched chicks—sturdy, pure bred from heavy laying strains of Rocks, Reds and Leghorns, etc. Easy to grow big layers from Hillpot chicks. Prices moderate.

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Eggs White Leghorns Chicks

Do you want the best for your foundation stock, or new blood for your flock? Then order from an Old Established Breeder. We are not a Hatchery.

Single Comb White Leghorns Only

Our prices are as low as can consistently be named under present conditions.

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250,000 for 1918. $10.00 per 100 and up. Pure bred, hatched right. Strong guarantee. 10 leading varieties. Hatching eggs. Western Branch, Augusta, Kansas. Free Catalog. Stamps appreciated.

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DAY-OLD CHICKS

of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.

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Over 100 White Holland Turkeys FOR SALE Hens weighing ten and eighteen lbs., $5 to $10; toms, sixteen to twenty-five lbs., $8 to $15. Satisfaction guaranteed. H. W. ANDERSON, Stewartstown, Pa.

Tiffany's Superior Chicks Silver Laced, White and Columbian Wyandottes, S. C. R. I. Reds. Barron's Leghorns, Pekin, Rouen and Indian Runner Ducklings. ALDHAM POULTRY FARM, R. 39, Phoenixville, Pa.

Eggs--Baby Chicks Single comb white Leghorns, trap-nested stock, heavy laying strain. Cat. on inquiry. Book orders early because big demands and shortage of stock. Riverdale Poultry Farm, F. E. McAllister, Prop., Cortland, N. Y.

S. C. White Leghorns Tom Barron Strain of heavy layers. Send for catalog giving prices and description of choice breeding stock, baby chicks and eggs. Ivywood Poultry Farm. Box 71A, Avondale, Chester Co., Pa.

Turkey Eggs strictly fresh from large selected M. Bronze, B. Red, W. Holland and Narragansett. 9 for $3.25; 15 for $5.25 by mail or Express prepaid. Safe arrival guaranteed. Orders booked now. N. M. Caldwell, Jacobsburg, Ohio.

S. C. R. I. Reds Eggs $8 per 100; $1.50—15. Healthy vigorous utility hens—no pullets. E. R. JOHNSON, Center Bridge, Pa.

Look—Chicks $9 per 100 and up, for April delivery. 200,000 for 1918—8 best varieties. Our ninth year. Order early. Catalog free. KEYSTONE HATCHERY, Dept. 19, Richfield, Pa.

60 Breeds chickens, ducks, geese, turkeys, guineas, bantams, Hares, Collie and Fox-terrier puppies. Stock and Eggs. Exceptional fine cat. free. Write for yours now. Edwin A. Souder, Telford, Pa.

S. C. White Leghorn baby chicks, Tom Barron Strain, 12 to 15c each, according to season. The world's greatest layers. C.P. SHIREY, STEWARTSTOWN, PA.

Baby Chicks English Leghorns $15.00 per 100. From trap nested stock. Remember we don't run a "Hatchery." GLENDALE POULTRY FARM, Dillsburg, Pa.

Baby Chicks Our famous winter laying varieties. White and Bar-Rocks, Reds, Leghorns, Anconas. Get prices before buying chicks. E. R. HUMMER & CO., Frenchtown, N.J. R.D.y

COCKERELS S.C.W. LEGHORNS WYCKOFF STRAIN DIRECT. The strain that lays many large White Eggs. J. M. CASE. GILBOA, NEW YORK.

"Ohio's Best" White Plymouth Rocks. Mating list describing ten pens of these wonderful birds ready. H. Weaver, Lancaster, Ohio.

CHICKS S.C.W. Leghorns, 11c. Money refunded for dead chicks. Cir. free. W. A. Lauver, McAlisterville, Pa.

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Extensive Cat. free. Varieties fine poultry, turkeys, geese, ducks, guineas, bantams, hares, dogs, pigeons, eggs, stock. Pioneer Farm, Telford, Pa.

Hatching Eggs S. C. White and Buff Orpington and Black Minorcas. 15 for $1.50; 50 for $3.50. Postpaid. W. J. Widney, Doylesburg, Pa.

EGGS-13-$1; 30-$2; Thoroughbred Rocks, Wyandottes, Reds, Leghorns, Hamburgs. 19 varieties, 36th year. Catalog. S. K. MOHR, Cooperstburg, Pa.

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Eggs for hatching. White Turkeys, Moscovy, Mallard, Pekin Duck, Rocks, Wyandottes, Leghorns. Free Circular. B. F. Kahler, Hughesville, Pa.

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Reg. P. Chinas, Berkshires, C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry. P. F. HAMILTON, COCHRANVILLE, PA.

BERKSHIRES Booking orders now for large Berkshire pigs. Prices satisfactory. DAVID WIANT. HUNTINGTON MILLS, PA.

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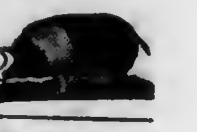

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O. I. C's, BIG TYPE, bred gilts April & May farrow. 30 Aug. & Sept. Boar pigs priced to sell in next 30 days. G. P. ANDREWS, Dansville, Mich.

Poland Chinas Registered and cholera immunized. Sired by or bred to half-ton boars from dams that weigh up to 800 lbs. E. ROWELL, Jr. SCOTTSBURG, VA.

Chester Whites Big Type. Write your wants. We can fill them. R. L. MUNCE. CANONSBURG, PENNA.

Penns Valley Berkshires are the large prolific kind. Write for our price list of young boars and open gilts. W. F. RISHEL, CENTRE HALL, PA.

O. I. C. PIGS Silver Strain. Special prepaid prices. Address GEO. F. GRIFFIE, R. 3. NEWVILLE, PA.

O.I.C. & Chester White Spring pigs ready soon. Satisfaction & safe delivery guar. JOHN L. VAN HORN, TROY, PENNA.

O. I. C. & C. W. pigs, shipped C. O. D. Sired by and out of champions. Mischief 2d weight 500 lbs. at 12 mos. S. L. RHODES, VERSAILLES, OHIO.

Large Berkshire Swine Registered High Grade. Prices reasonable. Write HOME FARM, CENTER VALLEY, PA.

REG. BERKSHIRE pigs for sale cheap next sixty days. W. J. McCONNELL, OXFORD, PENNA.

Durocs choice Sept. boars and gilts. Will breed gilts for Aug. & Sept. Spring pigs either sex. IRA D. JACKSON, R. 10, VAN WERT, OHIO

Reg. Chester Whites big type. Guernsey Calves. Write your wants. MOSES EABY, Landenberg, Pa.

Horses

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No. 125175, for sale. Foaled April 19, 1916.

ELIZABETH FARMS, R. F. D.
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Clydesdale Stallions Young horses, ready for service. Fine individuals; prices reasonable. MONTROSE FARM, ORANGE, VA.

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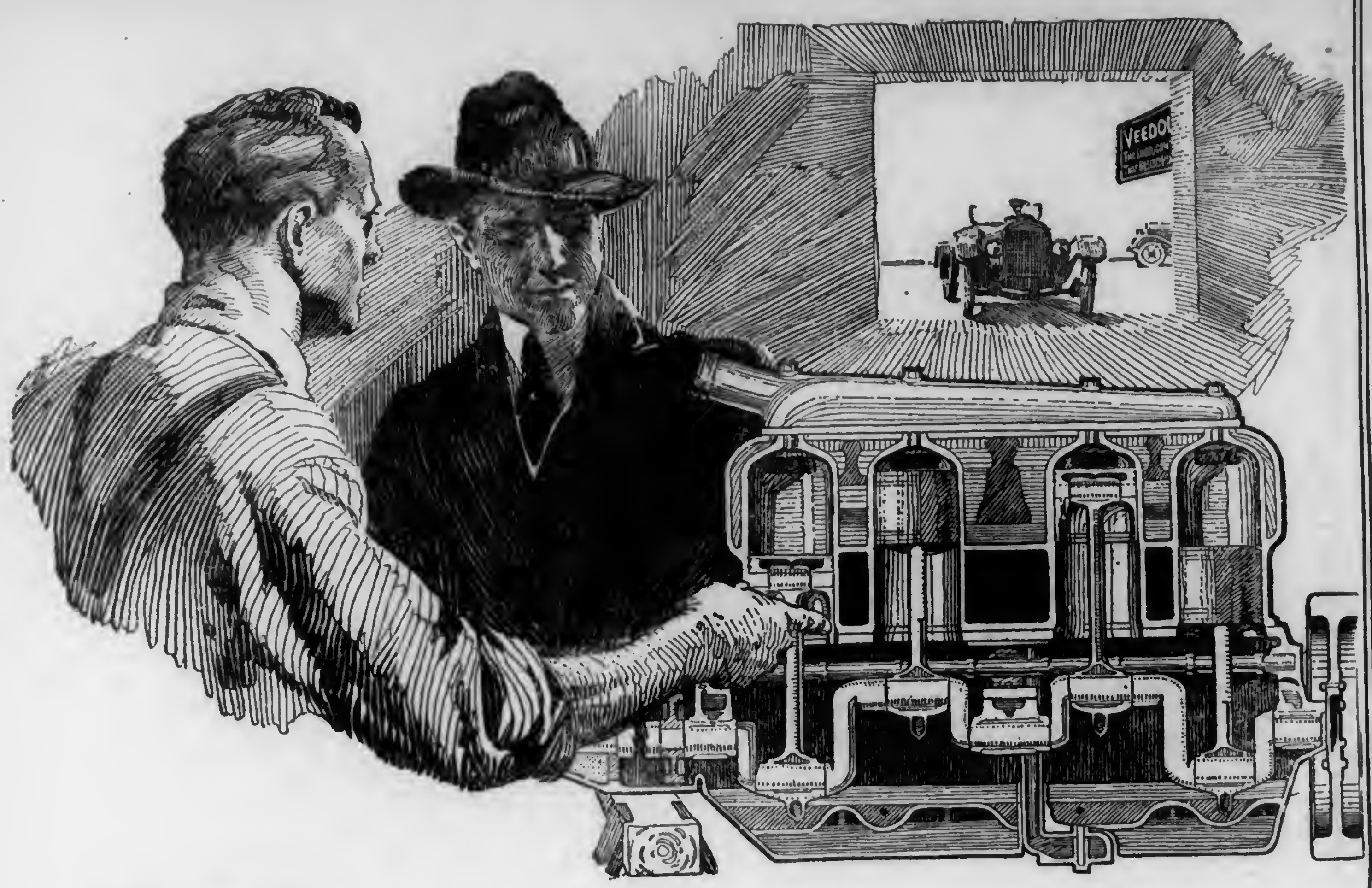
We have on hands a large number of Percheron and Belgian stallions and mares in ages from one to seven years old, all for sale at reasonable prices. Gilt edge guarantee given and make terms to responsible buyers. We deliver all stock to home of purchaser freight prepaid.

Our headquarters at LaFayette, Indiana, can be reached by four different lines of Railroad. Only 60 miles northwest of Indianapolis, and 120 miles southeast of Chicago.

We are also extensive breeders of Hereford cattle and Hampshire swine. We have sold many stallions and mares in Pennsylvania; thirty-five head going to Dr. Thomas Ashton of Wynnewood; and recently we sold to Mr. George F. Fox of Westtown a great stallion and some mares of the Percheron breed, and many others in the State. Will be glad to answer all inquiries promptly. Vistors always welcome at our farm.

J. CROUCH & SON, Props.
LaFayette, Indiana.



19 places where sediment damages your engine

1. Cylinder walls
2. Pistons
3. Piston rings
4. Wristpins
5. Wristpin bearings
6. Crankshaft main bearings
7. Crankshaft
8. Connecting-rod bearings
9. Connecting-rods
10. Valves
11. Valve seats
12. Valve cams
13. Camshaft bearings
14. Camshaft
15. Timing gears
16. Ignition driveshaft bearings
17. Generator shaft bearings
18. Oil circulating pump
19. Spark plugs

19 places where sediment damages your engine

WHEN your engine loses power, knocks, bucks and overheats, nine times out of ten it is sediment in the oil that is to blame.

Just look at the long list of vital parts that will quickly show serious wear when sediment is present in any considerable amount.

Ordinary oil cannot resist the intense heat of the engine—200° to 1000°F. It breaks down quickly. The resulting sediment crowds out the oil with true lubricating qualities from points where it is needed most. Moving metal surfaces, which should always be separated by a protecting film of lubricant, are thus thrown into direct contact.

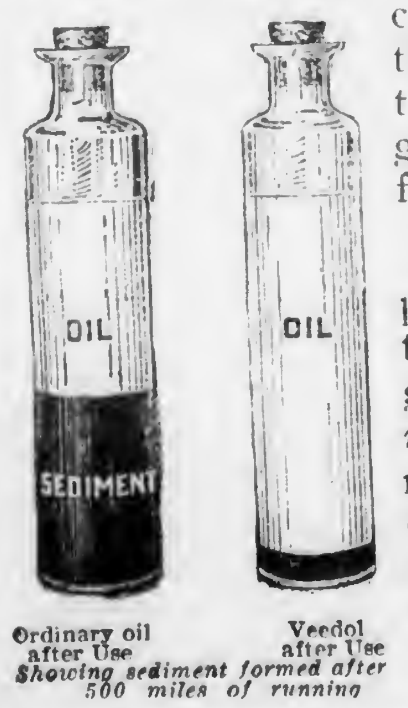
Why sediment causes wear

A strong magnifying glass reveals millions of microscopic teeth covering the apparently smooth surface of a bearing or other working part.

When the cushioning oil film between these surfaces is destroyed or excluded by sediment these tiny metal teeth grind together, thus causing friction and wear.

When this happens in any important part of an engine, costly *replacements* soon become necessary. Damage due to sediment in ordinary oil *can never be repaired.*

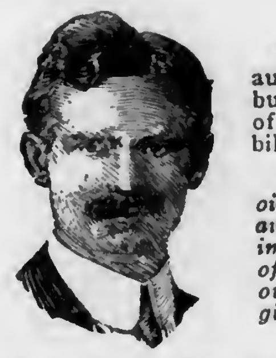
That is why you cannot afford to buy ordinary oil at any price. The cost of using it is appalling, because of its injurious effects on your engine.



Ordinary oil after Use   Veedol after Use
Showing sediment formed after 500 miles of running

A. Ludlow Clayden, Engineering Editor of Automotive Industries, and one of the most prominent engineers in the automotive field, says:

"In the past, too little attention has been paid to lubrication. Oil needs to be chosen for an engine almost more carefully than food for a child."



P. M. Heldt, recognized authority on internal combustion engines and author of "The Gasoline Automobile," declares:

"The proper selection of oil for the lubrication of an automobile engine is a very important matter. The grade of lubricant used affects not only the efficiency of the engine, but also its life."

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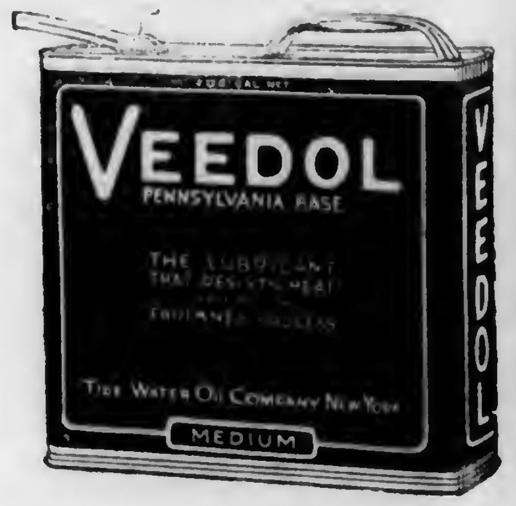

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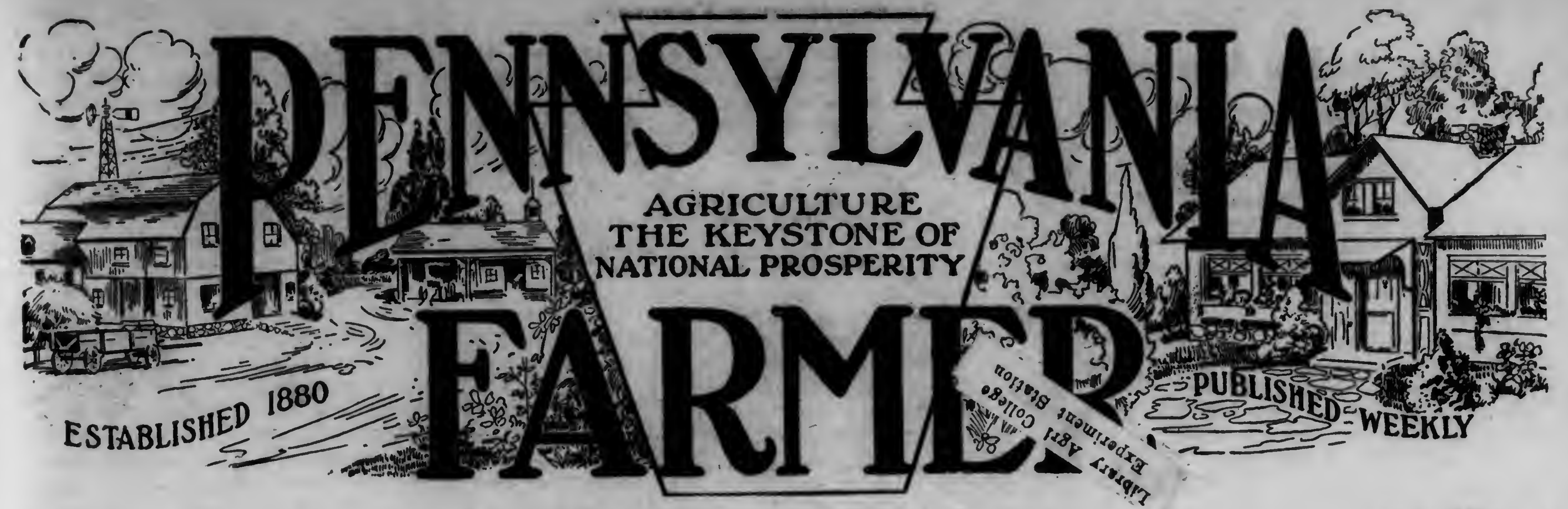

PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880
PUBLISHED WEEKLY

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How Do You Advertise Your Business?

Some Important Factors That May Help or Hinder Us in Our Advertising

We as farmers belong to the great class of producers. While we also use or consume a great variety of things which are bought, we should, nevertheless, have more to sell than we buy. Our profits are not entirely determined by the price received for the goods, but certainly we do not expect to make a very good living if we must sell continually below market price.

If one takes the trouble to notice the various tactics employed and the large sums of money spent by the various business houses to advertise their goods, it will be apparent that the farmer has the art of successful advertising developed to a less degree than have most of the other great industries. The limit that farmers usually go is a "Want" or "For Sale" advertisement in a local newspaper. They, however, advertise themselves as well as their products in many other ways, altho they may not think of it as such.

The first factor in favorable advertising is to do an honest business at all times. One need not try to pull wool over our eyes very often before he is regarded as a crook. The fellow who guarantees a horse with the heaves to be sound, or who intentionally sells fifty-seven pounds of potatoes for a bushel, is using a poor system of advertising for his farm business. Not only will his old customers not come back again, but his crooked business methods will soon become known over the entire neighborhood and he will, therefore, find it difficult to get new people with whom to deal.

A good class of live stock is a good advertisement for any farmer. If the horses look well fed and groomed, if the wagons and harness are in good repair, if the heifers or cows in pasture are good individuals instead of a bunch of scrubs, it is a good sale-card for anything the farmer wishes to dispose of. A man who is careful of his live stock will naturally also use the same care with his other things.

Neat and well-kept buildings, lawns, fences, etc., aid in advertising. Few want to buy seed wheat or corn, or anything else for that matter, from a farmer who has everything out of condition. The man who keeps his place in repair, plants his crops in fairly straight rows and keeps them free from weeds and has his farm looking as if it were conducted by a live man instead of an apology for one, need not go begging to sell his surplus products.

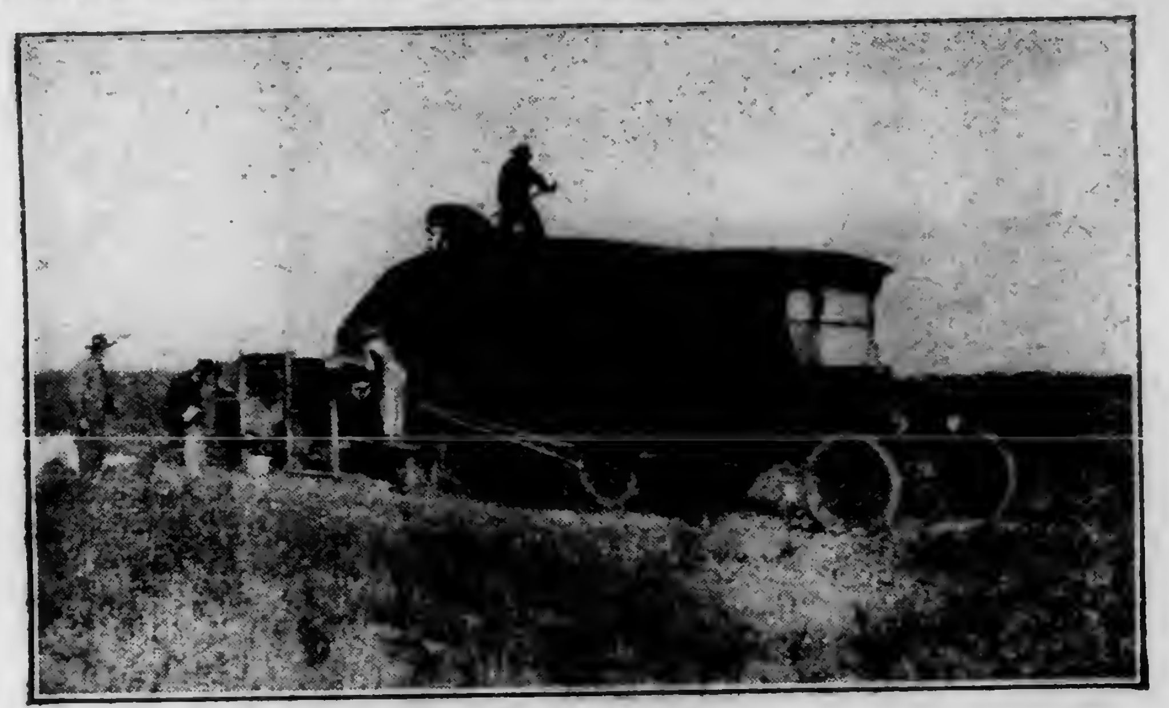
One's personal appearance exerts a big influence upon a prospective customer. A person who is neatly dressed can dispose of his products to much better advantage and retain his buyers more easily than a slouchy, ill-kept person. This is especially true if one is selling his products, such as small fruits, vegetables, milk, poultry, etc., directly to the housekeepers at their homes. They do not want anything handled by dirty hands and do not even want the accompanying rickety horse and wagon stopping in front of their residences.

Printed letter-heads, giving the name of the farm, the name of the owner and the post office address are a paying advertisement. When a stranger gets your letter, he at once feels that you mean business and are a person who is accustomed to dealings with other people. Such a letter will gain the consideration and prompt attention in many cases where a letter written on poor paper would simply be cast aside.

Of course every real farmer nowadays who has a working margin of money has a bank account, even tho it be small, instead of keeping his money hid in a drawer or under the carpet. By having the bank print your name and address on the blank checks is one of the cheapest and best methods of advertising I know. It at once gives you a certain financial prestige. It is as much as saying that this man is all right for the bank is endorsing him. With your name thus printed on the check, you can buy goods from most firms even tho a stranger to them, and the large department stores will honor such a check and deliver goods before they have made collection on it.

There is no way in which the daily happenings on the farm are spread more quickly, in our case at least, than by the hired help. The help usually spend their evenings at the country store, or any other place where a small crowd is likely to gather and discuss the topics of the day. If one is able to get along well with them and give them good treatment, they will give you good advertising in the neighborhood and put in a good word for you where they can. If they are misused, the opposite will usually be the case. They have all the farms mentally card cataloged and all the undesirable places are listed, which partly accounts for the fact that some people have very little trouble to get help while others are unable to hire anyone.

We can all do a lot of good advertising for all our farm products among the city people. Almost every person who has never lived on the farm is positive that the farmer is getting entirely too much for his produce and is becoming immensely rich. We can all acquaint our city friends with the cost of production when opportunity presents itself, especially when accounts are kept so that statements can be backed by actual figures. If the real conditions under which our products are grown were known in the city and the costs, risks, and long hours of toil were appreciated by them, there would be no more boycotting or lessening of consumption of certain products, but they would keep on buying and be willing to pay a just price.—W. H. Rothenberger, Montgomery Co., Pa.



The Emergency Helper on S. D. Keller Farm, Clearfield County, Pa.

AN EMERGENCY HELPER

The accompanying illustration shows how we got our threshing done last fall. Help was so very scarce that we could not get men enough to run a large threshing outfit. I got my son to come from the city with his delivery car. We hitched this car to a one-horse threshing machine that has been standing idle for many years, and got the work out of the way.—S. D. Keller, Clearfield County, Pa.

Preparation of the Seed Bed

There exists a shortage of farm labor because the farmer is unable to compete with industrial concerns. Many men have left the farms to work in factories where wages are high, and many more have been drafted into the National Army and others have enlisted. The farmer is left to run his farm and make it produce more than ever before without the oldest son or hired man to depend upon. Something must be done. Each farm is affected in some way. Some rearrangement of methods and cropping system must be effected.

There are some things, however, which can not be omitted. For example, the stock must be fed, the cows milked, and crops planted. In connection with the last there are certain steps which are more important than ever before. Seeds are expensive, and care must be given to the seed bed in order that every seed may grow. In the case of planting a crop, each step is important and necessary. The preparation of the seed bed is important because upon it depends the start which the young plants get in life and a good start is the biggest part of the battle.

Each crop requires a special preparation of the seed bed. The potato requires a soft mellow soil, sweet clover a very firm soil, and corn a condition midway between the two. For this reason, certain crops are better adapted to certain soils than others, and certain soils need different treatment than others for the same crops. In general the preparation of the seed bed should be made with reference to the size of seed to be sown, meaning that the small seed must have a thoroly pulverized seed bed and should be planted only after thoro preparation of the soil, whereas the larger seeds—the grains—do not require such thoroness of preparation.

When a seed is planted there are a few days, varying with the variety and kind, during which the young plant starting from the germ lives on the starch stored in the endosperm. Germination of the seed will not take place unless there are heat, moisture, and air present, nor is the starch of the endosperm available without moisture. Right conditions are promoted by the proper working of the soil, and more, the small seeds do not come in contact with the soil unless the soil particles are very small.

There are also greater advantages which extend thru the growing season. Good tillage at the time of preparing the seed bed conserves moisture by forming a mulch over the surface of the ground, lessening evaporation, and thus keeping the heat in the soil. In this way, the temperature is gradually increased as warm weather increases. Cultivation permits a freer circulation of air. All of these create conditions necessary for germination and the proper development of the plant. So in rearranging work to conform with the new state of affairs it should be remembered that it is better to do less and do what is done well, omitting no single step, than to try too much and hastily perform some of the operations necessary to success. Every operation performs special service in preparation; for instance, if the plowing is poorly done, no amount of after-cultivating will fully rectify it. If harrowing is but half done, the seed gets a poor start and is handicapped thruout the season. The lick-and-a-promise method should have no place in farm methods this year.—John H. Voorhees.

A REAL OPPORTUNITY

A successful farmer once said that he made the most money in years when conditions were unfavorable for crops. "For," he said, "any man can grow a good crop during a favorable year, and the price is always low. On the other hand it takes careful fertilizing, cultivating, and harvesting to make a good crop in a poor year. But for that very reason, because supply is low, any farmer who can make a good crop in a poor year is assured of good profits."

This truism will be borne out next year as never before. Fertilizers, machinery, seeds, and labor will be harder to get next year than ever before. Even if the season is good there will be small chance for ordinary methods to bring thru a fair crop. To begin with ordinary crop growing methods presuppose a good supply of cheap labor.

Of one thing we may be sure. Labor will not be plentiful in 1918. Nor will it be cheap. On the other hand, crop prices are bound to be high next year because there will be an active demand for everything we can possibly produce.

There is a real opportunity next year for the forehanded man; the man who gets in the game early, the man who gets his supplies of fertilizers and seeds while the getting is good, the man who is prepared for every eventuality, the man who uses what labor he has to the best advantage and uses it only to grow good crops. For this sort of farmer America holds forth a promise as never before. For the laggard the prospects are a little worse than usual.

Lessons from Public Sales

Sales of farms and personal property have been so numerous in this community during the past year that it seems we are in danger of becoming a nomadic people, continually in motion from one home to another. In many cases, this is a deplorable fact. The sincere love of a good country home, which fosters a desire to spend a lifetime contentedly there, seems to be disappearing along with the slower and more primitive manner of life which our fathers cherished. Since much of the happiness of living depends upon being contented with our lot in life, it is often an unsolved problem why we should be so eager to change our occupation or place of residence. Whatever the cause, the habit of wandering seems to be firmly established in the American people.

As we look backward and reflect on some of the sales which we have attended, there are some examples which come forcibly to our notice. The first is that of a young man who had lately inherited a farm, following the death of his father. The glamour of city life attracted him, and the live stock and farm equipment were sacrificed at public sale. The farm was rented to a tenant, and the owner moved to the city. Some years later he returned to the farm, having learned a necessary but rather expensive lesson. He was honest enough to admit that the money realized from the sale had disappeared thru mismanagement during his short stay in town. He is now succeeding fairly well on the old farm, which he should never have deserted. Is this lesson plain enough?

The second lesson is almost the opposite of the one just stated. In this case a wealthy tradesman of a nearby city purchased a run-down farm, without the necessary knowledge or experience, attempted to convert it into a profitable stock farm, ignorant of the fact that years of careful improvement must precede this magical transformation. After two years of low crop yields and high expenses he became discouraged, and his thoroughbred stock was offered to the highest bidder, realizing only a fraction of its original cost to the owner, because the animals were in poor condition and presented a very unfavorable appearance. In this case the mind which was fitted to succeed in mercantile life was totally unable to cope with the problems of the farm. His failure was just as pronounced and just as humiliating as that of the young man who left the farm to meet disappointment and failure in the city.

Another sale comes clearly to mind. The farm has been sold, and the stock and farming equipment are being offered at auction because the owner—an old and feeble man—is no longer capable of operating the farm at a profit. Since then he has lived the life of a "retired farmer" in a neighboring village, and his life has been devoid of healthful activity, and lacking in interest and enjoyment. It is my firm belief that, unless compelled by absolute necessity, an aged man should never retire from the farm.

There are many cases in which the old folks have gracefully resigned the farm work into more able hands, without leaving the farm, even tho the work has not been carried on in the same old way to which they were accustomed. Perhaps the profit from the farm was transferred to other pockets, but the owner was still absolute master of all the attractions of farm life—the companionship of the live stock and growing things, the pure air, food and water—he had only abandoned the hard work and worry of farming. We can think of no more healthful or beneficial life for the old folks who have lived their lives on the farm. Undoubtedly, this mode of life has in many cases added years to the three score and ten originally allotted to a strong man.

I remember with pleasure another sale, one which was altogether justifiable and successful from every viewpoint. The sale was made in order to settle an estate. The farm, tho small, was kept in first-class order; the buildings, tho unpretentious, were properly arranged and carefully kept in repair. The live stock and machinery offered for sale showed every indication of good care. Needless to say this sale was a financial success. A large crowd was in attendance, and the good-natured spirit of the owners seemed to spread like magic among the bidders, and the various articles offered for sale were bid up to a fair value.

The manager of this sale fully understood the charitable power of a good dinner, and the crowd was treated to a generous lunch of buns and meat and sweet cakes, with plenty of hot coffee. The lunch was served promptly at noon, as a half hour's delay would result in a grouchy crowd. The live stock and other valuable chattels were reserved for the afternoon sale, and the men, properly fed and warmed by an abundant dinner, gave an exhibition of spirited bidding. The terms of the sale were equally generous, the buyer being offered a credit of nine months by giving approved security, or a discount of 3 percent for cash. The terms have a controlling influence on the success or failure of a sale. I have known a sale to drag along with half-hearted bidding thruout the day because the owner tried to save a few dollars by serving an economical lunch, or by eliminating the usual discount for cash. The buying public properly resents such tricks of false economy; a spirit of generosity in the seller is just as readily appreciated by the buyer, and results in an equal generosity in bidding. The "penny wise and pound foolish" philosophy must be discarded if we wish to conduct a successful sale, either public or private.—John Marsh, Ohio.

The Canadian Field Pea

The field pea, sometimes known as the Canadian field pea, deserves even wider use than has been given it. Since the field pea requires a cool temperature during its growth it is well adapted for spring and summer growth in the northern portion of the United States and in the comparatively high altitudes of the Rocky Mountain region, and for winter growth in the lower south. It is useful on the farm as a rotation crop for hay, grain, silage or green manure, and the peas may be used in the green state as a vegetable like garden peas.

Time of Planting

In the north the field pea may be planted very early in the spring—even in northern Michigan, Minnesota, and Wisconsin, in late April or early May. In the extreme South it may be planted in November, and in the latitude of North Caroline, in February.

The rate of seeding varies with the size of the seed of the different varieties—from 1½ bushels for the smallest to 3½ bushels for the largest when broadcasted. When sowed with oats the proportion of peas to oats should be about two-thirds or one-half. The field pea is best sown with a grain drill.

Inoculation is necessary for field peas unless they are grown in ground in which bacteria are already present. In mowing the vines, attachments should be used on the mowers which will raise the tangled plants from the ground and prevent clogging the cutter-bar. Peas may be threshed in an ordinary grain separator with most of the teeth removed from the concaves and the speed of the cylinder reduced.

Harvesting for Various Uses

The vines should be cut for seed when the pods are fully mature and the peas firm. For hay they are cut earlier, when most of the pods are well formed. When grown for hay, peas are usually planted with oats or some other grain crop.

When intended for use in silos, peas are usually planted with bald barley and cut when the latter is ripe. Pea ensilage has a higher feeding value than corn ensilage, but should be fed in connection with a grain ration. It is especially good for dairy cattle but also has given excellent results in fattening beef cattle and sheep. When peas are grown for green manure, a large-vined sort should be selected. The most favorable time for plowing under is when the lower pods are well filled. It should be remembered that the use of a green-manure crop is profitable only in sections where sufficient soil moisture is present to cause the quick decay of the vegetable matter turned under.

Altho peas are pastured in some regions, many farmers are discontinuing the practice because they consider it wasteful, and are harvesting all or a part of their crop and feeding it in a feed lot. The use of alfalfa or sweet-clover pasture in connection with the feeding of field peas noticeably increases the rapidity with which the animals gain in weight.—U. S. Dept. of Agri.

By the Way

By

Father Penn

The Little Leaks

An old saying—one more frequently repeated than heeded—is: "Small leaks will sink a ship." The losses which continually occur in almost every business and which might be avoided or greatly lessened often spell the difference between profit and loss. The business of farming is no exception to the general rule. Of course, our attention has been called to them time and time again and while we acknowledge the truth of the statements, yet we put off applying the remedy to a "more convenient time", or excuse ourselves in the thought that "it is too much trouble". These losses occur in reduced yields for the want of care in selecting seed, in failure to treat seed for prevention of smut and other diseases, and in neglecting to spray for the destruction of insect and fungus enemies. While such work does take a little time, that time is well repaid by the larger yields and better quality. Such work is in the nature of a crop insurance against a loss that is more certain than loss by fire.

One of the leaks on the farm—and it is by no means a small leak—is the loss occasioned by rats and mice. The destruction occasioned by these vermin is so general and has been suffered so long that it would seem that most people had given up all hope of ever ridding their premises of them. As a matter of fact, the majority of people have never made an energetic and persistent fight to exterminate them. That it can be done is proven by several notable examples where whole sections have been cleared of them.

It has been said that the rat is the most destructive animal in the world, being charged with causing the loss of $200,000,000 annually. Based upon man's average earning capacity, this means the destruction of the gross earnings of an army of 200,000 men. Is that a little leak when man-power is so much needed? Or, even in normal times when so many people want for something to eat?

It is not alone because of the destruction of food and property that rats are to be dreaded. They have been the cause of terrible scourges of bubonic plague, a pestilence which used to decimate whole cities before the rat was convicted and partially controlled. It has been asserted that this and other diseases transmitted by the rat have caused the death of more people than have been killed by all the wars of history! Is it not time we should take up the work in earnest?

No intermittent, half-way measures will be effective. In the first place, new buildings should be constructed and old buildings remodeled to exclude entrance and destroy the harbors of these pests. The best and most economical material for use for such purposes is concrete. Such work is worth while for many other reasons also. Corn cribs and grain bins may be protected by the use of wire screens, sheet iron, tin, etc. The protection of wild enemies of the rat such as owls, certain hawks, etc., is to be recommended. Greater care in cleaning up refuse, waste material about the barn, fields, warehouses and similar places helps to discourage them. Care should be taken in the construction of sewers and drains by placing screens over the ends. Crops may be threshed early and the grain placed in rat-proof bins.

Destructive agencies such as trapping, poisoning, organized hunts, etc., should be used constantly. Dogs and cats are valuable and should be kept for this purpose. In these times of great need everyone should make every possible effort to eliminate the waste caused by these heavy tax collectors.

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Special rates are made for live stock advertising. Complete information furnished upon request.

Member Standard Farm Paper Association and Audit Bureau of Circulations

PHILADELPHIA, PA., APRIL 6, 1918.

Clover Seed

It takes considerable nerve to sow clover-seed at around $25 per bushel. With many less important crops it would be good to advise to drop it for the year. But with clover the leading forage feed and the best general soil improver we have it will not pay to drop the seeding even for a year. Better cut down slightly on the amount of seed per acre rather than cut down the acreage of clover for the coming year.

* * *

That Seed Corn

Additional reports on testing of seed corn merely emphasize the seriousness of the situation. Good seed is scarce and it is worse than folly to wait until planting time before getting a supply. It is worse than folly to rely upon any seed without testing. External appearance is no indication of the power of germination. Good-looking corn is found this year to be immature, weak or actually decayed at the germ. Only tested seed can be relied upon.

It has been suggested that the situation may be relieved somewhat by the use of seed from a distance for silage purposes and saving the small supply of good local seed, if there is even a small supply, for grain production. It is well known that the southern counties of Pennsylvania and New Jersey, as well as considerable sections of Maryland and Virginia, have large quantities of corn that are entirely satisfactory as seed. But northern growers know that there is grave danger that this southern seed will not mature in their sections. But it will make good silage if planted early enough. Many northern growers may find it to their advantage to prepare the ground for their silage corn first; plant this with seed from the southern counties, and then follow with their field grain at the usual planting time, using seed from nearer home or seed that is more certain to mature for a good grain crop. This will help conserve the limited supply of local seed, and will give the seed best opportunity to grow. Poor, weak and immature seed requires a warm soil to make even a fair growth. The sound seed can withstand cold and damp conditions that would cause poorer seed to rot.

* * *

Delayed Shipments

As predicted all thru the winter, many farmers are suffering from delayed shipments of farm supplies. Seedsmen are experiencing trouble in getting their supplies, and any delay now means serious delay in getting seeds to farmers in time for planting. Reports are frequent that local dealers in repair parts for farm machinery cannot supply the demands and lack of repairs is retarding spring operations. The fertilizer situation appears to be in better condition as a whole, primarily because fertilizer manufacturers were on the job early and arranged for as steady and as rapid movement of fertilizers as possible. But with all possible preparation, some sections are still having difficulty in getting fertilizers thru in time for use.

Time is short, and farmers cannot afford to wait for manufacturers and dealers to make their arrangements for them. Bring pressure thru your local freight agent to hasten shipments for which you are waiting. It is announced that the railroads have resumed the tracer service which was discontinued for a time. If you got your order in early you should be able now to have tracers put on your shipments if they have been long delayed. It is understood that all priority orders have been discontinued, but the roads give preference to all farm supplies, definitely including seeds, fertilizers and farm machinery used in early spring work. Efforts are being made at the large freight centers to have this preferance observed. Manufacturers and wholesale dealers are doing all they can from their end. Do what you can thru the local agent. Any delay in getting the spring work under way cannot be made up thru the busy summer.

* * *

Tuberculosis Control

It is estimated by government officials that tuberculosis in farm animals causes an annual loss of about $25,000,000 in this country. The greater part of this loss is in dairy cattle and hogs from dairy sections. It is increasing, however, among beef cattle, particularly farm-fed beef cattle where the animals are fattened in close stables. The bulk of this loss falls on the farmers, and if the disease continues as it has in the past the penalty for harboring the disease will fall heavier on the farmers. Already there is a decided tendency to discriminate against hogs from certain sections that have been found to be heavily infected with the disease; and dealers are predicting a change in the system of buying cattle for slaughter which will throw the risk and loss of inspection rejections upon the producers. Such a change will inflict a heavy burden on feeders, and an unjust burden if they use every practical means to suppress the disease. The live stock breeders and feeders, and that means about every farmer, have a tremendous undertaking to eradicate the disease. The only hope of success lies in co-operating with every organized effort directed along the lines of proved value.

The Federal Department of Agriculture is working along three distinct lines, each limited to a class or section, but all looking toward the development of a practical and an efficient eradication policy. The first seeks to eradicate tuberculosis from purebred herds of cattle by means of the tuberculosis-free accredited herd plan outlined and discussed on page 9 of this issue. The second seeks to eradicate the disease from hogs by shutting off the most common sources of infection—feeding of raw milk from tubercular cows and following tubercular cattle in the feed lot. The third undertaking seeks to eradicate the disease from both cattle and hogs within restricted areas. All three projects are frankly experimental, but all are worthy of trial and call for complete co-operation of farmers. The tuberculosis-free accredited herd plan is ready to be put into practice in Pennsylvania. The members of a progressive Guernsey breeders' association of the Northwestern part of the state have already voted to put their herds under the supervision called for by the plan. Any breeder or owner of purebred cattle can put his herd in line for the accredited record by signing up the agreement with the State Live Stock Board and meeting the conditions of the agreement as published.

Some may doubt the efficiency of the plan to do all that is hoped for. The method of testing prescribed and the precautions against the introduction of the disease from outside sources and spread of the disease within the herd are all in line with the best veterinary teaching. If that teaching is right, the plan as outlined should provide the most practical means of combatting the disease among the animals thus handled. If the teaching is wrong, the plan will repudiate the teaching without cost and without loss to the breeders. If the plan does succeed in eradicating the disease from the herd and keeping it out, the value to the breeder of purebred cattle will be incalculable, as already the fear of "buying" tuberculosis is a serious bar to the sale of live stock.

The efficiency of the tuberculin test is still questioned by a considerable number of breeders. They will no doubt continue to question it until there is a better explanation of the unorthodox results that are known to occur. But the fact remains that it is the best diagnosing agent yet known, and as such it must be used for what it will do. The annual losses from the disease and the necessity of concerted action against it demand that the best known means of control be applied.

* * *

Solving Labor Problem

The United States Employment Service of the Department of Labor makes the following statement regarding the farm labor situation:

> "Hysterical and exaggerated statements as to shortages of farm workers and the unfitness of boys for emergency farm work are harmful to the efforts of the United States Employment Service of the Department of Labor and co-operating services to furnish labor to the farmers of the country. If the publicity given to the shortage question and superficial estimates of farm labor needs for the coming season were devoted to telling the farmers of the machinery provided by the United States Employment Service of the Department of Labor for ascertaining their needs, the question would go a long way toward solution. Until the Employment Service knows definitely and in time the requirements of the individual farmer, it naturally can not mobilize and distribute the labor in the country available for agriculture.
>
> "The farmer must be told thru every possible channel of publicity that by asking his rural mail carrier, postmaster or county agent for an application form, or by applying at the nearest public employment office, he will be brought into direct and immediate touch with the farm labor mobilizing machinery of the employment service which is free. The average farmer does not yet know of this intelligence system and every person, organization and publication interested in the task of aiding the farmers should give full and constant publicity to it. The United States Employment Service last week began a national campaign to enroll in its Boys' Working Reserve 250,000 boys for farm service this year."

We gladly give space to the scolding quoted above, but reserve the right to continue publishing the facts as we find them, and also to credit the testimony of successful farmers as to their conditions, needs and experiences. We are well aware that an "hysterical" feeling is quite general thruout the country, but so far it has been less in evidence among farmers than among many others. We, as do the majority of farmers, fully realize that it is necessary to make the best possible use of all available means in order to meet the present emergencies; we know that many of the mistakes made by those in authority cannot now be remedied, and that "what can't be cured must be endured". We pledge the integrity of the American farmer to do the best possible under any circumstance and be as willing as anybody to accept what he must. But we do claim that he knows better than any department or official what are his needs, and what are the requirements of helpers if he is to run his farm successfully. The farmer, like any red-blooded American, resents injudicious meddling. He feels the injustice of methods which leave him more or less stranded by the loss of efficient help, and then of being asked to do the impossible. Men cannot "make bricks without straw" now any more than they could in the days of Pharoh.

The experience and education which the "250,000" boys will get in training and farm life will be mighty good for the boys; it will help to give town people a better understanding of the farmer and his business; many of them will render efficient, acceptable service and we urge farmers to make the best possible use of this help; but the experience of the past as well as common sense tell us that the needed production can not be had with boys and broken-down men as the chief supply of farm labor.

HARRISBURG NOTES

Going in for Acreage.—According to reports which have come to the State Department of Agriculture, Pennsylvania farmers are going in for as large an acreage as they can plow and plant and are trusting to some readjustment of labor to supply the hands needed to cultivate and harvest It is very much to the credit of the farmers of the state that, in the face of the situation created by the demands of national defense and the taking away of many young men and women from the farming communities by the attractions of higher pay in the industries and cities, they are preparing to plant to the limit. There have come reports of districts where farmers will not attempt to plow as much as last year, and even where farms have been virtually abandoned. The reports indicate that many farmers have been selling off their wheat and potatoes in the last month and that the April 1 reports will show a decline in the stocks of both. The state authorities are urging all men on the pay roll of the commonwealth to help the farmers get labor. The state's tractors are gradually being put into the field, and the number operating under ownership of commercial organizations and community clubs is larger than many realize. Secretary of Agriculture Patton, in discussing the tractor problem, says that a tractor is one of the best investments a man can make, as the demands for its services are similar to those of a threshing machine.

More Cattle Raised.—The general impression here is that there have been more cattle fed on Pennsylvania farms this year than for some time and that figures will show a reawakening of interest in this line. In southern counties the farmers are commencing to send their cattle to markets and it is stated that Lancaster, Chester, York and other counties have found it profitable. There will be a demand for cattle for the army cantonments this year which did not exist last year. The number of pigs in the state this year is also expected to be larger. Horses and mules, it is said here, are commencing to show results of army demands and a further decline in the number on the farms is anticipated. In some of the cities the decrease in horses is striking, and as they have not been going to farms there is only one answer.

Advisors Start Out.—The state's farm advisors started out today to meet the requests for information on various lines. There are ten advisors of whom two are new. The Public Defense commission is meeting the cost as the legislature left out the appropriation during the factional fighting at the close of the last session. Over 400 requests for information have been put on file, mainly about availability of certain crops, soil conservation and situations due to hard winters and war.

Warning on Fires.—State authorities have called attention to men engaged in all kinds of public work to the importance of warning people against dangers of brush fires, and that the utmost care be used in the making of spring fires and cleaning up this year Damage done in years past has been figured out as largely due to carelessness. The reports this spring have already shown considerable loss due to fires which got out of control

The Highway Work.—The latest report of the State Treasurer shows that over $2,000,000 is available for maintenance of state highways without using the $500,000 made available for the purpose by the Defense commission, and the organization of repair work is being rushed. The state has also been letting contracts in conjunction with counties and townships at a rate which would indicate that people are bent on improvements in that line. The prices are of the usual war variety.

Filing Petitions.—The biennial rush to file nominating petitions is on at the Capitol and, while the number recorded does not touch what is generally entered within the last two weeks, there are signs that many men will embark in politics this year Much of the holding back is believed due to the desire to get line-ups on the prohibition amendment.

Death Rate Data.—The summary of 1917 deaths issued by the State Department of Health is generally regarded here as one of the most favorable as far as the diseases which are classed as preventable are concerned. Typhoid fever shows the greatest decrease and, as it has been one of the diseases against which the state has been waging a battle, the results are striking. It is shown that the death rate was 10.3 per 100,000 of population against 54 for the same figure twelve years ago. Scarlet fever, diphtheria, measles and whooping cough, the common childhood diseases and cause of many deaths, all show a decrease. The state death rate in general is 14.8 for 1917, against 16 for 1906, the rate being per 100,000.

No Changes Announced.—In spite of expectations Governor Brumbaugh has not made any changes of moment in the state government and the shake-up in the State Commission of Agriculture has again been deferred. It is believed, however, that the governor will soon become politically active and take the stump in behalf of Highway Commissioner O'Neil, which will start his opponents to activities against him.

The State Police.—The manner in which industrial establishments are demanding that state policemen be sent to guard their work is interesting many people here, because the general impression is that the industries are making enough money to provide their own protection except in case of outbreaks and that the state police should be used for rural patrol work. As for the railroads, it is held that it is up to the government. In a number of cases policemen have been refused to works which are large enough to have their own police, or which should be protected by their county authorities.

State's Huge Balance.—The statement that at the end of March the state treasury contained $9,549,000 in its balances is in striking contrast to the predictions made a year ago and reiterated when the governor was cutting down appropriations. It is possible that in another month the balance may grow. Of course, all of this money has been appropriated and a good deal more, and by the end of the year the state may be "hard up", but the fact is that the revenues of the state could be made to go much farther for the benefit of the public if business methods should be injected into the state governmental system instead of throwing "economy" reports into the discard and the method of charitable appropriations be put on a rational basis.—Hamilton, Harrisburg, April 1, 1918

NEW YORK LETTER

Seed Corn Profiteering. — Upon complaint of Onondaga County farmers of unduly high prices for seed corn, ranging to $8 per bushel, the government department of agriculture announces that it will take such action as will be necessary to prevent speculation on the part of seedsmen. The department invites specific information of extortionate prices charged for seed and promises investigation of the same—tho a fair price for efforts to conserve seed will be allowed. It is believed that profiteering will hinder the planting of a maximum crop.

To Work Local Prisoners. — The state commission of prisons has conferred with the sheriffs of the counties, and wherever possible or advisable land will be secured and developed by the prisoners in the various county jails the coming season.

Market Notes. — Onions show a further heavy loss. Yellow sacked stock is $1 per bag. Storage supplies are heavy, with but little buying. Two hundred carloads moved this week as compared with 207 last week. New York and Ohio are now furnishing one-half the total onion movement of the country. State cabbage is also lower. Last week only 69 carloads of old cabbage moved, demand being very slow Potatoes are still lower and big holdings are still in the hands of growers. The government bids for potatoes for the various camps are called for with quotations to be on basis of delivered at camps subject to inspection and acceptance at those points.

Would Rename the Council. — There has been so much confusion of terms in referring to the new Council of Farms and Markets that Dean F. W. Howe, of Syracuse University, and a member of the body proposes to change its name to the State Department of Agriculture. The new law reorganizing the old department and creating the new council and the state food commission in its place was hastily drawn and needs amendment in many features. The only officer common to both the new bodies is John Mitchell, chairman. Inasmuch as the idea of agriculture is the foundation, Dean Howe says it is inconsistent to name the main body from one of its parts. A change of name will simplify the operations and do much to allay the criticism that the new regime has received.

Speeding up the Land Bank.—Applications of farmers for loans from the Federal Land Bank at Springfield have been much delayed, many filed in October never having been reported on. But now, Onondaga County farmers and others are beginning to receive attention and it is hoped renewed activity may be secured.

Business Good, Bankers Report.—Leading bankers of Central New York report money as fairly free, deposits increasing, and industries running full force. Watertown shows a large gain, over 15,000 population increase since a year ago. The banks report many inquiries concerning the new Liberty Loan and believe that all classes are planning to take care of it in good shape

Women Want Rural Nurses.—After a successful interview with the Governor the leaders of the state Suffrage party will have Senator Whitney introduce a bill at once to provide rural nurses If passed, the bill will authorize the boards of supervisors to pay $1,200 a year for a graduate nurse for each 15,000 population outside of cities.

To Help on Farm Labor Problems.—Syracuse University is doing practical work in sending out its men to work on farms. Twenty-five have already enlisted and over 200 will soon go. Prof. Rider is in charge of the matter and with Chancellor Day's approval, a questionnaire has been distributed for this service.

May Lose Commissioner of Education.—Dr John H Finley, the state's efficient commissioner of education has been asked to take the superintendency of schools of New York City at a salary of $15,000. The state fears he may accept the offer, being especially well qualified for the work and well acquainted with the city's needs. The state has had but one other commissioner, Dr. A. S. Draper, since the department was reorganized fourteen years ago.

Boys Now Released.—Beginning with the Easter vacation the schoolboys of the state from 16 to 21 years of age having an average standing of 75 percent in their studies are released for work on farms H. D. Sayer, in charge of the state Boys' Working Reserve is working to perfect an arrangement whereby farmers securing these boys must pledge to plant an extra 5 acres of crops for each boy taken

Dry Campaign On.—Several of the 37 cities are to make a campaign for dry cities before the spring election Billy Sunday will fire the final volley for a dry Syracuse on April 15, with "Ma" Sunday and Mr Rodeheaver assisting In the Legislature, after the hardest fight in a period of years the dry element lost by only two votes Friends of ratification of the Federal prohibition amendment say the struggle is not lost for the year

Watch for Fake Food Substitutes.—It is to the interests of farm crop producers and owners of farm animals that fake food stuffs be reported promptly to the federal administration. At a conference of eastern dairy and food commissioners, many fakes were pointed out—that of egg substitutes being most common. Nothing should be allowed to supplant the demand for eggs if the poultry industry is to be saved, and these substitutes contain but 15 food calories as compared with the 100 calories of a good-sized egg. The use of condensed or powdered milk where fresh milk could be obtained was strongly condemned, as hurting the demand for fresh milk, which must be largely increased if we are to save the dairies.—F.

ALL EMBARGOES LIFTED ON SEED

Field and garden seed will be unconditionally exempted from all embargoes, according to an announcement from the U. S. Department of Agriculture. Instructions will be issued to all railroads in the United States by the Director of Traffic to do everything to expedite the movement of field and garden seed.

WHAT YOUR BOND PURCHASE WILL ACCOMPLISH

The following figures give one a definite idea of what his or her loan to the Government by the purchase of Liberty Bonds will accomplish when used by the War Department:

One $50 bond will buy trench knives for a rifle company, or 23 hand grenades, or 14 rifle grenades, or 37 cases of surgical instruments for enlisted men's belts, or 10 cases of surgical instruments for officers' belts.

A $100 bond will clothe a soldier, or feed a soldier for eight months, or purchase 5 rifles or 30 rifle grenades, or 43 hand grenades, or 25 pounds of ether, or 145 hot-water bags, or 2,000 surgical needles.

A $100 and a $50 bond will clothe and equip an Infantry soldier for service overseas, or a feed a soldier for a year.

Two $100 bonds will purchase a horse or mule for Cavalry, Artillery, or other service.

Three $100 bonds will clothe a soldier and feed him for one year in France, or buy a motorcycle for a machine-gun company.

Four $100 bonds will buy an X-ray outfit.

One $500 bond will supply bicycles for the headquarters company of an Infantry regiment.

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Horticulture

THE PEPPER AS A COMMERCIAL CROP

(Concluded from last week.)

Selecting the Soil

The pepper will grown on a variety of soils and produce fair crops but, like most other plants, it has its likes and dislikes. First, it is a native of a warm country, hence will not stand much cold. Second, the plant is a heavy consumer of water, therefore, should not be planted on soils that are liable to become excessively dry at any time during the growing season. The ideal soil is a light loam that holds moisture well, is easily cultivated, and does not get hard.

Raising the Plants

In order to grow this crop successfully, the seed must be sown in a hot bed about two months prior to planting in the field. This can not be done until all danger of frost is past and soil becomes warm. Some growers grow their seedling plants until about two inches high, then transplant to other beds for the purpose of having some early fruit Of late years this does not seem to pay for the extra trouble and expense involved. Four times out of five, there will be a greater volume of crop from plants set from the seed bed than from transplanted plants

Preparing the Land and Setting the Plants

The preparation of land for this crop is about the same as for other truck crops. Where the soil is inclined to be cold, some well-rotted stable manure in the row will be found very beneficial. It not only adds plant food, but the manure loosens up the soil so the air and sunshine can warm it.

On sandy soils, many acres of peppers are grown with fertilizers alone, using about 600 pounds in the rows and 600 to 1,000 pounds alongside of the rows after the plants have used up the most available portions of the first application The custom here is to plow and fit the soil, mark off in rows three and one-half feet apart and apply the fertilizer by drill or hand in the rows. Drag a chain in the row or use some other means of mixing the fertilizer with the soil Then turn two light furrows together, one from either side, forming a sharp ridge. Leave in this condition until ready to set the plants; then, as needed, rake off this sharp top to nearly level and set plants from 16 to 22 inches apart in the rows, the larger varieties needing the greater space.

As soon as plants have made new roots and begin to grow, give a light application of nitrate of soda, using about a teaspoonful to each plant, applied either between the plants, or alongside, and hoe it in. The second application of fertilizers should not be made until plants set some fruit.

Cultivation

Cultivation should be thoro and often, but not too deep. The better the work is done by man and cultivator, the less hand hoeing will be required, yet some will have to be done. Remember, this crop is started in the field as soon as frost is over and will continue to grow and produce fruit until stopped by frost; hence, it must be kept clean. When the main crop is well set, which will be sometime during August, it is customary with us to apply a second application of nitrate of soda, this time alongside of the row and not too close to the plants as the root system by this time is well out from the row. This application when applied on soils not well supplied with available nitrogen will frequently double the fall crop, not in numbers, but in size of fruits. Some may argue that this method and amount of fertilization is extravagant and expensive It may seem to be quite an outlay of money, but nothing is extravagant that yields a profit I know of no way a farmer can use plant food to better advantage.

The Crop and its Value

Here, we plant out our plants in the field around the last of May. If the season is congenial to the growth of the plants, they will begin to pick some few fruits by July 1st. The writer has picked as early as June 27th, but that was an exception. A season that is cold and backward will surely retard the crop. The pickings will not be heavy until August, or after the plant has matured. In order that the plant may produce until frost in quantity, the early settings of fruit must be picked as soon as ready for market and not allowed to ripen, because as soon as a few fruits are allowed to ripen the plant ceases to set more, hence all fruits should be picked as fast as matured before ripening, until the full crop is set; when the fruit may be left to ripen if thought advisable. In this section, during the early fall while the weather is yet quite warm, farmers let their peppers hang ungathered. They are sure the ripe fruits will bring more money than will the same fruits if picked green, hence our fall crop is more than half red when gathered. Last year, red cheese peppers sold for $1.75 per barrel more than the same fruits picked green.

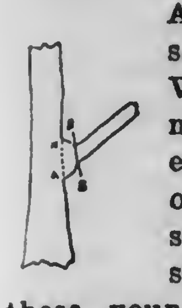
In some sections, some form or type of bull nose pepper may be a better variety for the trade, but here it seems the small cheese proves to be the greatest money maker, and the sweet one is the better. The pod is more fleshy, the flavor good and the color ideal—being a deep red. Never plant for commercial purposes a pepper that is yellow when ripe.

As I said before, the crop is not a hard one to grow in the field, and aside from setting the plants, is no more laborious than many other crops that farmers grow. Setting plants by hand is very hard on the back. Thanks to yankee invention, there is now a machine that does the work as fast as a pair of horses walk across the field. It takes three hands to operate it, and two more to supply it with water and plants. But it does not take long to set a good sized field, once one is equipped.

Yields

The "Bull Nose" varieties, when producing a full crop, will yield 200 to 300 barrels per acre. The Cowhorns and Semi-Bull Noses will yield upwards of 200 barrels. The Cheese, the little pumpkin-shaped peppers mentioned elsewhere in this article, will yield between 100 and 200 barrels; 200 being the exception, not the rule. With prices as mentioned elsewhere in this article, ought not a farmer to be satisfied with such a crop even tho he does use quite freely of fertilizers and nitrate of soda? The beauty of all this is, the land is left in elegant condition for other crops without heavy fertilization.—C. C Hulsart, Monmouth Co., N. J.

WHERE TO CUT IN PRUNING



Apple trees of the Winesap family, including Winesap, Staymans, Mammoth Black Twig, and others, show a decided hump or knob at the point where small limbs leave the main stem. I find that when these young limbs are pruned off much quicker healing occurs when the cut is made just at the end of the knob B-B in the sketch, instead of at A-A. The sketch shows the knob purposely exaggerated.—L. H. Crosman, Montgomery Co., Pa.

PERSONAL EXPERIENCES IN FRUIT RAISING—I

Strawberries.—In order to try out a few of the much-lauded new varieties we set out two years ago several hundred each of Dr. Burrill, Kellogg's Prize, Kellogg's Premier, and Magic Gem. Dr. Burrill is a heavy plant maker, a good bearer, and a strong pollenizer, but the quality is poor, and the berries very dark. Magic Gem has a heavy foliage, is not a good plant maker, produces large berries, but is not a salable berry; they do not appeal to the eye or taste. Both of these were our lowest sellers. Kellogg's Premier is a bright red berry of good quality. It is the first of the four to ripen, but is not our earliest. It makes plants sparingly and is not a heavy bearer. Kellog's Prize is an excellent berry. It is a good plant maker, good in quality, size and yield. It sells for the highest price.

Cut off the "Suckers" Now.

We also fruited one season Todd's Late Champion, Charles the 1st, Early Jersey Giant and Late Jersey Giant. The second and third of these were the only ones we considered worth a second trial. The St. Louis is our earliest berry. It is extra large, medium quality, a heavy yielder and vigorous grower. Its only fault is being too soft for shipment or a long haul in a wagon. Except in a very wet season, it is a profitable berry for the home market. It is rather too pale in color to rank high as a market berry. Warren is one of the largest berries having good quality, but it is a light bearer and makes few plants. Our dependable ones are still Paul Jones and Haverland, with enough of the Tennessee Prolific to insure good pollenization. From now on we shall use Kellogg's Premier and St. Louis for the latter purpose. And somewhere back in the corner is a row of Wm. Belt's for our own use.

Some of the largely advertised

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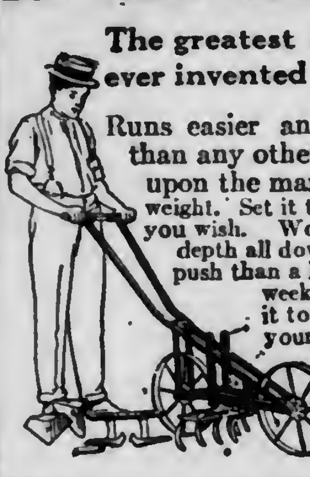

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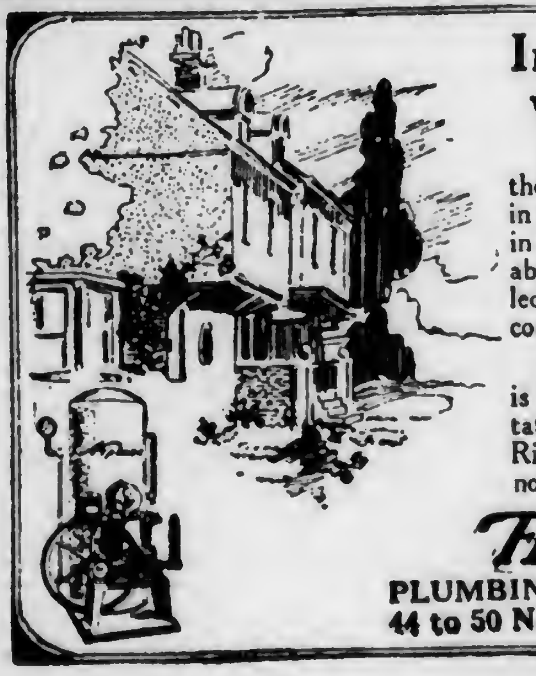

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Lettuce—Iceberg
Lettuce—Wayahead
Onion—White Portugal
Parsley—Moss Curled
Radish—Scarlet Turnip
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Two Years Old Height	Branches	Fine Clean Stock Per 100	Per 1000
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2 Medium size 5 to 6 ft.	.25	2.00	15.00
Sweet & sour cherries xxx 6 to 7 ft.	.35	3.00	24.00
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Grown in the open field, strong and hardy, will make heads from two to three weeks ahead of hot-house grown plants. Price: 500 for $1.50; 1000 for $2.50 postpaid. By express $2.00 per 1000; over 4000 at $1.75; over 9000 at $1.50 per 1000. Potato and tomato plants ready April 15. *Write for prices.*

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FOR SALE About 30 bushels of Reid's Yellow Dent seed corn, field selected, hand shelled, ends discarded, testing 90 percent, as shown by test made by Montgomery Farm Bureau. Price $4 per bushel. C. GARRETT AND SONS, Fairdeal Farms, Collegeville, Pa.

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Golden Yellow Dent Seed Corn. Heavy yielder, strong germination, $4 per bushel. HUGH BRINTON, WEST CHESTER, PA.

Onion Seed Our specialty. all kinds of tested fresh seeds. We sell by weight and pay your postage. Catalog free. ALLEN'S SEED HOUSE. GENEVA, OHIO

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I offer Wilson Soja Beans—My own growing; per bushel $6.25—Bags 35 cents. R. P. LOVETT, ALLSINGTON, PA

SEED CORN Early Improved Leaming. Write for prices. THEO. BURT & SONS. Melrose, Ohio

varieties may do better under special soil and climatic conditions, but in our soil, considered first class for fruit and berries, and for our markets, they are of little value. It is well for the beginner to go slow when making up the list for spring planting. Better look around the neighborhood and see what varieties are used by those who succeed as berry growers. This is a better index of your needs than the glowing advertisements of those who have a lot of plants to sell.

The raspberries we have eliminated entirely as they are too much in the way when cultivating and spraying the trees. The blackberry we have yet but it must come from the orchard soon. This has yielded us better returns than either of the raspberries. We believe any of the hardy varieties will be profitable in starting a young orchard to help cover the expense until fruit can be expected from the trees.—Clayton F. Weaver, York Co., Pa.

PLANTINGS FOR AUTUMN COLOR EFFECTS

Many of us who enjoyed the beauty of the autumn foliage last season would like the same effects in our gardens or on our grounds, but do not quite know how to secure them. A few suggestions from personal observation may help solve the difficulty.

Shrubs that bear red or yellow foliage in the fall are seen to best advantage against a green background. The same may be said of trees; but it is the purpose of this little article to treat more of the lower growing, woody plants.

One very effective combination can be made with the ordinary California Privet (Ligustrum) as a background, with Sumach (Rhies) planted in front, especially where a high, informal hedge or screen is wanted. The privet should be untrained, and if not cut back, will grow to a height of fifteen feet. The sumach will be considerably lower. In the fall, the privet will retain its green color, while the sumach will blaze forth in yellow, orange, and various shades and tones of red. The result is very beautiful. The common sumach has rather coarse leaves which turn in the fall to a rich dark red. The staghorn sumach has finer, deeply serrated leaves which exhibit an autumn coloring of golden and light red shades. The sumachs can be brought home from the woods; dig up the young suckers around older plants. Be careful to avoid the poison sumach, which has rounded leaves and greenish berries in a grape-like cluster, where the harmless varieties possess pointed leaves with red berries in an erect bunch. The combination of sumach and privet is interesting at other times of the year also. In the late spring, the privet will be a mass of small white flowers, and in the late fall and winter, the red berry clusters of the sumach are very attractive.

The barberry (Berberis Thunbergii), well known as a hedge plant, turns in the fall to most beautiful shades of golden red, and after the leaves have fallen, retains its bright red berries far into the winter. Planted close to foundations, the barberry is very attractive. It should be cut back or subjected to formal pruning as is privet

Other hardy plants that are attractive in the autumn and winter are the Spicebush (Lindera) and the Bittersweet Vine (Celastrus). Both are native to our eastern woods. The Spicebush bears very bright red berries which contrast effectively against the dark branches. The wood is also very fragrant. The Spicebush can be propagated by seeds (which should be stratified over winter) or by cuttings; or small specimens can be transplanted in the early spring. The Bittersweet is a climbing vine with bright green leaves, which is often found clambering over stone walls and old rail fences. In the autumn, it bears orange colored berries, which open up to show a scarlet inner part. The berries hang on the vine late into the winter. The Bittersweet is easily transplanted.—R. L. Scharring-Hausen, N. J.

SOME HINTS ON THE PRUNING OF ROSES

In the pruning of all shrubs one must be guided by a knowledge of their individual flowering habits. For instance, the spirea and the berberry flower on the wood growth of the last season, while the hydrangea flowers upon its new wood growth. The spirea and the berberry, therefore, must not be pruned in the spring before flowering, or the very source of the flowers may be removed. The hydrangea, on the other hand, should be pruned in the spring so that it will throw out new wood upon which the season's flowers are to set.

The rose family is a very large and cosmopolitan one, and embraces plants and trees with all manner of habits, and even our decorative garden roses embrace many kinds, requiring diversified treatment, some of them demanding early spring pruning and others that they must not be pruned until after flowering. To give complete instructions for pruning roses would require a rather lengthy treatise, but one or two general rules will enable anybody not already familiar with proper pruning requirements to get satisfactory results.

As pruning roses is done mainly for the purpose of stimulating growth, a safe rule to follow is to prune in proportion to the natural vigor and growing habit of the plant. Thus, a strong growing rose requires but little pruning, while a weak growing one requires much. It follows then that climbing roses, which produce their flowers from last season's wood and also grow vigorously, require little or no pruning, it being only permissible that dead wood and old wood that is past bearing be cut out. To prune them severely would probably prevent them from blooming that season. Every few years an extremely cold winter kills back to the ground the climbing roses in northern latitudes, and the following summer no flowers, or few flowers, are produced, but vigorous vine growth results instead.

It is important that a sharp knife be used, or better still, sharp pruning shears, that the wood be not torn nor the bud bruised, and it is always best to cut just above an outside bud so that the resultant branch growth will be outward to make an open head that will allow sunlight and air to enter readily.

As the sharp prickers on the dead canes inflict painful and unsightly wounds, a pair of canvas gloves will be found to be of service during the operation of pruning rose bushes.—H G. Reading in The Flower Grower.

Tuberculosis Conference

Tuberculosis-Free Accredited Herds

Increasing faith in the tuberculin test, more reliable methods of handling the test, readiness on the part of leading breeders to adopt a new tuberculosis-free accredited herd plan, and some persistent opposition to all testing work were some of the things revealed at the recent veterinary and breeders' meeting held at Wilkes-Barre, Pa. The occasion was a joint meeting of the Northeastern Pennsylvania Veterinary Club, cattle breeders and county agents. There was a fair attendance of representatives of all three interests. The meeting was opened by Dr. H. C. Reynolds, and the principal discussion was opened by Dr. T. E. Munce, acting State Veterinarian of Pennsylvania.

Dr. Munce reviewed briefly but pointedly the economic importance of tuberculosis in our cattle and swine, and the penalty we are paying thru the prevalence of the disease. As specific evidence, he quoted figures from inspection rejections at some of the leading packing houses. At one of the largest packing houses, the rejections of carcasses because of tuberculosis in one year were equal to 50 trainloads of 40 cars of cattle each. Of a lot of 8,000 hogs received from a single middle-western state, 23 percent were found to be tubercular. Of herds tested in Pennsylvania during the past several years, 10.5 percent of the animals have been found to be tubercular. If this percentage were cut in two, and if applied to the entire state it would mean that we have about 79,800 head of tubercular animals in the state, whose valuation in health would be about three million dollars.

Tuberculosis-Free Accredited Herds

Dr. Munce introduced the plan of the tuberculosis-free accredited herds of purebred cattle which has been adopted by the United States Sanitary Association and by representatives of purebred cattle breeders' associations and approved by the U. S. Bureau of Animal Industry. The detailed plan is given in the following statement of methods and rules formulated by the Federal Bureau of Animal Industry:

1. An accredited tuberculosis-free, purebred herd is one which has been tuberculin tested by the subcutaneous method, or any other test approved by the Bureau of Animal Industry, under the supervision of the Bureau of Animal Industry, or a regularly employed veterinary inspector of the state in which co-operative tuberculosis eradication work is being conducted jointly by the U. S. Department of Agriculture and the state. Further, it shall be a herd in which no animal affected with tuberculosis has been found upon two annual or three semi-annual tuberculin tests, as above described, and by physical examination.

2. The entire herd, or any cattle in the herd, shall be tuberculin tested or retested at such time as is considered necessary by the Federal and state authorities.

3. No cattle shall be presented for the tuberculin test which have been injected with tuberculin within sixty days immediately preceding, or which have at any time reacted to a tuberculin test.

4. No herd shall be classed as an accredited herd in which tuberculosis has been found by the application of the test as referred to in Paragraph 1, until such herd has been successfully subjected to two consecutive tests with tuberculin, applied at intervals of not less than six months, the first interval dating from the time of removal of the tuberculous animal from the herd.

5. Prior to each tuberculin test satisfactory evidence of the identity of the registered animal shall be presented to the inspector. Any grade cattle maintained in the herd, or associated with animals of the herd, shall be identified by a tag, or other marking, satisfactory to the state and Federal officials.

6. All removals of registered cattle from the herd, either by sale, death, or slaughter, shall be reported promptly to the said state or Federal officials, giving the identification of the animal, and, if sold, the name and address of the person to whom transferred. If the transfer is made from the accredited herd to another accredited herd, the shipment shall be made only in properly cleaned and disinfected cars. No cattle shall be allowed to associate with the herd which have not passed a tuberculin test approved by the state and Federal officials.

7. All milk and other dairy products fed to calves shall be that produced by an accredited herd, or if from outside or unknown sources, it shall be pasteurized by heating to not less than 150 degrees F. for not less than twenty minutes.

8. All reasonable sanitary measures and other recommendations by the state and Federal authorities for the control of tuberculosis shall be complied with.

9. Cattle from an accredited herd may be shipped interstate, by certificate obtained from the office of the state live stock sanitary officials of the state in which the herd is located, or from the office of the Bureau of Animal Industry, without further tuberculin test, for a period of one year, subject to the rules and regulations of the state of destination.

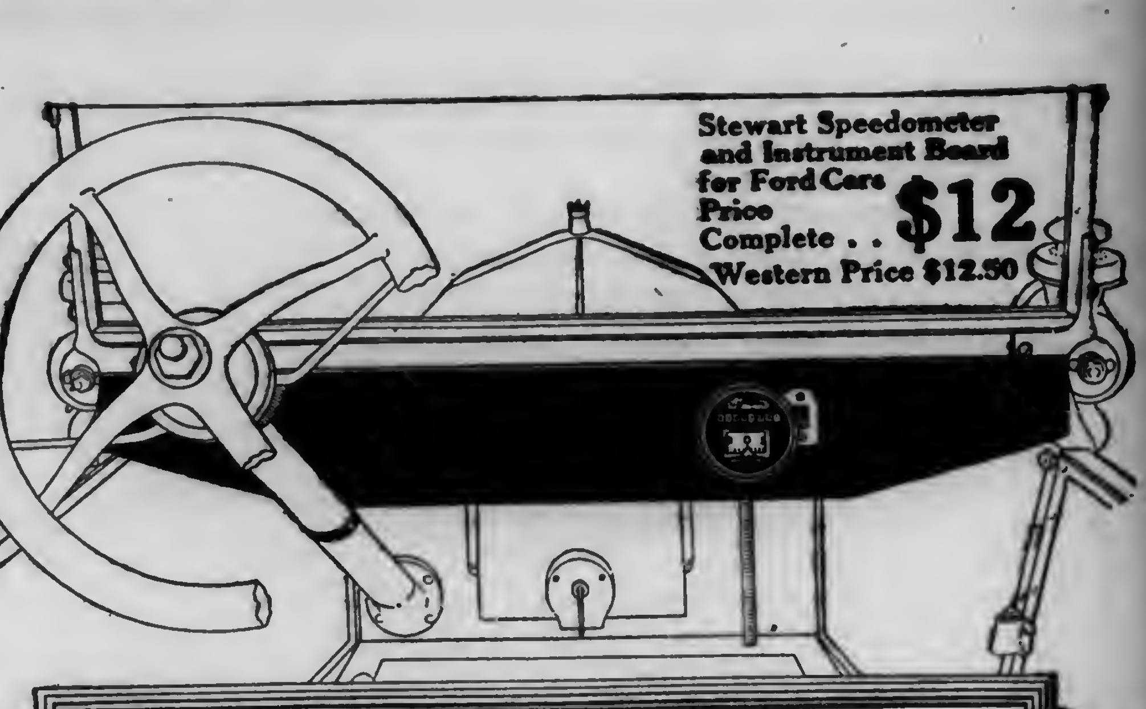
10. Strict compliance with these methods and rules shall entitle the owners of tuberculosis-free herds to a certificate, "Tuberculosis-Free Accredited Herd", to be issued by the Bureau of Animal Industry and the state live stock sanitary authority, said certificate shall be good for one year from date of test, unless revoked at an earlier date.

11. Failure on the part of owners to comply with the letter or spirit of these methods and rules shall be considered sufficient cause for immediate cancellation of co-operation with them by the state and Federal officials.

Form of Contract

Following is the form of contract adopted for use in Pennsylvania which the breeder is required to sign in agreement with the U. S. Bureau of Animal Industry and Pennsylvania State Live Stock Sanitary Board:

"I desire to place my herd of purebred cattle under the supervision of the U. S. Bureau of Animal Industry and the Pennsylvania State Live Stock Sanitary Board for the benefit of the plan to establish official Accredited Tuberculin Tested Herds for



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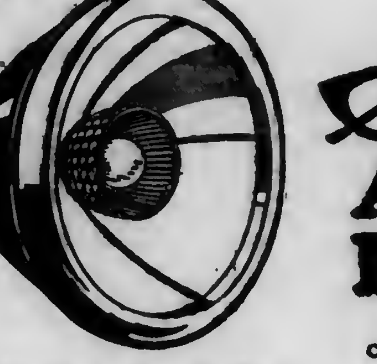

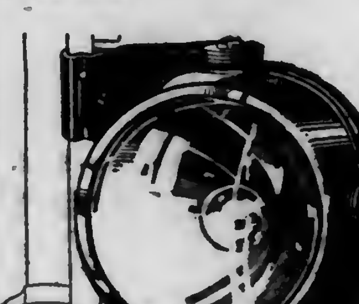

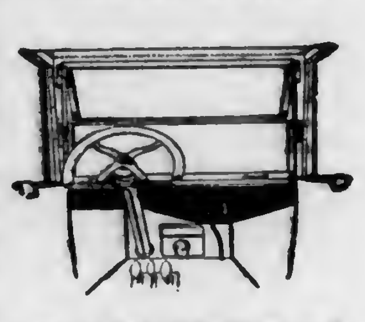

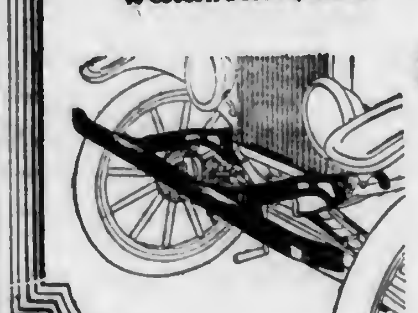

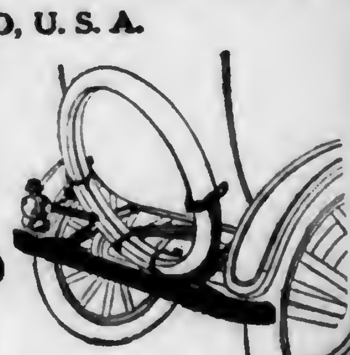

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The Stewart line for Ford cars is complete. Note how varied it is. Examine the illustrations on this page. Each shows an accessory you need — an accessory that will make your Ford a better car.

Take the Stewart Speedometer and Instrument Board for example. This Stewart Product is an absolute necessity on any car.

You are depriving yourself of half the pleasure of motoring if you have no Stewart Speedometer You need it to tell you how far and how fast you drive; to avoid arrest for speeding; to check your gasoline and oil consumption and your tire mileage. You need it for following road guides. You need it wherever and whenever you drive.

The Stewart Instrument Board will "dress up" your car — adds to its appearance. Fills up that unsightly gap below the windshield. Brings the speedometer up into position where it can be easily seen Rests tight against the steering column Eliminates vibration from the steering wheel Easily installed in a few minutes. No bolts, screws or brackets to fuss with Clock, headlight switch, starter control and other accessories can be easily added. Made of wood with black satin egg-shell finish. Speedometer is mounted flush. Adds a finishing touch of elegance to the Ford car.

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Each of these Stewart Accessories is a motoring necessity. Don't be without them another day.

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Burn Oil Device Co., Peoria, Ill. Du Bois, Pa. Aug., 24, '17
Dear Sirs;—I tried the Burn Oil Device out, and it is working fine. I have run about 300 miles this week and have run it on one third the cost of gasoline. I have advertised the device and Ford owners are getting anxious for them. I would like a contract for Jefferson and Clearfield Counties. Yours truly, L. W. Smiley.

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Double tread—double strength—double wear! Yet less than half to pay! No road so rough but that an R. K. Tire rides it easily—and you've saved enough in a year to pay your gasoline bills. For the R. K. Tires are guaranteed!

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Sizes	Price	Sizes	Price
30x3	$6.50	36x4	$11.00
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32x3½	7.00	35x4½	9.00
33x4	8.50	36x4½	9.00
34x4	8.50	37x4½	10.00

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It is 6 1-2 inches long, made of metal with leatherette covering—no wires to break or fuss with—plain, simple, durable. Cannot spill, leak or smoke up the globe. The strongest wind or rain cannot blow it out. It is a friendly and safe companion in all dark places.

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LANCASTER CHEM. CO'S
ANIMAL BONE FERTILIZER
ASK YOUR AGENT, OR ADDRESS US. LANCASTER PA.

the purpose of eradicating tuberculosis and facilitating transportation of tuberculosis-free cattle. In consideration of the assistance to be given me by said Bureau and Board, I hereby agree to the plan and further agree to observe and fulfill the following requirements:

"1. To have all cattle in the herd examined and tuberculin tested by a veterinary inspector of the Bureau or a veterinarian regularly employed by the Board.

"2. To remove from the herd and dispose of all reacting or physically affected tuberculous animals as recommended by the Bureau and Board.

"3. To have the entire herd retested at intervals of not more than one year; also such special retests of individual animals as may be recommended.

"4. To make no additions to the herd without consent of the Bureau and Board and, if necessary, to add no animals to the herd until each new animal shall have passed two officially approved examinations and tuberculin tests.

"5. To thoroly clean and disinfect the premises, correct insanitary conditions and observe the precautions and measures and employ the means recommended by the Bureau and Board to prevent re-introduction or development of tuberculosis in the herd.

"6. To not expose any individual of the herd to cattle which are not members of the herd, except by arrangement which shall be approved by the Bureau and Board."

In discussion of the plan, Dr. Munce explained that after a breeder or herd owner had signed the above agreement, tuberculin is furnished free to accredited veterinarians and the testing is done free of charge. In substantiation of the belief that this plan would eradicate the disease from herds maintained under its provisions, the example of something over 100 herds in Minnesota was cited. These herds had passed the required number of tests and were held by best authorities to be entirely free from the disease. The advantages to the herd owners are the same as those already accruing to owners of cattle that are above suspicion of disease. The South promises the most rapid development in live stock in the next several years. Southern breeders have had their experience with the cattle tick. They are determined to keep free from other diseases if possible. They are already asking for information on herds free from tuberculosis. The tuberculosis-free accredited herds are certain to receive their careful consideration.

In Discussion

Dr. White, of the Federal Bureau of Animal Industry, led in the discussion. He explained the plan of co-operation between the Federal Bureau and the various state live stock sanitary boards and reported that such working agreements had been completed with 27 states. Over 400 herds of cattle have already passed at least one year under the accredited plan. These include over 10,000 head, two-thirds of which are purebreds. Already there is abundant evidence of the benefits to the accredited herd owners. Buyers from distances have frequently appealed to the Federal Bureau and the state boards for information on tuberculosis-free herds. Under the new plan, these agencies will be able to give definite information. Dr. White outlined the work of the Federal Bureau on tuberculosis as falling under three heads: (1) Testing and accrediting herds as outlined in the above plan; (2) eradication of tuberculosis in swine; (3) territorial eradication of tuberculosis in cattle.

The Circular Concrete Tank Presents Many Advantages

In the general discussion that followed, some of the old doubts of the value of the tuberculin test and some of the old questions on its practicability were revived. These same doubts and suspicions have been a part of every discussion of this subject for the past ten years at least, and the veterinary profession is still unable to satisfy the lay mind on all questions raised. The discussion at this meeting tended to indicate a more uniform belief among the veterinary profession that a single tuberculin test is not entirely reliable; that two consecutive reactions at intervals of at least six months is certain enough for all practical purposes; that continued testing at intervals of not more than a year apart is certain means of indicating the presence or absence of the disease in a herd. There was a unanimous agreement that the old tuberculin test is the most reliable diagnosing agent we have, with a promising supplementary test in prospect in the form of what is known as the "opthalmic test" originating in Pennsylvania but not yet fully endorsed by the veterinary profession.

The State College Herd

In questioning the efficiency of the tuberculosis-free accredited herd plan to do all that is claimed for it, the experience in the Pennsylvania State College herds was cited and an explanation demanded. As stated by a member, the College herd was supposed to be tested regularly and maintained in accordance with most modern teaching on tuberculosis control, and yet the herds became affected to a considerable degree. Unfortunately, there was no one present to speak officially of the College herd. These points, however, were made clear: All of the College herds had not been tested regularly every year. Some animals had been brought in for different uses without being subjected to careful tests. Some of the young animals were fed on milk that was neither pasteurized nor known to be from tuberculosis-free cows. A complete history of the herd, together with detailed statements of

previous handling and discovery and treatment of the disease outbreak will be published. A number of factors have combined to delay publication of full facts in the College experience, but when such facts are given they promise to give valuable testimony on nature and handling of tuberculosis.

It is expected that another meeting of a similar nature will be held in the western part of the state in the near future.

MAXIMUM MARGINS FOR MILL FEEDS

The Food Administration announces that it has set up machinery for the vigorous enforcement of the regulations on the selling price of wheat mill feeds and that Federal Food Administrators in the various states will receive complaints and promptly investigate all cases.

A new schedule of margins has been established which should bring all feed to the consumer at a maximum of $4.50 over the mill price for the feed which in the case of bran has already been established at 38 percent of the cost of one ton of clean wheat at the mill, with differentials for other grades of wheat mill feeds.

NEW YORK MILK DEVELOPMENTS

The Dairymen's League of New York and five other eastern states are finding it difficult or impossible to secure a just milk price for its members, and is doing all it can to meet a most difficult situation. The League has just issued a statement of conditions to its members, and on Saturday, March 23, every county held a meeting of its dairymen to consider what was best to be done to save the day.

The statement sets out the facts as culminating from a series of milk events of the past few weeks, as most critically affecting not only eastern dairymen, but those of the whole country. First it should be remembered that the price of eastern liquid milk as recently set by the commission which took farmers' and college expert evidence, as hardly covering the cost of production at this time with feed prices going higher all the time, altho it has been said that the price fixed was the fairest to producers of any yet set by government officials.

Now the condensed milk interests and other manufacturers of milk products refuse to pay the price fixed by the commission and they, with the milk distributors of New York City, threaten to repudiate the findings of the commission unless certain changes demanded by them are recognized by the commission. The holdings of condensed milk are 100 percent above normal, with not enough shipping to permit of sending abroad only a small percent. Cheese holdings are 60,000,000 pounds, or 119 percent over normal. The Government has virtually fixed the price of cheese at 24 cents a pound or less than cost of production, and has limited ice cream manufacture 20 to 30 percent, thus cutting off a needed outlet for surplus milk. The condensaries say that liquid milk in the west and in Canada is 50 to 75 cents per 100 pounds cheaper than in the east, and that they will not pay the price fixed by the commission to make up into condensed milk, when all storage houses are full.

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has many excellent exclusive features.

One-piece clear Oregon fir staves, Hinged California redwood doors, Automatic adjusting straight pull doorway fastener and hoop lugs equipped with heavy car-steel spring.

The only silo that is tight and erect under all conditions, when full or empty, dry or wet, hot or cold.

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"Good to the Last Drop"

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Blatchford's Calf Meal
and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves. It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Company, Dept. 98 Waukegan, Ill.

Build Your Silo With "Ship-Lap" Tile Blocks

Build it but once. First cost only cost, no upkeep expense, fireproof.

Lansing Vitrified Tile Silo

Reinforced with twisted steel—has famous "ship-lap" blocks—stronger walls—less mortar exposed—smooth walls—silage settles better — more beautiful outside — less chance for frost. Steel roof and chute. Also get offer on Climax Silo Fillers and Bidwell Threshers.

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Free Catalog in colors explains how you can save money on Farm Truck or Road Wagons, also steel or wood wheels to fit any running gear. Send for it today.
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The STAR Curb Clamp has been an undying friend of every user of STAR Barn Equipment because it makes the installations of these stalls the work of minutes instead of hours.

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STAR Steel Stalls, Stanchions and Litter Carriers

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STAR goods sold by best dealers everywhere

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Would you be content with 4% interest if entitled to 5%? Then why not save that ⅕ of your dairy profits lost by fixed-feed separators? Get *all* your cream—skim clean at *any* speed—with a

SHARPLES SUCTION-FEED CREAM SEPARATOR

Over a million in use—saving cream waste the world over. Write for catalog. Address Dept. 20

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What Will You Build?

You doubtless need some new farm building this season. Perhaps, it will be a dairy barn, dwelling, garage, silo, hog house, or other outbuilding. Whatever it may be, you will get some mighty helpful ideas from our new book,

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It tells you how to have buildings that are dry, clean, and sanitary—warm in winter yet cool in summer. It shows you how to save on repairs, insurance and coal bills. It illustrates scores of fire-safe farm buildings that will "stand for generations." It's true economy to build with Natco Hollow Tile—makes every building a permanent investment. Write for your copy *now.* Ask also for plans—free if you intend to build.

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If the Cow had her say it would be "a HARDER SILO"

Better Food Sweeter Silage

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EVERY DAIRY FARMER NEEDS THIS FREE BOOK

It tells all about Silos and Silage

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BAG BALM
MADE BY THE KOW-KURE PEOPLE

Healthy Udder—Good Milker

The milk flow will be easier and more generous if the udder is free from sores, cuts, chaps, bruises, cracks, bunches or inflammation.

Bag Balm, the great healing ointment, is used in thousands of the best dairies for all udder troubles, cow pox, and any exterior wound or hurt. Caked Bag is quickly removed by Bag Balm; its great penetrating qualities soothe and soften the tissues and hasten normal healing. Keep Bag Balm on hand always.

Sold in big 50c packages by feed dealers and druggists. Write for free booklet, "Dairy Wrinkles."

DAIRY ASSOCIATION CO., Lyndonville, Vt.

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have 3 distinct walls. Require no hoops. Economical because they last longer. Keep warmth *in* and cold *out*. Absolutely Guaranteed. In use for 15 yrs. Send for cat., prices, terms & Agency Proposition

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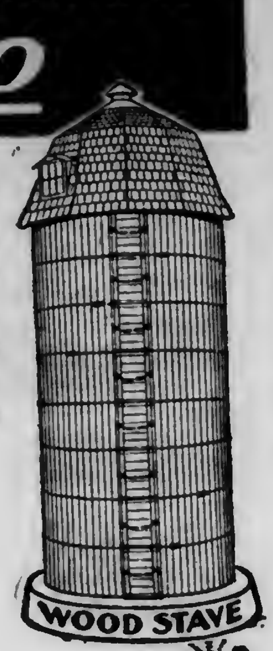

Put Your Faith In A Kalamazoo

A silo is a *permanent* investment, therefore purchasing a silo is not a question of paying a few dollars more or a few dollars less, but of getting a silo that is *right*—in design, in material, in construction.

"Kalamazoo" is the answer. For more than twenty-seven years thousands of successful farmers in all parts of America have put their faith in

Kalamazoo TILE AND WOOD SILOS "The World's Standard."

Last year alone upwards of *six-thousand* new purchasers of silos unanimously decided in favor of the Kalamazoo. And those who bought twenty or more years ago still swear by the Kalamazoo because time and experience have proven conclusively that Kalamazoo silos are *right*, from every standpoint. There's a big dollar's worth of *value* in every dollar of the cost whether you buy a glazed tile or a wood stave Kalamazoo.

They're built to meet the needs of farmers who know and appreciate the feeding value of ensilage and know how a silo should be built to make and preserve ensilage *right*. Kalamazoo Silos excel in design, material and workmanship—combining every desirable feature a silo should have and embodying the knowledge acquired through long experience in silo building. You can't go wrong in buying a Kalamazoo.

GLAZED TILE SILOS—"Permanent as the Pyramids"—fire-proof, frost-proof, storm-proof, moisture-proof, acid-proof, decay-proof, vermin-proof. Galvanized reinforcing. Require no paint, no upkeep expense or repairs. First cost is the last cost. Easy to build—and once built your silo problem is solved *forever*.

WOOD STAVE SILOS—Your choice of four of the best time-defying woods. Kalamazoo Silos are manufactured complete ready to set up. Quickly and easily erected by inexperienced home labor. All Kalamazoo Silos, whether wood or tile, have the famous Kalamazoo Galvanized Steel Door Frames and continuous doors which are universally recognized as the best ever designed.

Write Today for our free descriptive booklet and details of our easy payment plan. If interested in an Ensilage Cutter, ask for Kalamazoo Cutter Catalog.

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We make this remarkable No-Money-In-Advance, Year-to-Pay Offer because we want you to learn from your own experience that here, at last, in the "Majestic" is the perfect separator—a masterpiece of mechanical skill and ingenuity—an amazing triumph achieved in Cream Separator Construction. Test it on warm or cold milk and find out by actual results how the "Majestic" skims down to the last drop—note the fine condition of the cream—how much quicker it skims and how much easier it runs than any other you have ever seen. If 30 days free use proves that it is just the separator you want and you decide to keep it you may make a first small payment 60 days after it arrives and the balance in 60 day payments thereafter, giving you a

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Made In Four Sizes: 375, 500, 750, 1,000 lbs. Capacity

Has all latest improvements including remarkable inside oiling device and improved separable disc bowl

Only Hartman's with their $12,000,000.00 capital, their tremendous organization and over two million customers are capable of such a record-breaking offer. Remember, we will send you any size "Majestic" Separator you want without a cent in advance—no deposit—no C.O.D.—no security—no references asked like others do—no obligation on your part whatever. If you are not fully satisfied with it return it at our expense and you will not be out a cent.

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The Famous Unadilla Ladder

The Unadilla Ladder is a real ladder, not a makeshift; where it should be—**directly under the opening.** It comes as regular equipment, on each door front, rungs 15½ in. apart and 5 in. from the doors. Boys, old men and even women have no difficulty in climbing or entering the silo.

Every Unadilla hoop is tightened in one place—at the door front, where the ladder is always ready, inviting. Door frames are adjustable, at points conveniently reached by the ladder.

Learn about the other superior and equally famous Unadilla features. Send today for catalog, prices and *agency offer.*

UNADILLA SILO CO., Box P, Unadilla, N. Y., or Des Moines, Iowa

Farmers are indignant that the government has allowed Bordens and other allied milk interests to have cars to ship trainloads of New York milk to Chicago to break milk prices there. Farmers there already found prices too low—about 50 cents less than New York prices. Now the same interests turn about and say that western milk is cheaper than New York milk, and the latter must come down. It is a situation calling for all the resources of the Dairymen's League if they are to save the day for their members—or even find a satisfactory compromise.—F.

MILK BY BACTERIAL COUNT

The Borden plants in certain sections of New York State are establishing a new basis of payment for milk—that of the bacterial count. The station at Dryden has heretofore bought Grade A milk paying 15 cents above Grade B milk prices. Both grades have been received at this station at different decks of the station, but from now on all milk will be received at the upper deck. On a base price of $3.11 for 3 percent milk, producers whose milk shows a bacterial count of less than 10,000 bacteria will receive an extra 20 cents, while those showing a count of 10,000 to 25,000 will receive 10 cents extra. In addition, both will receive an extra 4 cents for each point above 3 percent butterfat test.

The Haviland milk station at that place has closed because of an embargo on its milk by the New York City Board of Health. A few of the patrons have been taken on by the Borden plant and more will be later, as more milk is to be handled. The Clover Farms Dairy Co., of Homer, N. Y., one of the biggest concerns of the state, is also paying its patrons on the bacterial count basis. This company wants all the good milk it can get and makes it an object to their patrons to increase their output—an increase of over 20 percent being secured by them last year. They haul their milk for their patrons by auto truck, and have won the highest medals at the state fair for certified milk.—F.

THE APRIL DROP IN PRICES

Following is announcement of April milk prices together with schedules for receiving stations issued by the Inter-State Milk Producers' Association:

We regret to announce a reduction in prices. It seems particularly unfortunate at this time of year when production costs are as high or higher than at any time during the past winter. But the export business in condensed milk has been cut to one-fourth the amount shipped in January. The Chicago prices are $2.80 for 4 percent and New York prices $2.90, and the condensaries must compete with those buying at these figures. The cream market also has been upset and butter is weakening.

Under these circumstances there was no alternative but to reduce the price for April. It will be seen, however, that this new price is above that of other cities, and this advantage can largely be attributed to the very successful campaign being conducted by the Pennsylvania Food Administration to increase the Philadelphia consumption. Our producers are fortunate to have such a healthy condition in the fluid milk market at this critical time.

The Inter-State Milk Producers' Association issues the following schedule of prices for milk shipped direct f.o.b. Philadelphia. This price has been approved by the Food Administration. When milk is not tested the price is to be 7¾ cents per quart.

Test percent	Price per 100 lbs.	Price per quart
3.	3.1	6.9
3.1	3.21	7.
3.2	3.25	7.05
3.3	3.29	7.1
3.4	3.33	7.2
3.5	3.37	7.3
3.6	3.41	7.4
3.7	3.45	7.5
3.8	3.49	7.6
3.9	3.53	7.7
4.	3.57	7.8
4.1	3.61	7.85
4.2	3.65	7.9
4.3	3.69	8.
4.4	3.73	8.1
4.5	3.77	8.2
4.6	3.81	8.3
4.7	3.85	8.4
4.8	3.89	8.5
4.9	3.93	8.55
5	3.97	8.6

Receiving Station Prices

Following is schedule of prices for 3 percent milk at receiving stations. The price for all other tests is to vary at the rate of 4 cents for every one-tenth point above this test. This price has been approved by the Food Administration.

miles		Freight Rates 46 qts. 115 per cent of 40 qt. freight plus 3 percent tax	Price per 100 lbs. 3 percent
1 to 10	incl.	.183	$2.76
11 to 20	"	.196	2.74
21 to 30	"	.207	2.73
31 to 40	"	.209	2.72
41 to 50	"	.230	2.71
51 to 60	"	.240	2.70
61 to 70	"	.250	2.69
71 to 80	"	.260	2.68
81 to 90	"	.269	2.67
91 to 100	"	.277	2.66
101 to 110	"	.285	2.65
111 to 120	"	.294	2.65
121 to 130	"	.302	2.64
131 to 140	"	.310	2.63
141 to 150	"	.317	2.62
151 to 160	"	.324	2.62

NATIONAL MILK AND DAIRY FARM EXPOSITION

The first National Milk and Dairy Farm Exposition will be held at the Grand Central Palace, New York City, the week of May 20. The primary purpose of the show will be to emphasize the importance and the methods of keeping the dairy industry alive and up to requirements during the war. Special features of the show will bear on agricultural education, agriculture, dairy farms, cows, country milk shipping stations, railroad transportation, city milk distributing stations and infant milk depots. It is felt that with the possible exception of wheat, there is no more important food product in the world than milk, and it is to emphasize this fact that the show is to be held. Dr. Charles E. North is to be directing manager, and there is an imposing array of directors and committee members.

Latest figures from the federal department of agriculture show New York second in number of milk cows, being led by Wisconsin, and followed in order by Iowa and Minnesota.

There is just as much reason this year for the planting of spring wheat by New York farmers as there was last year, when it was recommended as a war emergency measure.

ECONOMIZE! Buy in New York from Your Bargain Book

Save Money, Get Quick Service, Help Relieve the Freight Situation

NOW is the time to order goods from New York, and "Your Bargain Book" is the place to select them. "Your Bargain Book" has always stood for big values and prompt service, but there is an added advantage in using it right now.

Buy in New York

Because thousands of cars are bringing munitions to New York for exportation, there is always an ample supply of empty freight cars for sending goods to you. That means there is no delay in waiting for cars when you order from New York City.

The new edition of "Your Bargain Book," shown to the right, has been mailed to all of our customers. If your copy has not reached you, and does not arrive within a very few days, please let us know.

While prices everywhere are higher, you can save more by using "Your Bargain Book" now than you could before the war time prices prevailed. It protects you from the really high prices, because it lists merchandise bought long before recent advances occurred.

Locate "Your Bargain Book" now and keep it handy through the days to come.

$1.55 Fiber Seat Chair

75A1028 Made of selected solid oak with handsomely embossed back slats and turned spindles. High gloss golden finish. Guaranteed embossed fiber seat. Continuous back legs and posts. Brace arms. A strong, substantial chair at a bargain price. Seat, 17½x17 inches; 13-inch cobbler seat. Total height, 42 inches. Shpg. wt., about 13 pounds each. Our price....... $1.55

Quartered Oak China Closet $13.90

95A285 Quartered oak in golden high gloss finish. Fitted with lock and key, adjustable shelves and casters. Exceptional value at our price. Shipped promptly from stock at factory in Indiana. Height, 67 in.; width, 37 in. Ornamented top gallery. Bent glass ends. Shpg. wt., about 125 pounds. Our price...... $13.90

Solid Oak $7.45 Rocker

Solid Oak or Mahogany Finish.

Satin rubbed finish. Covering, fine grade of imitation black leather. Pillow roll at top of back; full spring seat. Shipped promptly from New York City. Seat, 21x17 inches. Back, 25½ inches high above seat. Reclining back. Disappearing footrest. Shipping wt., about 60 lbs.
75A1268-100 Solid Golden Oak.
75A1268-200 Mahogany Birch finished.
Our price......... $7.45

$2.35 Comfortable Rocker

Others in Your Big Bargain Book

75A1126 Made of selected solid oak, golden finish. Full bent arms bolted to seat. Embossed top back rail. Full length back posts. Seat, 18x16 inches; round cobbler center. Back, 28 inches high above seat. Shipping wt., about 20 pounds. Our price...... $2.35

Solid Oak Table $7.25

95A924 An ideal table for library or living room. Made of solid oak, fumed oak finish, with magazine pockets at either end and lower shelf for books. The drawer operates on extended slides and has a hinged lid forming a desk. Fitted with ink well. Shipped from factory in Central New York. 36 inches long; 24 inches wide. Shpg. wt., about 55 lbs. Our price $7.25

Others in "Your Bargain Book"

$9.85 Imitation Black Leather Lounge, Nicely Upholstered

95A2224 Frame of solid oak, golden oak high gloss finish. Covering good grade black imitation leather. Diamond tufted. Full spring construction. Soft cotton top over filling. Shipped promptly from stock at factory in Central New York. For our complete line of lounges be sure to see pages 662 and 663 of Your Bargain Book. Length, 72 inches; width, 26 inches. 24 double cone spiral springs. Shipping weight, about 80 pounds. Our price........................ $9.85

$2.95 Strong Kitchen Table

95A2441 Convenient size kitchen table with top of poplar on whitewood frame and legs of hardwood, nicely finished natural color, varnished. Table top natural wood finish. A solid, serviceable table with legs securely bolted to frame. Top, 48x28 inches. Roomy drawer. Shipping weight, about 35 pounds. Our price $2.95

100 Needles FREE

$9.22 Great Bargain!

713A504 Plays Columbia, Victor, Emerson, Little Wonder, Edison and Pathe records. Single spring type motor. Speed regulator, 8-inch turntable, Universal tone-arm and reproducer, 100 needles free. Colonial mahogany finished cabinet, hand rubbed, 9 in. high, 12 in. wide, 12 in. deep. Shipping weight, 15 pounds. Our price, each $9.22

Colonial Rag Rugs

Offered in 5 Sizes

All Big Values

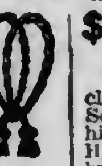
79c *And Up*

Popular plain colors with cretonne border. All are reversible. Particularly desirable for bungalows and country homes and especially bright, cheerful and sanitary for the cottage bedroom. Closely woven on heavy cotton warp. State whether you want the pink, green, brown or blue coloring.

8A4266 Size, 24x36 in. Shpg. wt., about 1¾ lbs. Price 79c
8A5266 Size, 27x54 in. Shpg. wt., about 2½ lbs. Price $1.25
78A8266 Size, 6x9 ft. Shpg. wt., about 15 lbs. Price.. 6.50
78A9266 Size, 7½x10½ ft. Shpg. wt., about 22 lbs.. 9.25
78A10266 Size, 9x12 ft. Shpg. wt., about 30 lbs..... 11.85

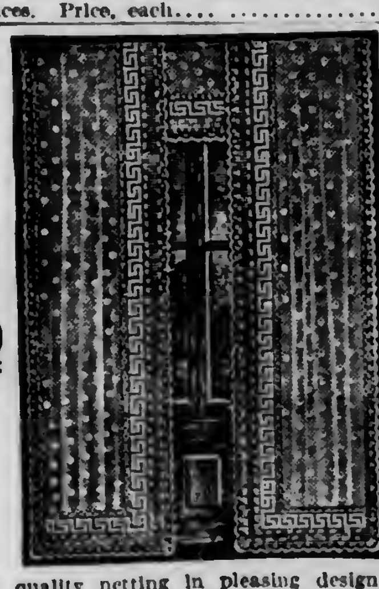
Only 7c

38A1915 Brassed Extension Sash Curtain Rod, tube form, 3/16-inch in diameter, with a solid inside rod giving it strength. Hook brackets with each rod. Extends from 22 to 40 inches. Shipping weight, about 3 ounces. Price, each.... .... 7c



Drapery Loops 10c *Pair*

38A1315 Cotton loops for draping lace, scrim and muslin curtains. In white or Arabian. State which you prefer when ordering. Shpg. wt., per pair, about 2⅓ ounces. Price, per pair............ 10c



Big Value **$1.50**

Excellent quality netting in pleasing design, simple but effective. Set consists of three pieces, two-side curtains and valance, and each piece is beaded and ready for the rod. Each curtain is 25 inches wide and 2¼ yards long; valance is 26 inches wide by 16 inches deep. Shpg. wt., about 1 pound.
38A1593 White. 38A1594 Arab.
Price, per set, either color............ $1.50

Valance Curtain $1.80

Valance style curtain of plain madras; 2-inch heading at top through which to pass rod. Size of each curtain, about 22 inches wide and 2¼ yards long. Valance is 22 inches wide and 13 inches deep. Shpg. wt., about 1½ lbs.
38A2023 Green.
38A2024 Rose.
38A2025 Brown.
Price, per set........................ $1.80

$2.98 Good Timekeeper

30A1314 8-day mantel clock in golden oak finish. Solid oak case 10 inches high and 11 inches wide. Has glass crystal in a plain brass sash. Strikes the hour and half hour on a cathedral gong. Five-inch ivoroide dial. Shipping weight, 12 lbs. Price, each..... $2.98

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Poultry

SUET FOR CHICKS

We have found fresh beef suet of considerable merit as a feed for young chicks. It is eagerly eaten by them, and has a very beneficial effect upon the bowels. It acts somewhat as a tonic and is an effective means of bringing back jaded appetites.

Two or three times a week is sufficiently often to feed the suet. The allowance of a lump of about a pound in size to each 100 chicks of the pound size, and proportionate amounts to those chicks of smaller or larger size will be found about right.

The best way to feed the suet is in the form of a large lump, hung up where the chicks can pick it at will. A good plan is to tie up the lump of suet in a sort of net of heavy twine and then hang it from the ceiling so the chicks can reach it. This net will prevent the chicks from dragging the suet about in the filth of the floor, and the cord will not injure the chicks' mouths. Wire nets frequently wound the chicks' mouths and cause canker. Another advantage is that the cord when empty can be thrown away, leaving nothing to clean.

Some prefer grinding the suet and mixing it with a moist mash. This can be followed with good results, the only advantage of feeding in lump form is the exercise the chicks are forced to take in securing the food. Then, too, this manner of feeding keeps the chicks busy for an hour or so which is very desirable.—K.

Just Arrived, but Ready to go "Over the Top"

HANDLING CHICKS AT NIGHT

Chicks should be allowed to harden for forty-eight hours or a little longer before being transferred from incubator to brooder, and should be transferred at night. They will then not wander away from the heat and become chilled as they are liable to do in daylight. By morning they will have become accustomed to the location of the source of heat so that they will return to it involuntarily when cold.

A convenient form of box, six inches deep, thirty inches long and fifteen inches wide, is used by the Pennsylvania State College for the transfer from incubator to brooder. One-inch-mesh wire is tacked to the bottom of the box and a blanket topped by a piece of burlap is placed over the wire. The burlap is changed for every new incubator lot of chicks, to avoid spreading disease from one lot to another. One hundred and fifty chicks may be comfortably transferred in this box. The blanket is so arranged that it will cover the chicks snugly during the journey.

POULTRY NOTES

The cement floor in a poultry house is easy to clean and disinfect but it is cold and likely to be very damp unless properly constructed. A cement foundation is necessary to keep out rats but many farmers who have time to change the earth once or twice each year will find that a dirt floor in their poultry house will be very satisfactory.

When placing colony houses in the range they should be raised about one foot from the ground to keep rats from gnawing into them. Two cement blocks at each corner of the house will be satisfactory and if these are not available place the houses on boulders so there will be plenty of room for a good rat dog to get under the houses both night and day.

There is a danger in poisoning rats in the poultry yard or on the range for if the dead bodies are not found and burned they may be eaten by the birds and this will cause the serious trouble known as limberneck. Any farm animals that die should be burned or deeply buried as many cases of sickness in the farm flock can be traced to some dead animal on the farm which has been discovered by the hens.

Many cases of sickness in flocks have been caused by salvage wheat which in reality has been spoiled wheat. In feeding salvage wheat the greatest care is necessary to prevent mouldy or sour feed from being used. There is nothing that will cause sick birds and stop egg production quicker than feeding spoiled grain.

Many hens are injured each year by stepping on boards covered with nails, pieces of barbed wire or sharp glass or by flying against the sides of the houses when frightened. Squeezing in between boxes and boards or crawling under buildings where they cannot back out also causes occasional losses. Everything that can be done to prevent such losses helps to increase the yearly profit on the flock and it is the many little details that go to make a poultry business profitable.

When spraying the orchard a good drenching of lime-sulphur may be used to disinfect the poultry house.

It is a sloppy job and the eyes should be protected with goggles but it pays as the lime-sulphur is sure death to mites and lice.

Grow crops in the poultry yards and on the range whenever it is possible as this is one of the best methods of preventing disease as well as earning two profits from the same land. Oats and rye are excellent for seeding down poultry yards and corn will furnish fine shade. Laying hens will often do very well if they are allowed to range over a clover meadow with some shade such as an orchard growing on one side of the clover.

Additional buildings on the poultry farm should be planned in the spring and constructed as early as possible in the summer. This gives them an opportunity to dry out before the damp rainy days of fall. Frequently the farmer does not build an additional poultry house until fall when he sees how many pullets have lived thru the summer and if these pullets are placed in a newly built house which is damp it may lead to severe colds.

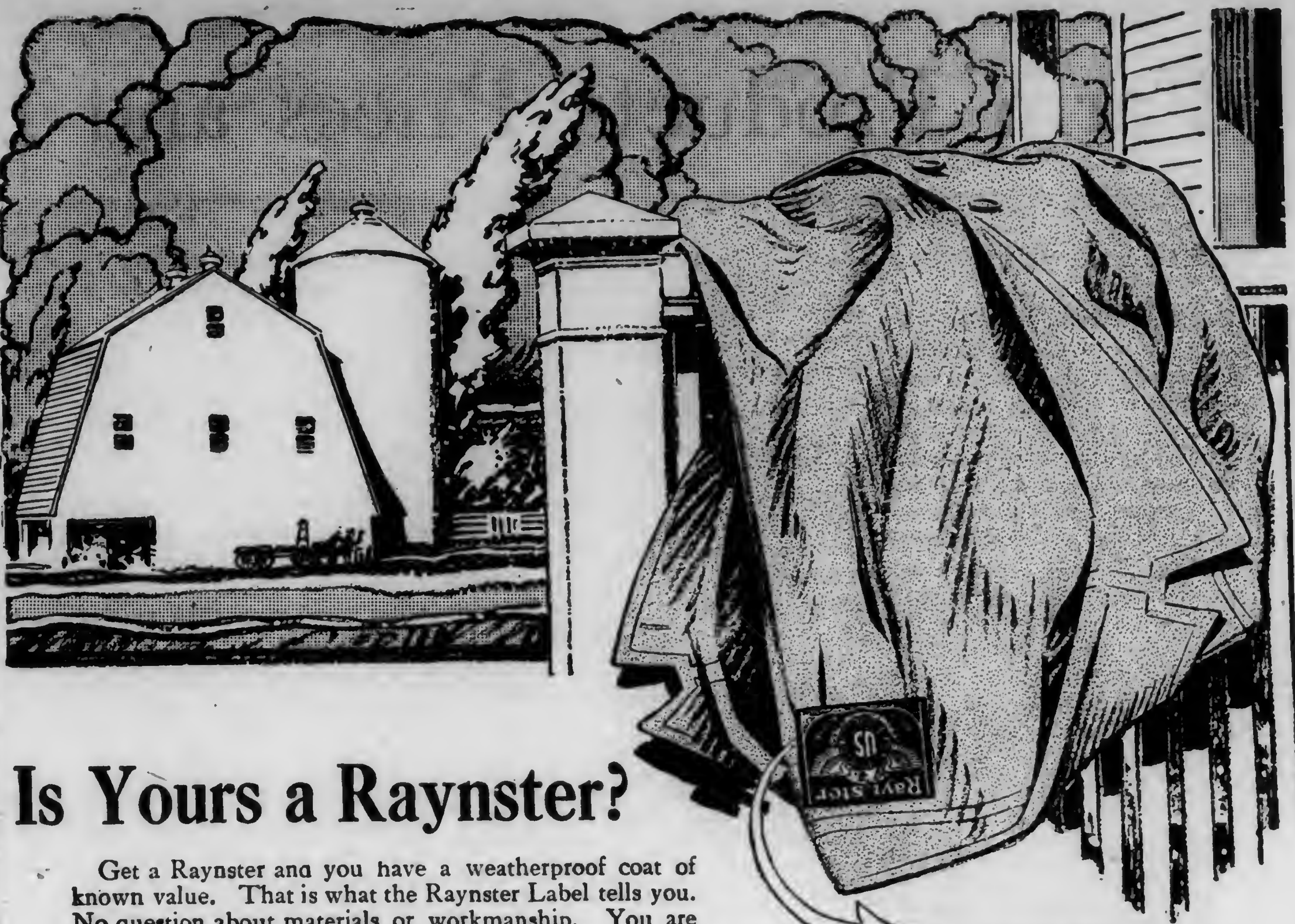
Do not neglect the poultry during the summer for the farm crops and do not neglect the crops for the poultry. Neither method will pay. In the spring careful plans should be made for the summer work and only enough work should be laid out for the labor that is available. Neglected work never pays and the general farmer cannot specialize in poultry because he will not have the time.

Do not let the incubator chicks wander far from the hovers until they have learned the source of the heat or they may huddle in corners of the brooder house and become chilled. The chick that is once severely chilled never seems to thrive but the chicks that learn how to protect themselves can run out on the cold frozen ground and scratch when they are a week old without any danger.

Some poultrymen use fireless brooders with success by keeping them in warm rooms. It may be a risk for the amateur to try fireless brooding on a large scale as it has many dangers. The majority of practical poultrymen seem to like the heated brooder much better and it certainly seems like a safer proposition. Fireless brooding is easiest and safest after the warm days of spring and very risky in cold weather because of the amount of huddling which the chicks will have to do to keep warm.

Next year grain will be high in price according to the present predictions and the farmer who can raise all of his poultry feed will find more enjoyment in the poultry business. Good hens can pay better for grain than the elevator man and there should be no poor hens on the farm

Watch the hens range in the spring and you will obtain a good idea of the kind of food they will need in the winter in order to lay eggs. The hen likes green food and eats large quantities of it. Then she chases a bug and picks up a weed seed or a worm. She balances her own ration in the same manner that the poultryman must strive to do in the winter when the hen is practically helpless.—R. G. Kirby, Mich.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Farm Products Prices and Prospects

WEEKLY MARKET REPORT

Potato Markets Irregular

While potatoes made sharp recovery from recent low points in some potato producing sections, not all advances have been maintained and some primary markets, especially the western, have sagged to new low points. Shippers paid growers for No. 1 whites, bulk, trackside, at Presque Isle, Me., $1.21@1.36 per 100 lbs., closing at the top, 40 cents above low point two weeks ago. Rochester, N. Y., quoted $1.10@1.15. Grand Rapids, Mich., held about steady at 80c; Waupaca, Wis., 65@70c, advancing 10@15c. Best sacked round white stock ranged $1.90@2 in New York and in Boston, $1.50@1.70 sacked.

Apples in Firm Position

Choice barrel stock was in limited supply and prices held firm for fruit still in good condition. Sales in large distributing markets ranged for "A" 2½-inch Baldwins $5@5.50 in New York and Cincinnati, $5@6 in Philadelphia and $5.50@6 in Chicago. Choice New York Spys sold at $5.75@6 in Cincinnati. Roxbury Russets "A" 2½-inch ranged $4.75@5.50 in eastern markets; choice Southern Winesaps sold mostly $5.50@6 and Newtowns $5@6.50 per barrel.

Onions in Heavy Supply

The first cars of new onions from Texas were reported ready to move and crop is estimated at 7,000 cars or more. Shortage of cars complicates the situation, and a force of government agents is in Texas helping solve the problem. In 1915 there were planted 9,343 acres and shipments were 4,607 cars. Western Yellow stock sold to jobbers in the larger markets lower at 50c@$1.25 per 100 lbs. sacked, New York Yellow, 75c to $1.25 and northern Red 50c@$1.25. General price range declined 25@50 cents.

Beans Fairly Steady

Much of the best stock has been bought for army and navy use. Remaining supplies show a considerable percentage of weather damage. Growers are still receiving $12 per 100 lbs., bulk, for pea, medium, and yellow eye, at country elevators. Michigan navys were quoted $12.50@12.95 per 100 lbs., f.o.b. Grand Rapids compared with $13.50 per 100 lbs. three weeks ago. New York pea beans ranged to jobbers, $13.50@14.

Cabbage Dragging

Most northern cabbage is in poor condition and was sold by growers lower at $10@12.50 per ton in bulk, and at $20 by shippers f.o.b. Rochester, N. Y. New York and Wisconsin stock ranged mainly $20@30 per ton to jobbers in leading eastern and central markets, and $1.50@2.50 per 100 lbs. with slow demand. Southern cabbage is coming at over 300 cars per week compared with less than 100 cars of old cabbage. Southern producers are receiving 45@50c per 1½ bushel hamper for pointed cabbage.

Southern Vegetables

Most lines of Florida, Louisiana and Texas vegetables have been tending lower the past three weeks. Acreage appears large in the more southern sections but planting in districts further north is reported checked by labor shortage.

Tomato Values Weaken

Florida tomatoes, fancy, weakened to a range of $3@3.50 per six-basket carrier at shipping stations and ranged slightly weaker in northern markets at $4@5.25. Movement of carlots is increasing, Florida starting 172 cars the past week compared with 71 last week and 40 the week before.

SOUTHERN TRUCK CROPS

Virginia

Eastern Shore.—From reports received from this section it appears that wet weather is retarding planting of potatoes and other truck. Reporters state that due to scarcity of labor and difficulty in securing fertilizer and seed, the potato acreage will be cut from 50 to 60 percent and the crop delayed.

Norfolk Section.—The same conditions as noted for Eastern Shore prevail in this section also. Some reporters say the crop will be from 10 days to two weeks late. Fall plantings of kale and spinach were severely injured by the past winter, but early spring plantings are now up and in good condition.

Florida

Dry weather and delayed transportation have been two factors which have affected the Florida cabbage crop to a considerable extent. Many cars of cabbage have arrived in northern markets in poor condition, prices have been unsatisfactory, and the harvesting and marketing of cabbage is being delayed at present in hopes of better transportation and better prices. In the section from Fort Myers to Lakeland a large percentage of cabbage is under irrigation and this is in fine condition. The unirrigated crop needs rain.

PORK EXPORTS TO ALLIES

In a recent summary showing exports of food from the United States to the Allies, the Food Administration announces these amounts of pork products shipped during the period July 1, 1914 to January 1, 1918.

Product	Pounds
Bacon	1,216,877,289
Hams and shoulders	775,847,401
Lard	721,250,233
Lard compound	60,411,037
Fresh pork	57,971,544
Pickled pork	40,878,787

The total pork products sent to the Allies during the past three and one-half years amount to nearly 3,000,000,000 pounds, or 30 pounds for every person in the United States. These figures show the important part American farmers have played thus far in furnishing food stamina for the Allied nations.

CEREAL EXPORTS TO ALLIES

Between July 1, 1914 and January 1, 1918 the United States exported to the Allies the following amounts of the principal cereals. The figures also include flour and meal in terms of the grain required for making them:

Crop	Bushels
Wheat	500,672,417
Oats	320,424,074
Corn	54,351,739
Rye	11,615,139

The total considerably exceeds 880,000,000 bushels and shows the important extent to which American farmers have reinforced the Allied cause. Yet wheat is needed by the Allies more now than at any time since the war began.

DON'T MAKE THE SAME MISTAKE TWICE

Under the above heading the Evening Public Ledger, Philadelphia, published the following editorial. If all city papers gave the same honest and intelligent consideration to the economic side of agriculture as is expressed here, much foolish criticism and misplaced censure would be avoided.

"There seems to be a difference of opinion in Washington whether the President or Congress should fix prices for wheat. The President says $2.20 a bushel is a proper minimum price. The Senate is considering $2.50. It is estimated that the difference of thirty cents a bushel means a difference of $400,000,000 in the amount which the consumers will have to pay for flour this year.

"This is a considerable sum, regarded from the financial point of view. But the real problem to be solved is the way to secure the production of enough wheat to supply us and our allies. The money-saving part of it is incidental. It is possible to figure out the saving of billions with the price of wheat fixed at $1. But dollar wheat on paper and none in the market would feed no one. The consumer is ready to pay whatever price is necessary to get wheat, just as last winter he was willing to pay any price in order to get coal.

"The coal price-fixing experiment was not successful enough to encourage the public to have much confidence in any Government price-fixing. We were told in the summer that the Government would see to it that there was coal enough for every one and that it would be available at a price lower than that which prevailed in August. But there was neither enough coal nor low prices. Somebody blundered, and it is pretty well known who it was.

"An attempt was made to encourage production by disregarding the well-known economic laws. The veriest tyro in political economy knows that the way to increase production is to increase the price offered. If the Government had kept its hands off coal prices and had allowed the ordinary law of supply and demand to work with freedom as to prices there would have been coal enough. It might have cost more than the householders had to pay last winter, but they would have had the coal.

"No one knows today whether $2.30 or $2.50 is a proper minimum price for wheat next fall. It is impossible for any one to find out in advance what is the exactly fair price, for no one can tell what the crop will be and no one can know what the cost of harvesting it will be. We do not know how many farm laborers will be available for work in the fields four or five months from now, nor what wages they will demand—and can get.

"If price-fixing is to accomplish what is hoped for it regulation of prices can not stop with the wheat crop. It must extend to farm labor and fertilizers as well, or the farmers will find themselves hampered and constricted, as the railroads have been under a policy of Government regulation of freight rates, restricting income, followed by a popular demand for increase of wages, increasing outgo. We assume that the men in Washington do not wish to bring any such catastrophe to pass. To avoid it they will doubtless profit by the mistakes made in dealing with coal. At any rate, the people who must eat wheat hope they will do so."

CROP CONDITIONS IN ARGENTINE, SOUTH AMERICA

Weather continues seasonable and wheat is moving to ports freely. Corn gathering continues and development of the late maize continues rapid under favorable conditions; prospects are very good.

Wheat.—Offerings from holders are becoming larger and movement is progressing, with stocks at ports showing good increases. Clearances have decreased somewhat from the previous week, but port stocks have increased 740,000 bushels.

Corn.—Harvesting is in full swing and early samples are of excellent quality. The late planted crop is reported in very favorable condition. Old reserves are meagre and port stocks are steadily decreasing, and now only amount to 1,200,000 bushels, most of which is owned by export interests. Offerings of new crop are gradually increasing.

Oats.—Reserves large, but demand remains unimportant, as tonnage is being devoted to shipment of more essential cereals.

Meats.—Reserves are liberal. Shipments are well maintained, with the major portion of these going to the Continent.

REDUCED AUSTRALIAN WHEAT CROP

Estimated production of wheat in Australia for the season 1917-18 is 114,020,000 bushels as compared with last season's actual yield of 152,565,000. This is a decrease of 38,545,000 bushels, or 25 percent, and is the result of reduced acreage combined with unfavorable conditions.

The maximum price has been fixed at 95 cents per bushel. Available shipping has been too small to cope with the supplies ready for shipment and the new season has been entered upon with stacks of old wheat on hand amounting to 100,000,000 bushels.

Grange

AMONG THE GRANGES

Lycoming County, Pa. — The annual meeting of the Lycoming County Pomona Grange held at Montgomery on Thursday, March 7th, was largely attended and of interest to all, the addresses and discussions centering about the war and the present conditions brought on by the war.

The sessions were held in the Methodist Church. The morning meeting was devoted to business reports from the subordinate granges. The financial committee of the pomona, in charge of the state convention, reported all bills paid and general satisfaction expressed by state officials, as to the entertainment of the grange in this city.

State Deputy Geist was present and conducted the exercises in connection with the installation of officers. The ladies of the Methodist Church served dinner and supper. The resolutions presented touched on the war and the relations of the farmer to food supply. The pomona went on record as encouraging the farmer to do his best in raising food and to conserve in accordance with the request of Food Administrators.

Two addresses were given in the afternoon, one by Prof. McBride, of State College, on "Girls' and Boys' Clubs", and the other by Miss Martha Robinson on "Community Life". Prof. McBride referred to the beginning of these clubs for the young people, declaring that there was an unused power in the country, and that the clubs were formed for the purpose of giving the boys and girls something to do, and some interest in farm life.

Miss Robinson, in her address on "Community Life", made a special plea that we look after the girl and boy on the farm today, for they need our care as never before.

J. A. Riley, of South Williamsport, gave a short talk on poultry raising, emphasizing the need of good breeding, good feeding and good housing conditions. The afternoon session then closed, the next meeting of this pomona to be in June at Captain John Brady Grange.—D.

BLAME IT ON THE DRYS

The shortage of sugar has been accounted for. The wets say that prohibition having deprived the drunkard of his accustomed booze, leaves him with an appetite for candy and other sweet things, hence the shortage of sugar What an arraignment for the drys! This alone should defeat prohibition. But it is not all of the truth:

There is an insufficient supply of meat. For this the drys are to blame. Men who used to eat free lunch in the saloon, while their families subsisted on bread and water, are now going boldly into butcher shops and buying perfectly good meat, taking it home to their families. Strafe the drys for this.

There is a shortage of shoes and clothing. The sinister policy of the drys again is to blame. Men who swapped good shoes for booze and who waved a flag of distress thru the west gable end of a ragged pair of trousers and let their children go barefoot—these same men are going about with brazen effrontery and buying up clothing and shoes for themselves and their families, as if they had a right to. Perhaps they have. Blame it on the drys.

Where is this thing going to end? The drys are ruining one industry after another. Wastrels are now hoarding up money in banks instead of spending it over bars. There are bright lights in thousands of homes where the bright lights have been put out in saloons. There is more oak furniture in cottages since there are fewer mahogany-furnished barrooms. Policemen are likely to lose their jobs for lack of people to arrest. Jailers, physicians, nurses, overseers of the poor, keepers of insane asylums, will in time feel the pinch of prohibition.

There is no way to completely offset this drain of prosperity, but as a partial remedy, a makeshift, may I humbly suggest that for the good of our country, all the wets take their turn at going without sugar and other good things as a matter of national economy and as a protest against the blindness and greed of the drys, who have put sugar instead of poison into the drunkard's cup, and who have made every day Christmas in the ex-drunkard's home? — Elmer Lynn Williams.

"GO TO WORK OR GO TO JAIL"

The above is the suggestion of Assistant Secretary of Agriculture Clarence Ousley. He says the best way to draft farm labor is to amend the vagrancy law so as to include within its terms every able-bodied man who does not do six days' work each week as a rule.

In many states of the union, either by state legislation or local action, steps have been taken or plans are under way to require idle men to go to work. Farmers know they can not increase their food-crop production unless they have more labor. Town people know they will suffer inconvenience or want and have to pay very high prices for the reduced rations they are able to buy, if the farmers do not increase production. And both farmers and town people know, as all the world knows, that we can not win the war unless we have ample food. So, states and counties and towns the country over are determining that this is not a time, nor theirs a place, for the toleration of idlers.

For instance, a few weeks ago the sheriff of Grayson County, Texas, a thickly populated and highly productive agricultural section, announced in the local papers and by posted proclamations that "every man must go to work." This sheriff did not wait for the state legislature to enact new laws. The old ones are strong enough to suit him. "Go to work or go to jail," he said crisply. "No man will be allowed to loaf around this town or in this county, because we are at a point where every man's labor is seriously needed for the farms."

What about your county? What about your state? Are you requiring loafers to become producers? While your sons fight in France will you permit husky men to remain idle in your community, when you know their labor will produce food without which we can not win the war—without which your son fights in vain?

Take the chill out of early rising

At arising time—the coldest, chilliest part of the day—the whole house can be as balmy as a June day with IDEAL heating

Why don't you enjoy this wonderful comfort, which is so economical? Spend part of your improvement money for IDEAL heating. It is the safest and most beneficial investment you can make. It means as much to you as a bumper crop at high prices.

For any farm house

AMERICAN RADIATORS & IDEAL BOILERS

Whether your house has a cellar or water pressure does not matter, because IDEAL Boilers and AMERICAN Radiators can be put in any house, anywhere, with splendid results. Thousands of farmers today enjoy the labor-saving, cleanly and economical IDEAL heating.

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AMERICAN RADIATOR Co.

IDEAL Boiler fuel pots mix the air and coal gases as in a modern gas mantle, extracting ALL the heat from the fuel.

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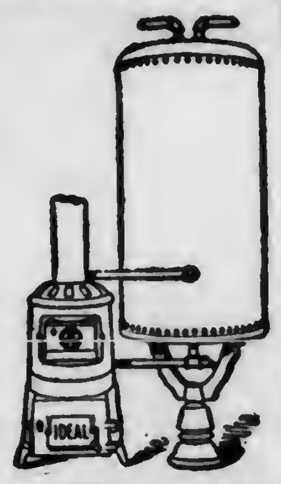
IDEAL heating for the home is thoroughly explained and illustrated in this complete catalog which we want you to read. An inquiry places you under no obligation to buy—but get the facts from this book.



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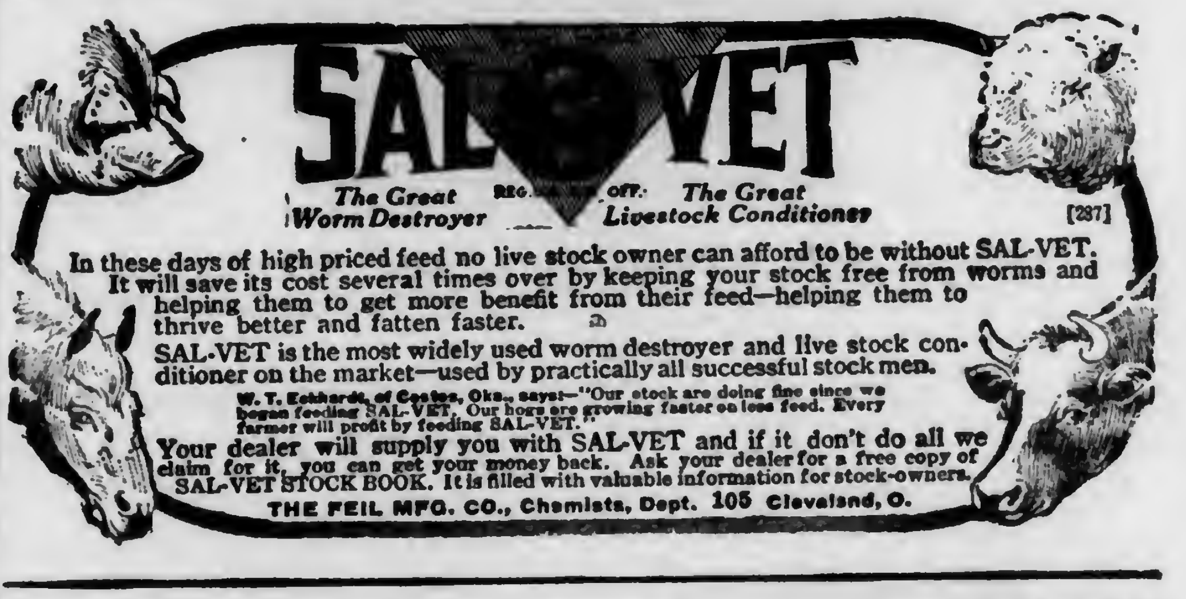

[237]

In these days of high priced feed no live stock owner can afford to be without SAL-VET. It will save its cost several times over by keeping your stock free from worms and helping them to get more benefit from their feed—helping them to thrive better and fatten faster.

SAL-VET is the most widely used worm destroyer and live stock conditioner on the market—used by practically all successful stock men.

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ASK YOUR DEALER BERG'S ANIMAL

Bone & Meat Fertilizer BOOKLET BERG CO. PHILA.

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Its high ammonia content, 4 per cent, produces better root growth. Its 17 per cent phosphoric acid makes it ideal for earlier, bigger yields on potatoes, corn and vegetables of all sorts.

Results prove it. Order through your dealer now—get the biggest yield from your acreage, at least cost.

The Berg Co., Ontario St. near Delaware River, Philadelphia

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Are your stock in prime condition?

Spring work is on! Thousands of farmers have proved that stock do better and pay better when given Dr. LeGear's Stock Powders. A spendid spring tonic for all animals—expelling the worms, purifying the blood, regulating the bowels and toning up the whole digestive system.

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The cheapest roofing is not necessarily the lowest priced. It costs no more to put on a good roofing than a poor one, and the additional years of wear more than pay for the difference in price. Pennies spent now on the roofing will be dollars saved later on repairs.

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Grow hogs for profit. Help them develop flesh and bone to carry the extra pounds. Feed them

Martin's Tankage

Pure and clean. Our materials are carefully sorted and cooked thoroughly under high steam pressure. Thoroughly ground and excellently screened. We guarantee every pound to be satisfactory or money refunded at once. Write for feeding directions and prices.

D. B. MARTIN CO., 36th & Grays Ferry, Philadelphia, Pa.
"I EAT MARTIN'S HOG TANKAGE"
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DANDY SEWING SET

For your soldier boy in camp or at the front; for your sailor lad patrolling the high seas; send them one of these splendid sewing sets. These youths, taken from their daily walks of life and thrown together in a new and strange environment, with no women folks to sew for them, will appreciate this fully equipped sewing outfit.

Send us two yearly subscriptions at 75 cents each or 10 trial subscriptions for 3 months at 10 cents each and we will send you one of these sewing outfits by prepaid post.

PENNSYLVANIA FARMER
261 S. Third St., Phila., Pa.

Hogs on Small Farms

Profit in Well-Developed Plans

The farmer on a farm of from 60 to 80 acres must follow rather definite plans and well-established methods if he wishes to realize profit from his hogs. Without a definite end in view, he is liable to lose out in the end, and with present-day prices it does not pay to lose out; pork is too valuable property.

We operate two farms, one of 60 acres and one of 87 acres. We manage to keep two brood sows on the 60-acre farm and usually three on the farm on which my father lives. These are carried along with the other farm work included in general farming. We breed so as to have them farrow in April and October. As a rule we keep O. I. C. or Duroc Jersey stock, keeping them purebred as near as possible without specializing. We do not sell for breeding purposes, for we find it impossible on account of the work connected with the other crops. That would mean specializing, and often when selling hogs eligible to be registered, extra work would be incurred. We do not condemn specializing, but it is out of our line.

At $16 per Cwt. There is Joy in Seeing 'Em Grow

From the time the sows are bred we aim to feed them well, for sows that are pregnant require something to live on and later rear successful litters of pigs. There are farmers in our section who advocate keeping sows rather thin at farrowing time, for fear of disastrous results when they farrow. This is nonsense. Starve a cow or a brood mare and see what kind of a calf or colt will result. Why does not the same reasoning hold out for brood sows? By using some corn and a one to ten tankage and middlings ration, the latter two in slop form, together with pure water, we can keep the sows in a condition that they will farrow healthy litters of pigs. We have never experienced any evil results from having sows too fat.

At Farrowing Time

Many advocate leaving sows alone when farrowing. Others advocate staying by them, so as to save the pigs. In certain cases it is not necessary to be present, but the question is when to be present. The safest rule is to watch sows pretty closely at farrowing time. With the last four litters I raised, I was not present, nor was a single pig lost at birth, altho several died of thumps later on. But several years ago I had a young sow to farrow late in fall, when it was quite cold. Had I not been on hand I am certain that not a pig would have been saved, for the sow would not own them for some time. It is seldom necessary to watch an old sow so closely, especially one that has proved herself trustworthy. But it pays to be on hand when young sows farrow, for it is difficult to tell what traits they may develop or what they may do.

A week or so before farrowing we gradually change rations so as to include more middlings and less corn and tankage. We continue this until the pigs are several weeks old, when we gradually resume the former rations. When the pigs are about six weeks old they are weaned. By this time they have learned to eat with the sows. No trouble is experienced in getting the pigs to learn to eat, for we have low feeding troughs which allow them easy access. We follow the ration suggested until they are ready to finish out for the market, when corn and cob meal gets them in shape for the buyers. This method is strictly followed for fall pigs, and usually for spring pigs, except that pastures are available for the spring pigs. The hog lot furnishes grass for pasture. Sometimes we turn them into fall clover. We have harvested some rye and vetch by letting in the hogs. We find these pasture periods greatly help to reduce feeding costs. During August, September and October we get good results by allowing the hogs to harvest the windfall and waste apples, the orchard being so fenced as to allow pasturing by hogs.

Portable Houses

For shelter we use the portable A-house. These are very well adapted for farrowing purposes, and can be taken to any field or lot. We have built our A-houses so as to allow hauling from place to place with team. The floor is placed upon runners similar to a sled. Many build them without floors but we oppose this. It may serve well enough during summer, but during other periods floors are needed to keep them dry. Wet or damp sleeping quarters are not conducive to the health of hogs. A hinge front is placed to the A-house, with a smaller opening in the hinge front for the hogs to enter. For cleaning and entering we lower the hinged door, and also for ventilating. By allowing the front to face the sun we give the interior sunshine without an opening in roof. Lowering the hinge doors admits sunlight.

We have occasionally sold the pigs at weaning time, but even with feed high in price, we find it pays better to buy feed and feed them until they are ready for market. Several years ago we sold eight of a litter of ten nice pigs at $3 apiece. The purchaser of half of them reported his success to us. Paying $12 for the pigs, he had them on pasture, I think, and bought about $10 worth of feed, and then realized around $40 profit on his purchase. This was before hogs were over $10 per cwt., and before the raise in prices of feed. This profit, doubled, might have been ours had we risked buying feed.

The Returns

By following the methods outlined we manage to raise from 40 to 60 head per year from the two farms combined. These are disposed of mostly on the market, a few sold when weaned and those butchered for home consumption. By raising hogs as a sideline or as an adjunct to general farming much profit is realized per year. As a rule hogs are marketed at from 150 to 200 pounds live weight. Only a little figuring is required to find the value of pork marketed from two small farms.

Farmers living on and operating farms of 160 to 200 acres can realize greater profits per year because more brood sows can be kept, and more feed can be raised on the farm. A neighbor, during the year preceding the raise in prices of hogs and feed, realized over $500 from hogs off a farm of about 100 acres with methods similar to ours. At present prices it is another story. Since the raise in prices I have seen his tenant deliver two loads netting over $400 in one day. Other farmers of this section have delivered loads of hogs netting from $400 to $600. One farmer who specializes in purebreds sold over $1,000 worth of hogs during 1917 from a farm of 44 acres. These are a few examples of what is possible with hogs on small farms.—Warner E. Farver, Holmes Co., O.

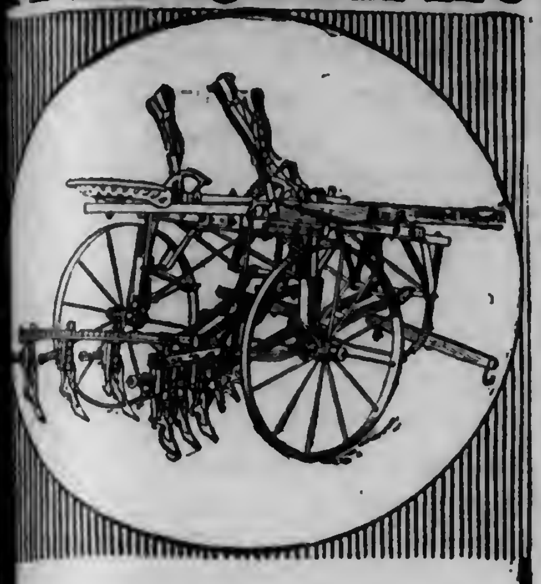
ENTHUSIATIC OVER SHEEP

Last year Victor R. Edelman, Northampton Co., Pa., bought a number of western yearling ewes being distributed by the More-Sheep—More Wool Association. Writing recently about his sheep, Mr. Edelman says:

My sheep are in A No. 1 condition—the best investment I think I ever made. They are doing fine on sweet clover silage, but think I will mix it with corn next year. They are clean, hearty, extra good flesh and heavy fleece. I got my first lamb yesterday and expect about ten more this coming week. In fact, about two-thirds will come in with lambs in the course of two weeks.

I have not lost any sheep since shipment, altho this summer I was at times a little disgusted with them. They seemed to have a cold and were too wet at the nose. I did not know what was the matter with them as we brought them to shelter for rains, and kept them in the barn every night, on account of their being afraid of dogs. We put them in my two cow stables which were too close for them, and which made them sweat, and the morning draught caused them to get a cold. Now I have a good shed for them, separate from everything else.

The national attitude of mind is the only one that will win the war. Forget the local annoyances and back the government.


FARQUHAR

The Easy Handling Cultivator

The 1916 Farquhar Rider is a real general-purpose Cultivator. Both the wheels and shovels are adjustable as desired, and by loosening a single hook the machine can be guided from the foot stirrups. Our unique manner of attaching the beams gives us absolutely rigid gangs, a feature that insures minute accuracy and adds materially to the life of the cultivator. There are three types of openers to select from: Pin Hoe, Spring Hoe and Single Disc—6, 8 or 10 to the machine. Double-Row Corn Planter and Tobacco Hoer are attachable and can be easily added at any time.

In addition to the regular Farquhar Riding Cultivator, we manufacture the Farquhar High Wheel Rider, the Farquhar Parallel Beam Walker and the Pennsylvania Walker. Our aim is to supply machines suitable for every possible condition of soil. Farquhar Cultivators are all up to the minute in every detail, right both as to quality and price. Send us a postal signifying your interest, and we'll mail instructive new Cultivator Booklet and give you the name and address of the nearest Farquhar dealer.

A. B. FARQUHAR CO., Ltd.
Box [illegible], York, Penna.

We also manufacture Engines and Boilers, Tractors, Saw Mills, Threshers, Potato Diggers, Grain Drills, Hydraulic Presses.

Sturges Milk Cans

Guaranteed Capacity

Easy to Keep Clean

MADE of highest grade steel plate—tinned and retinned after rivet holes are punched. Pure solder sweated into all inside seams, making surface smooth as glass. Sanitary to the finest degree. Guaranteed capacity—each Sturges Can is built to measure. Saves work in shipping—insures accuracy.

Sturges Cans are built with the experience of 50 years in making milk cans. Ask your dealer for them. Write for catalog No. 43.

Sturges & Burn Mfg. Co.
New York Office
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POULTRY INDUSTRY REVOLUTIONIZED

Marvel Colony Brooder $17.50

Coal Burning, Self Regulating. Super-Automatic Check Control. Exclusive Patent Features.

The MARVEL is guaranteed to perform all we claim for it without any disappointment. Big saving in operating expense. Will brood 50 to 1000 chicks for, less than 6 cents per day. Cuts initial cost for equipment to less than one half. Perfect satisfaction guaranteed or money back in 30 days. Send for Circular on "Scientific Brooding."

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[illegible] Chestnut St., Phila., Pa.

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Pictures of livestock are not only interesting to keep, but frequently such pictures serve to close a sale; pictures have frequently settled line fence disputes; pictures showing the growth of trees, the effects of this and that kind of pruning often prove invaluable to the orchardist.

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OLD BAGS BOUGHT

Wanted—Responsible agents in every County to buy burlap bags from Farmers in their locality. Splendid opportunity for hustlers. Gathering these bags will require only part of your time. Write for particulars.

DAVID N. KNOTT'S SONS
104 Callowhill St., Phila., Pa

FULL VALUE PAID

FREE

Wonderful Money Saving Fence Book. 150 Styles Gates and Barb Wire. DIRECT FROM FACTORY—FREIGHT PAID. All heavy DOUBLE GALVANIZED WIRES. 21c per rod up. Get free Book and Sample to test.

Brown Fence & Wire Co., Dept. 321 Cleveland, O.
BROWN FENCE
150 Styles
21¢ Per Rod Up

Single Comb White Leghorns Exclusively

BARRON STRAIN 3000 breeders on free farm range, inoculated and free from lice. Special bred for Winter eggs with records up to 274 eggs. Now booking orders for eggs and baby chicks, April & May delivery, capacity 10 to 12,000 chicks weekly. Order well in advance this year, as demand will exceed the supply. My book, Profits in Poultry Keeping Solved, free with all 1[illegible] orders. Circulars Free. Edgar Briggs, Box 9[illegible], Pleasant Valley, N.Y.

Greystone Berkshires

Spring pigs either sex, pairs and trios not akin from large mature sows of best breeding. Twenty-five sows in our herd. Write for circular giving further description and prices. It's free.
GREYSTONE FARM. Summersville, W. Va.

Cash for Old False Teeth

Don't matter if broken. I pay $2.00 to $15.00 per set; also cash for old gold, silver, platinum, dental gold, old gold jewelry. Will send cash by return mail. Will hold goods 10 days for sender's approval of my price. Mail to Mazer Tooth Specialty, 2007 S. 5th St., Phila., Pa.

FOR SALE

Ninty-seven acre farm in excellent condition together with farm tools, etc. near Easton, Pa. Excellent for dairying purposes or for raising crops; 8 room house, large barns and three silos. One-quarter in cash, remainder on mortgage at 5 1-2 percent.
ALFRED W. ANDREWS 55 John St. N. Y. City

HAY

HAY W. D. POWER & CO. 601 W. 33 St. New York are the largest handlers of commission hay in greater New York; if you have hay to dispose of communicate with them.

HAY

PERCHERON STALLION

No. 125175, for sale. Foaled April 19, 1916.
ELIZABETH FARMS, R. F. D.
Lititz, Lancaster Co., P

CASH FOR OLD FALSE TEETH

Worth up to $19.50 per set (broken or not). Also buy old gold jewelry, silver, platinum. Cash by return mail. Goods held subject to your approval of our price. United States Smelting Works, Office 603 Caswell Blk., Milwaukee, Wis.

Wanted at Once first class herdsman for pure bred Jersey herd. Also dairyman to assist in milking and [illegible] milk house work. Married or single, exempt from draft. Must have good references.
W. H. HAINES, Mgr. Dover, N. J.

365 Acre Farm in Buckingham Co., Va., 200 acres tillable. Ready to plant apple trees. 80 acre acorn orchard, fenced for hogs. 6,500 (half cash). 200 acres Central New York, $4000; 30 acres Connecticut, $3500; other smaller farms.
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Selby Service Satisfies Ship us your produce, poultry and eggs, Penna. Potatoes a specialty. Returns day goods are sold. Ask for our market letter.
SELBY PRODUCE CO., PHILADELPHIA

HAY Ship To The Old Reliable House Daniel McCaffrey's Sons 623-625 Wabash Bldg., Pittsburgh, Pa.

Binder Twine Granges, Farmers' Clubs get our price. Farmer agents wanted. Write us. Theo. Burt & Sons, Melrose, Ohio

White Indian Runner Ducks best laying stain, eggs for hatching 10c each. J. S. STAUFFER, R.F.D. No. 3 MYERSTOWN, PA.

Sweet Clover seed, special scarified, hulled and unhulled. *Circular and prices on request.* John A. Sheehan, R. 4, Falmouth, Ky.

Household

OLD DYE RECIPES

Pennsylvania Farmer readers may like to have some of these very old recipes which I am fortunate enough to have in my possession. Some of them are much more than 50 years old. They will color the number of pounds mentioned on white or light goods, but on colored goods it takes less dye. One must be careful to choose a dye color darker than the original color, and must also remember that the original color will help to decide the new color. For instance, if you attempt to color an article red which at present is blue, the two colors will combine and make purple; and yellow on a blue article will give a green shade. Woolens may be satisfactorily colored black no matter what the former color.

Clouded Yarn.—Our grandmothers used to make "clouded yarn" by taking a skein of yarn and just letting one end (3 or 4 inches) dip in the dye bath until it had darkened quite a bit, then they would lower it a little farther, and when that showed about the same color, they would lower it still farther, thus the first end dipped would be much the darkest and each section grew lighter until at the other end a few inches would be left uncolored, so that the yarn would shade, for example, from pure white and a light blue down to a deep dark blue, then grow lighter until back to white again. Other colors were used, but blue was the main stand-by.

Tied and Dyed Coloring.—In dyeing cloth they would tie small marbles or tiny stones by winding string tightly around several times close to the marble. The string would keep the dye from coloring the place covered by it, and produce white or light colored rings where the string was.

A Good Black Dye.—For a rich black, grandmother would take a large brass kettle big enough to hold 15 yards of goods, put in 7 or 8 gallons of soft rain water, and in this she would dissolve 4 oz. extract of logwood, 2 oz. blue vitriol, 1 oz. copperas, stirring it with a stick until entirely dissolved. Having wet her cloth thoroly in soft water she would put it into the dye kettle and let simmer slowly, stirring the goods around and lifting them up in the air on the stick, then poking down under the dye and lifting from another portion of the goods. This was her secret of even coloring—keeping the goods constantly on the move, so that the dye would not settle in spots, as it surely will if not stirred.

When the goods were dark enough, she would wash thoroly in strong soap suds two or three times, and rinse until the water was clear, then let drip partly dry, then press.

Non-Fading True Blue.—Per 1 lb. of rags or cloth pulverize together 1 oz. prussian blue, ½ oz. oxalic acid, and dissolve in hot water sufficient to cover the goods. Work the goods up and down and around in this dye until they are the desired shade. Then wring out and rinse thoroly in warm alum water. One can continue coloring as long as any color remains in the dye bath, but, of course, at the last it will be lighter shades of blue.

Drab Color with Tea.—For 5 lbs. goods tie in a thin muslin cloth ½ lb. cheapest green tea, and steep in a brass kettle, then add 2 tablespoons copperas, let dissolve and skim thoroly. Put in your goods and stir until colored enough, which will be in a few minutes. If not dark enough, steep some more tea and strain into the dye. This is a very cheap and very satisfactory dye for carpet rags.

Butternut Brown.—Steep but do not boil ½ bushel butternut shucks until the strength is out, strain, put in your goods, let steep one hour; take out and hang to drip and cool a while, then put back in the dye, steep ½ hour, drip and cool again. Now add to the dye 1 oz. copperas dissolved in water, stir in well, put in the goods again, and bring to a boil. If not dark enough add more copperas. One can make various shades of brown by varying the amounts of shucks and copperas.

Moss Brown.—The scaly moss from rocks and ledges makes a fast brown. Gather the moss and place in a brass kettle or tin dish, cover with cold water, put on the stove and boil 3 or 4 hours; skim out the moss, add the goods (wet, of course) and boil until you have the requisite color. One can seal these dyes and have on hand to use when needed.

Nankeen Color.—Fill a "five pail" brass kettle with small pieces of white birch bark and water, let steep (not boil) 24 hours, skim out the dark, wet the cloth in soap suds, put into the dye, stir well and when dark enough, take out and drip dry the bark, wet the cloth in soap suds,

Bright Red.—For 6 or 7 lbs. of carpet rags or goods soak 2½ lbs. redwood chips over night in a brass kettle. Next morning add ½ lb. powdered alum, and boil to extract the color from the chips. Put in the rags and boil, lifting and stirring often until bright enough. It makes a color nearly the same as the old-fashioned red flannel.

Goldenrod Yellow.—One can color yellow with goldenrod blossoms steeped up, and strained. Put in the goods, boil and move around the goods a few minutes, take out, add some dissolved alum, return and boil until bright enough. — Mrs. Cora Hamilton, Broome Co., N. Y.

RIBBON SWEATERS, HATS, ETC.

To Save the Wool for Soldiers

A new variety of silk sweater is being displayed. Women ought not to use the wool available in the country for sweaters for themselves, since such great numbers are needed for our boys in the trenches. One ingenious woman tried out an experiment. She had so successfully made a hat of No. 1 satin taffeta ribbon by knitting it on needles the same as with yarn that she decided to make a sweater the same way. It was made in purple and with sleeves. The waist was purled and had a white angora collar and balls on the lace at the neck. It required 900 yards of ribbon at 1 cent per yard. A sleeveless slip-on was next made which required but 650 yards of gold-colored ribbon, which cost her $6.50 at retail price for the ribbon; the average silk sweater on sale in the stores costs not less than $25.

No. 1½ ribbon makes a heavier garment than No. 1, but the light weights (which really are very much warmer than sweaters made of the silk yarn) are too warm unless the air is cool. Ribbon sweaters do not lose shape as easily as wool ones.

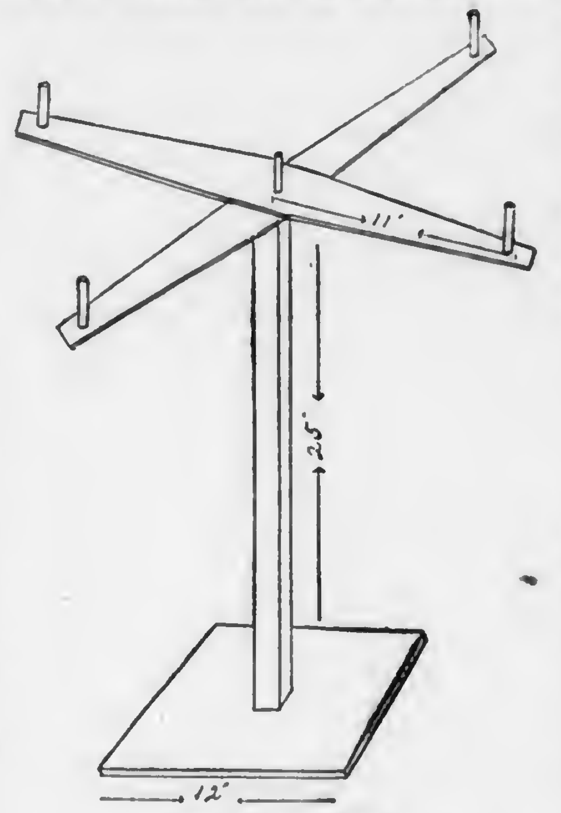
Crowns for hats, girdles, honeycomb belts, plain slippers and various other articles are made of ribbon, which is not as expensive as wool now. These are easily cleaned with gasoline. Cotton back No. 1 ribbon sells in most stores for 1 cent a yard; No. 1½ costs a little more. Pockets are crocheted on some and knitted on others. If the ribbon is crocheted, the garment will require more than when it is knitted. Large needles are used, wooden preferably, as they are not so pliable with the heavy garments.—Esther A. Cosse, Passaic Co., N. J.

SPRING HAT NOTES

Spring hats are very simple in design, and many worn last season may be made to look like the new ones with a little work which many women can do at home. Generally the first consideration is the color. At any of the drug stores you can procure for ten cents a bottle of dye of any color and a small brush to apply it. And it only requires ten minutes to apply the fresh color to your hat.

Shapes are small and pointed in all sorts of angles this spring. Some straight shapes may be bent to look like the new models if the edge is wired. This should be done before dyeing. Is the shape you had last season becoming to you? Do you like it especially well? Does it fit comfortably on your head? Then use modern methods of trimming and your hat will be in good style. If it does not set as it should, try turning back to front and bending it up on the left side at pointed angle. Or try to make one of the old-fashioned continentals. Study the new shapes, then try to make yours similar, but do not cut too much if you trim the edges. A quarter of an inch is a big piece, and it is hard to replace once it is off, and it may make a great deal of difference in becomingness. If you cut the brim, wire the edge and bind it with a piece of satin or velvet If your shape was uncomfortable on the head, sew a piece of cotton to the lining underneath and fill in the space that does not fit close to the head. This will make it stay on the head as well as touch evenly all around and feel more comfortable.

Many pressed shapes are seen, but combinations of silk and straw are popular. If the brim is too small, make one on a wire frame of silk, crepe or net to enlarge it. This wire frame may be purchased, made at home, or taken from an old hat. First cover with net of same color. Or if wires are not the same color, dye them with the dye. Crowns are of different color from brims in many cases.



Winding Reel

For trimming, bows of ribbon, rich feathers, quills of all co small sprays of flowers, butterfly b of narrow ribbon, wings of every cription are seen. Many of the ored mushroom shapes have only tied bow of ribbon at front or side, requiring 1½ yards of ribbon inches wide.

Bows are wired with what liners call "lace wire". It is but strong enough to hold the in place, without making it stiff ing when placed at any angle. the wide ribbons, flat ribbon wire used, which costs three cents a y

The amount of ribbon depends u the size of the hat, but remember t too much makes the hat look heavy. In some cases just one y is used, with wired ends instead loops. The ends make a chic effect.

The colors most popular now red, rose, browns, tan, grays, gre and the ever-popular navy. Red small amounts is combined with na Often the crown is red and the b blue, or there are pipings of red, bows of red, or quills, flowers, wi etc., and the hat blue. They very well with the military c and suits.—Esther A. Cosse, Pa County, N. J.

WINDING REEL

In these times when so much k ting is being done an old-fashio winding reel like our grandmoth used to use comes in handy. T accompanying drawing shows which is easily made. It consists a base holding a standard holdi two cross arms with wooden pins holding the skein of yarn.

The cross arms are of maple ⅝ an inch thick. They are 24 inc long and two inches wide at the mi dle, tapering to one and one-four inches at the ends. The pins are poplar four inches long and ab ⅝ of an inch in diameter. Th should be placed so that the outsi is eleven inches from the center. T gives the proper circumference hold the ordinary skein of ya tightly.

The standard is one and thr quarter inches square and 25 inch high with a pin driven in the upp part for the arms to revolve on. T base is a one-inch board 10 inch square.

This little reel makes it easy wind yarn quickly without tangli and also without the trouble stretching the skein between a ch and the bed post or requiring so one to hold it.—M. W. Lowry, Ga

MY FIRST GARDEN

When Mother and I found o selves alone last spring, the questi arose—should we have a garden, buy what was needed? Knowing t scarcity of foods of all kinds, a realizing that the scarcity of lab would not help matters, we voted favor of the garden. Having li most of my thirty-six years on farm, I should have known m about gardens, for we have alw had one, with plenty for oursel and some to spare. I knew enou about taking stuff out, but wha didn't know about putting it would make a longer story than t is going to be.

However, I studied the fa papers, and kept my ears open, a my eyes peeled at neighbors' g dens.

We had barnyard manure sp

on the piece, 200x30 feet, then plowed and cultivated it, which cost $2. Then the man said, "It is up to you. An hour a day spent on it ought to be sufficient". I spent the hour a day without question, and some days worked all day—stopping for meals, for which I had a regular farmers' appetite; and frequent drinks of water from my thermos bottle which I kept under a tree nearby. A seat under the same tree afforded rest and a chance to view my labors.

My tools consisted of a hand cultivator, wheelbarrow and five-tined fork for stones; hoe, rake, crow-bar for making the holes for bean poles; and cord for keeping rows straight.

I planted a portion at a time—a hundred feet of peas, beans and corn at intervals of two to three weeks, so that when one crop was disposed of the next was ready. We had peas late in October, and corn November 6. I sowed beets pretty thick and thinned them to use as greens. Sent to the Dept. of Agri. for bulletins on vegetables, fruit and meats, and followed directions exactly. So far we have lost but one can, a can of vegetable soup, and that was the fault of the can.

The actual cost of the garden, not including two dozen tomato and one dozen cabbage plants, was $3.59, but $25 wouldn't buy the cans of beet greens, corn, tomatoes, beans, and beets; pickles of all kinds; bottles of chili sauce, relish and tomato juice ready for soup; besides onions, carrots packed in sand; cans of dried parsley and soup flavoring, and carrots. Then from two rows the length of the garden we harvested 19½ pounds of white soup beans.

The bulletin said to slice the carrots and dry them, but I thinned the rows of the little tender carrots, washed thoroly, put them thru the meat grinder, and spread the pulp on platters. Dried, it looks more like crumbles than carrots, but tastes fine.

Aside from early peas, with which I did not have very good luck, the garden was a success in every way.

I have parsnips and salsify that can be dug any time, parsley covered with sod; and our lettuce, sowed late and transplanted to the hotbed and covered with leaves, is good eating when green stuff is scarce and high.

I dressed for my work, in overalls, heavy-soled shoes and broad-brimmed hat.

We had a regular epidemic of cutworms in our village, and no one who hasn't been thru it knows how it feels to go out early mornings to find lima beans, tomatoes and string beans cut off an inch above the ground. I found that they dislike lime, and hated worse to be disturbed, so just before dark each evening I dug around the plants with a knife and found plenty ready for their night's marauding.—H. M. K., Morris Co., N. J.

POTATO CHOWDER

Ingredients.—6 potatoes, 1 slice of salt pork, 1 onion, 1 pint milk, 1 tablespoon flour, 1 tablespoon drippings, 1 teaspoon chopped parsley, 1 teaspoon salt, ½ teaspoon pepper.

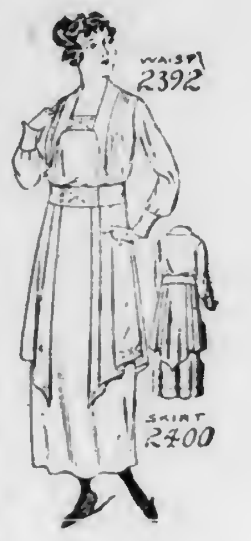
Cut potatoes into dice and pork into small pieces: fry the pork and onion in a pan until brown, put potatoes, onions and meat into a pot: add a pint of water with seasonings: simmer half an hour; make a white sauce of the milk, flour and drippings; add to the cooked potatoes. Let all boil a few minutes and serve hot.

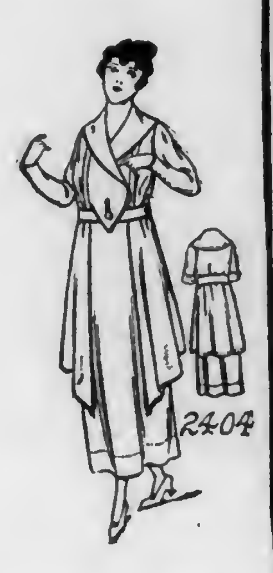
PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

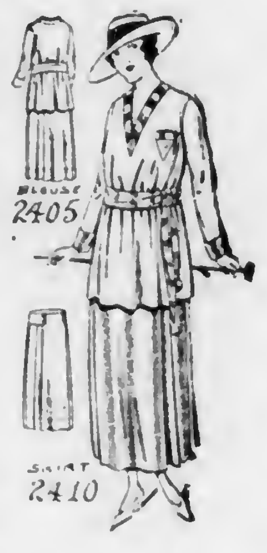
Suggestion for New Gown. — Waist, 2392; Skirt, 2400. — The waist pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt is also cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. The entire dress will require 8⅝ yards of 36-inch material for a medium size. The skirt portion measures about 1¾ yards at the foot. This design calls for two separate patterns. Price, 10 cents each.

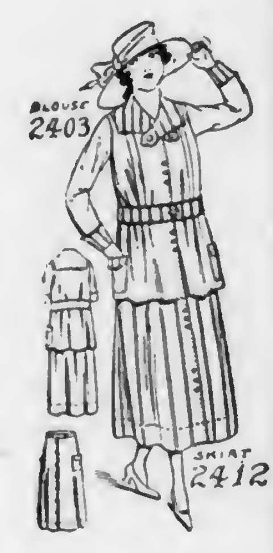
2404.—Pretty Gown.—The tunic may be omitted. The skirt is cut on straight and comfortable lines. The sleeve may be finished in wrist or elbow length. The pattern is cut in 6 sizes: 34, 36, 38, 40, 42 and 44-inch bust measure. Size 38 requires 6½ yards of 44-inch material. Price, 10 cents.





A Good Outing Dress. — Blouse, 2405; Skirt, 2410.—The blouse slips over the head. The skirt is cut on prevailing straight lines; the plaits adding width, without detracting from the narrow effect It is a comfortable model and very stylish. The blouse pattern 2405 is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. It will require 6⅜ yards of 44-inch material for the entire dress. The skirt measures about 2⅜ yards at the foot, with plaits drawn out. This design calls for two separate patterns, which cost 10 cents each.





A Middy Suit. — Blouse, 2403; Skirt, 2412.—The skirt is a three-piece model. The blouse may be finished with sleeves in wrist or elbow length. The pattern for the blouse and for the skirt is cut in 3 sizes: 16, 18 and 20 years. Size 16 will require 6¾ yards of 36-inch material. The skirt measures 1¾ yards at the foot. This design calls for two separate patterns which cost 10 cents each.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 1, 1918.

The condition of the potato market is showing quite a little improvement over last week's slow and draggy market. Altho the supplies are a little more plentiful, the demand and movement are much more active and higher prices are prevailing. At this writing Pennsylvania and New York State potatoes are selling generally at $1.75 to $1.90 per cwt., with extra fancy Pennsylvanias drawing $2. New Jersey potatoes continue in fair supply and are moving steadily at 60 to 70 cents per ⅝-bushel basket. Only a few Eastern Shore barrels are arriving and these sell mostly at $2 to $2.50 for primes, with No. 2 stock at $1.25 to $1.50.

Sweet potatoes are not quite so plentiful and under an active demand the market is firm and higher. New Jersey primes are selling from $1 to $1.35, with second and medium stock from 60 to 90 cents. Eastern Shores in bushel hampers have brought from $1.50 to $1.85, with No. 2's and mediums from 75 cents to $1.10.

Vegetables

The dried bean market continues practically without change from day to day. Demand is generally light, and while occasional sales are reported, no large quantity of stock is being moved. Marrows are selling from $15 to $15.25, pea and medium, $13.50 to $14, red kidneys, $13.75 to $14. Asparagus is showing no great change from last week's prices. Very few straight cars have been in the market, most of the supplies being express shipments. Collossal is now selling from $6 to $9 per dozen, fancy, $4 to $6; extra, $3 to $4.50; culls, $2 to $3.50. South Carolina has furnished the bulk of the supply up to this time, but car lots from California are now rolling. Artichokes are meeting a fair demand at $3 to $4.50 per box. Under heavier supplies green and wax beans are lower in prices, but meeting a good demand at the decline. Green beans are now selling at $2 to $3.50 per hamper, and wax from $2 to $3.25 per hamper. New beets are in light supply and firm at 6 to 8 cents per bunch. Old beets on the other hand are moving very hard at 50 cents to $1 per barrel.

Old cabbage is quite a little higher than last week, the light supplies now drawing $35 to $38 per ton. Most of the stock is poor and needs trimming. New cabbage is also much higher than last week, prices now range from $1.75 to $2 per hamper generally, with some extra fancy as high as $2.25. Old carrots are plentiful and weak, with quality mostly poor. Sales are made from 75 cents to $1.50 per barrel. Cauliflower is quite plentiful and the quality is showing very wide range. Best is selling at $1.50 per crate; poor at $1.25, very poor from 25 cents to $1. Celery is a little higher than last week's report. Florida stock is selling generally from $1.25 to $1.75 per crate, with Pennsylvania drawing from 8 to 12 cents per bunch. There has been quite a decline in cucumbers and under the increased supplies, sales are now ranging from $3 to $4.50 per crate. Egg plants show practically no change from last week, the range of prices being generally from $2 to $4 per crate. With supplies increasing, however, the general tone of the market is easier and lower prices are expected. Pennsylvania and New Jersey horse radish is in fair supply and demand slow with prices showing a decline, best now selling at $6 per barrel, with poorer grades as low as $3. With comparatively light supplies of kale, the market has been strong and active and prices are fully 75 cents a barrel higher than last week. Prices are now ranging from $1.75 to $2. Lettuce is firm and active when fancy, best selling at $3 per hamper, but most of the supplies are poor and selling generally from $1.75 per hamper. California Iceberg is selling generally from $2.25 to $3 per box, with some poor stock selling from $1 to $2.

The onion market continues dull, draggy, slow and weak, with best stock selling at 75 cents to $1. Poor and sprouted stock sells at 25 to 50 cents per cwt. Onion sets are in light supply and Pennsylvania and New Jersey stock are active at $4 to $5.50 per bushel. Parsnips are ruling about steady at $1.50 to $2 per barrel. Fancy peas are scarce and bringing good prices, but poor are moving slowly. Fancy Telephones are drawing from $6.50 to 7 per drum. Parsley is a little firmer, selling at $3 to $5 per barrel. Peppers are showing very little change from last week, but as the supplies are increasing the tendency of the market is lower. Sales are now ranging from $2 to $4, mostly at $3 to $3.50. Radishes are in light supply and drawing high prices. South Carolina hampers are selling at $2.50 and Mississippi long reds $7 to $9 per barrel. Scullions are in good demand at $1 to $1.25 per 100, while shallots are selling at $6 to $6.50 per barrel. Spinach is in quite liberal supply and the market lower, best selling at $1.75 to $2 per barrel, with some poor at $1.50. Tomatoes are also more plentiful and the market continues to ease off. The quality is showing a wide range, many green and spotted arriving which are moving slowly at the lower range of prices, while hard ripe stock is in good demand at the outside prices. Fancy 144-size are now selling all the way from $3 to $4.25 per crate, with choice 180-size drawing from $2.50 to $4. The culls, crooks, splits and gems are selling from $1.50 to $2.50 per crate. Rutabagas are dull and weak and for the most part poor in quality. Best are only selling at 75 to 90 cents per cwt., with some poor pithy selling at low as 25 to 50 cents. Turnip greens from Maryland and Delaware points are selling from 50 cents to $1.50 per hamper as to quality. Watercress is moving slowly at 1 to 2½ cents per bunch.

Fruits

The apple market is firm and active on red fruit. Greenings are showing more or less scald and consequently sell at lower prices. Range of values about as follows: Baldwins, $3.50 to $6; extra fancy, $6.50; Ben Davis, $3 to $4.50; Black Bens, $3.50 to $4.75; Ganos, $3 to $4.25; Greeninga, $3 to $5.50; Winesaps, $3.50 to $6; Hubbardsons, $3 to $4; York Imperials, $3 to $5. Unclassified, mixed common varieties, $2.50 to $3.50. Most of the offerings this week have been box apples and these are moving freely at good prices. Winesaps are selling freely at $2 to $3.50; Spitz, $2 to $2.50; Newtown Pippins, $1.50 to $2.25; Pearmain, $2 to $2.25; Ark Black, $1.50 to $2.50; Ben Davis, $1.50 to $2.25. Strawberries continue in light supply and commanding big prices. At this writing best berries are selling at 35 to 38 cents with some poor at 30 cents, while some in very poor condition are as low as 25 cents. Supplies are expected to increase, however, and lower prices will in all probability soon prevail.

Poultry

There is very little change to note in the live poultry market. Supplies are light, demand active and the market firm at quotations with now and then a few sales of extra fancy stock a little higher. Soft meated young roosters are now selling at 38 to 43 cents; staggy young roosters, 32 to 36 cents; old roosters, 30 to 34 cents; ducks, 38 to 43 cents; geese, 38 to 43 cents; guineas, $1.25 to $1.50 per pair; pigeons, 35 to 50 cents per pair.

Eggs

The egg market has gradually eased off since our last report. Supplies have been more plentiful, but at the same time there has been a strong consuming demand which has cleaned up the market from day to day. Nearby current receipts are selling at 35½ cents; firsts, 36½ cents; Western firsts, 35½ cents; Western extra firsts, 36½ cents and southern, 33½ to 34½ cents per dozen.

PITTSBURGH PRODUCE

Pittsburgh, Pa., April 1, 1918.

The local markets are only moderately active on seasonable goods. Demand is fair and the supply is ample to meet all requirements. Potatoes are firm at quotations but the early future none too promising. Onions are lower and dull with heavy receipt. Root crops slow sale at lower prices. New southern stuff is meeting with fair demand.

Potatoes, car lots, $1.30 to 1.50 cwt; sweets, $1.75@2 hamper. Onions yellow, 75c @$1 per 100-lb. bag; do., white, 75c@$1. Cabbage, $25@30 ton. Parsnips, 45@50c bu. Rutabagas, $1.50@2 bbl. Turnips, 50@60c bu. Carrots, 50@60c bu. Lettuce, $1@1.25 hamper. Celery, $1.25@2 crate. Tomatoes, $3.50@4 crate. Radishes, 20@25c bch. Beets, 50@60c doz. bunches; asparagus, $3@3.50 box; cucumbers, $1.25@2 doz; rhubarb, 60@65c bundle. Apples, $4@6 bbl; $2@2.75 box. Strawberries, 25@30c qt.

Dressed Poultry.—There was a fair Easter movement at steady prices on all grades of dressed poultry. Little fresh-killed stuff moving.

Hens, 34@40c lb; springers, 35@40c; broilers, 42c; roosters, 32c; ducks, 38@40c; turkeys, 38@43c.

Dairy Products.—Butter made an advance of one-half cent a pound over the first of last week. Eggs are also higher and firm enough to indicate a steady market. Elgin prints, 46½@47c; Elgin tubs, 45½@46c; Ohio and Pennsylvania dairy, 41½@42½c; cooking butter, 33½@34½c; New York cheese, 28½@29c; do., Ohio, 26½@27c. selected eggs, 38@39c; eggs at mark, 37@38c.

Hay and Grain.—Grains hold steady but hay and straw show a decline. No. 2 yellow ear corn, $2@2.07 bu; No. 3 yellow shelled, $1.90@1.92. No. 2 white oats, $1.02½@1.03; No. 3 do., $1.01@1.01½: standard oats, $1.02@1.02½ bu; No. 1 timothy hay, $31@31.50 ton; No. 2 do., $28.50@29.50. No. 1 clover hay, $30@32; No. 2 do., $29@30. No. 1 mixed hay, $31.50@32 ton. No. 1 light mixed, $28.50@29.50. Rye straw, $29@30. Oat straw, $17.50@18. Wheat straw, $17.50@18.

YORK PRODUCE MARKET

York, Pa., April 1, 1918.

Eggs.—33@35c dozen.

Butter.—Country, 45@48c lb; separator, 48@50c lb. Milk, 10c quart.

Poultry.—Roosters, 23@35c lb; dressed, 75c@$1.75 each.

Vegetables.—Potatoes, 10@15c ½ pk; 75c@$1 per bushel; cabbage, 10@17c hd; lettuce, 5@10c hd; beets, 5c bch; radishes, 6c bch; onions, 5@7c bch; 10c bx; lima beans, 35@40c qt; soup beans, 30@34c qt; celery, 5@10c bch; turnips, 20@25c ½ pk; corn meal, 10@12c qt.

Fruits.—Apples, 10@30c ½ pk.

Country Butchering.—Sausage, 30@34c lb; smoked, 32@36c lb; backbone, 25@28c lb; spare-ribs 32c lb; tenderloin, 45c. lb; steak, 32@36c lb; pudding, 25@28c lb; lard, 32c lb; hams, 42@45c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, $1.15; rye, $1.85; bran, $2.30 cwt; middlings, $3 cwt.

Wholesale Grain Market.—Wheat, $2.12@2.15; corn, $1.72; rye, $1.70; oats, $1; bran, $38@42 per ton; middlings, $50@54 per ton.

BALTIMORE PRODUCE

Baltimore, Md., April 1, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.25@1.50 cwt; do., New York, $1.25@1.50 cwt; Eastern Shore, $1.10@1.25 cwt. Sweet potatoes, yellow, $3.50 $4 bbl; $1.10@1.25 hamper. Asparagus, $3 @$3.50 crate. Beets, 3@6c bch. Cabbage, danish, $20@25 ton. Celery, New York, $1.50 @3.50 crate; do., native, 5@6c bunch. Lettuce, $1@2 basket. Onions, yellow, 75c@$1.25 per cwt; red, 75c@$1 per cwt. Tomatoes, $3@4.50 crate.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5.50; New York State, $4@6; do., No. 2, $3.50. Strawberries, 15@35c qt.

Butter.—Creamery, western, extras, 44@45c; firsts, 43@44c; pound prints, 46@47c; do., firsts, 44@45c. Nearby creamery, 41@42c; do., firsts, 40@41c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 34@35c; Eastern Shore and Virginia, 34@35c; Southerns, 33@34c. Duck eggs, 40c dozen.

Live Poultry. — Chickens 38@40c; do., rough, 28@30c; old roosters, 28@30c; ducks, 29@33c; turkeys, 30@35c.

Hay and Straw.—No. 1 timothy, $32.50; standard timothy, $31.50@32; No. 2 timothy, $31; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover, $30.50@31.50; No. 2 clover, $28.50@30. No. 3 do., $28@29. No. 1 straight rye straw, $23; No. 1 tangled, $20@21; wheat straw, $18@18.50; oats straw, $17@20.

LANCASTER PRODUCE

Lancaster, Pa., April 1, 1918.

One of the largest markets in local history this morning did a landslide business, and thousands of eggs for Easter were sold at 38 cents per dozen. Some farmers held out for forty cents, but sales at that price were few. Fresh vegetables ae beginning to box; lima beans, 20c pt; tomatoes, 30c box; appear in the local markets. Prices were generally held over fom last week.

Butter and Eggs.—Creamery butter, 50c lb; country butter, 58c. Fresh eggs, 38@40c per dozen.

Poultry.—Dressed old chickens, $1.25@1.50; dressed young chickens, $1.25; live chickens, $1.75@2 per pair, live old chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 15c bunch; spinach, 25c ½ pk; potatoes, 12@20c ½ pk; do., 80c@$1.10 per bushel; sweet potatoes, 25c ½ pk; dry onions, 10c bx; lima beans, 20c pt; tomatoes, 30c bx; new beans, 60c ½ pk; apples, 20@30c ½ pk.

Grain Market.—Wheat, $2.10 bu; chicken wheat, $2.10; ear corn, $1.60; rye, $2.10. Timothy hay, $29@30 per ton; mixed hay, $28@29; wheat straw, $18@19.

NEW YORK PRODUCE

New York City, April 1, 1918.

Best grades of butter ruling firm. Cheese market is still unsettled. High grade eggs steady. Dressed poultry is quiet while receipts of live fowls are small and bring good prices. Potatoes weak and lower. Apples steady.

Butter. — Creamery, extras (92 score), per pound, 43c; higher score, 43½@44c; thirds to firsts, 37@43c; state dairy, 35@41c, ladles, 31@35½c.

Cheese. — Colored specials, 24½@25½c. Daisies, 25@26c.

Eggs.—Fresh gathered extras, 39@40c; extra firsts, 37½@38½c; nearby white, fine to fancy, 41@42c; ordinary to good, 39@40c; browns, 39@40c.

Vegetables and Greens. — Beets, per bbl. $1@2. Onions, per 100-lb. bag, 25c@$1.25. Potatoes, Jersey, $1@1.75 per 100 lbs.; state and western, $1.60@2 per 100 lbs. Carrots, 75c@$2 per barrel.

Apples.—Winesap, $4@6; York Imperial, $3.50@5.50; King, $4@6; Baldwin, $3.50@5.50; Greening, $4@6.50; Northern Spy, $4@7.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 1, 1918.

Beef Cattle.—Steers and bulls sold fairly and ruled firm and higher, with supplies well under control. Cows were firmly held, but without quotable change. Calves were slightly firmer.

Steers, choice, $13@14.25; common to fair, $11.50@13; bulls, $8.50@11; extras higher; cows, fat, per lb., choice, 8½@10c; fair to good, per lb., 7@8½c; bologna cattle, choice, 5½@7c; common, 4@5c; calves, extra choice, $19.50@20; fair to good, $18@19; common, $15@17; Tennessee and southern, $9@17.

Sheep and Lambs.—There was a good outlet for the limited offerings of sheep and prices were advanced. Lambs also were firmer.

Sheep, wethers, extra, $14.50@15; good to choice, $11.50@13; medium, $9.50@11; common, $7.50@9; ewes, heavy, fat, $12.50@13.50. Lambs, choice, $19@19.25; do., medium, $17@18; inferior, $14.50@16.

Hogs.—The market was weaker under a light demand and freer offerings. Quotations for best western, $20.

City Dressed Stock.—The market ruled firm, with demand absorbing the limited offerings. Calves, sheep and lambs were higher.

Steers, 17@22c; heifers, 16@20c, cows, 13@19c; calves, 27½@28c, southern and barnyards, 20@22c; country dressed, 23@25c; sheep, 24@25c; do., extra, 25c; lambs, 29@30c; hogs, 25½c.

LANCASTER LIVE STOCK

Lancaster, Pa., April 1, 1918.

Cattle. — Receipts, 1,080 head, against 1,070 a week ago, market active; prices 15c to 25c higher; all cattle sold at close; good to choice steers, $12@14; medium to good, $10.50@11; common to medium, $9@9.75; good to choice heifers, $10.75@11.75; medium to good, $8.75@9.75; common to medium, $8@8.25; good to choice cows, $9.75@10.75; medium to good, $7@7.75; common to medium, $5.75@6.75; bologna and fair-flesh cows, $7@8.75; good to choice bulls, $10.75@11.75; medium to good, $8.50@9.25; common to medium, $8.10@8.40; bologna bulls, $8.75@9.75; good to choice stock bulls, $9.25@10; medium to good $8.50@9.10; common to medium $8.10@8.40.

Hogs.—Receipts, 640 head; market slow; prices, 25c to 40c lower; best grades, $18@18.50; roughs, $14@15.

BUFFALO LIVE STOCK

Buffalo, N. Y., April 1, 1918.

Cattle.—Receipts, 3,100; easier; prime steers, $13.50@14; shipping steers, $13@13.25; butchers, $10@12.50; yearlings, $11.50@13; heifers, $9@12; cows, $5@12.25; bulls, $7@10.75; stockers and feeders, $7.50@10.50; fresh cows and springers, $65@135.

Calves.—Receipts, 1,750; easier, $7@19.75.

Hogs.—Receipts, 13,200; heavy, strong; heavy, $17.50@18.15; mixed, $18.25@18.50; yorkers, $18.40@18.50; light yorkers, $17.75@18; pigs, $17.50@17.75; roughs, $16@16.25; stags, $13@14.

NEW YORK LIVE STOCK

New York City, April 1, 1918.

Beeves.—Receipts, 3,145; steady; steers, $10.25@14.35; bulls, $7.50@12.25; cows, $4.50@10.

Calves.—Receipts, 3,960; firm; veals, $17@21; culls, $12@16; little calves, $10@11.50.

Sheep and Lambs.—Receipts, 2,830; sheep nominal; lambs firm; unshorn lambs, $19.25@20.50.

Hogs.—Receipts, 8,285; easy; light to heavy, $18@18.50; pigs, $17.50@18; roughs, $17.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., April 1, 1918.

Baled Hay and Straw.—Receipts, 336 tons of hay and 1 car of straw. The hay market was quiet, with moderate but ample offerings at former rates. Straw sold slowly, but ruled steady.

Timothy hay, according to location—No. 1 large bales, $30@31; No. 1 small bales, $30@31; No. 2, $29@29.50. No. 3, $26@27; sample, $21@23; no grade, $17@19. Clover-mixed hay, high mixed, $28@29; No. 1 do., $24@27.50; No. 2 do., $24.50@25.50.

Straw.—No. 1 straight rye, $21@21.50; No. 2 do., $20@20.50; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1 wheat straw, $19@19.50; No. 2 do., $18@18.50; No. 1 oat straw, $19@19.50; No. 2 do., $18@18.50.

Corn.—Car lots, No 2 yellow, $1.92@1.93.

Oats.—No. 2 white, $1.06@1.06½.

NEW YORK HAY AND GRAIN

New York City, April 1, 1918.

Feed.—Offerings of feed in the local spot market were moderate on Saturday. For prompt Western shipment prices were unchanged, but there was no resale lots offered in transit, most of this surplus being taken earlier in the week. Demand was not urgent and consumers seemed to be satisfied to purchase as their requirements made it necessary. On the other hand, the fact that there is a liberal supply in transit which mills are trying to deliver naturally is against active dealings in spot circles. Quotations (prompt Western shipment): White corn bran, $54 per ton; rye middlings, $57 per ton; oat feed, $33.50 per ton.

Hay and Straw.—Market has a firmer tone at 33d street and at Brooklyn E. D. Terminal shed. Outside track delivery points gradually cleaning up and rule firmer, tho prices prevailing there still well below terminal shed values.

Hay.—No. 1 large or small bales, $29@31; No. 2, $26@28; light clover, mixed, $26@28. Rye straw, $21@28 per ton.

Corn.—No. 3 yellow, $1.97½.

Oats.—No. 2 white, $1.06½@1.07½.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., April 1, 1918.

Butter.—The market developed no important change. At the Produce Exchange 50 tubs extra creamery sold at 43½c, but subsequently 44c was paid on the street and there were no later offerings below this figure. Prints were well cleaned up and steady.

Western, fresh, solid-packed creamery, extra, 44c; higher-scoring goods, 45@46c; extra firsts, 43c; firsts, 42@42½c; seconds, 39@41c; sweet creamery, extra, 45c; under grades, 40@44c; nearby prints, fancy, 48c; do., average extra, 45@47c; firsts, 43@44c; seconds, 40@42c; special brands jobbing at 49@51c.

Receipts as compiled by the Bureau of Markets 1958 tubs of butter and 6734 cases of eggs.

NEW YORK MILK MARKET

New York City, April 1, 1918.

There is a considerable surplus of milk. The Milk Commission has decided not to accede to the request of the Dairymen's League to reconsider the retail rate in order to reduce it. The Commission showed that the cost of delivering a quart of Grade B, 3.6 percent milk in a bottle was 13.848 cents made up of 5.8 cents to the producer, 7.3 cents for transportation and incidental expenses connected with pasteurization and bottling, and 0.738 cents for loss on surplus. The surplus loss, which is the difference between the price paid to the producer and the amount received for the milk in the form of butter or cheese, was based on an estimate of an 11-percent surplus for April. This was the proportion of surplus last April. The surplus in 1917 for May was 14 percent; for June, 24.2 percent and for July, 23 percent. The Commission pointed out that the distributors had been losers owing to the burden of surplus carried in the winter months just closed and that they should have some opportunity to make a little profit. Apparently this profit will be less than one-fifth of a cent a quart on bottled Grade B milk, as the retail rate is 14 cents. So-called loose milk, which comprises 55 percent of the New York supply, is sold at 4 cents a quart less, it was also pointed out by the Commission.

The Commission rates for April to the producer of Grade B in the first district are $2.50 a hundred for 3 percent milk; $2.74, or approximately 5.8 cents a quart for 3.6 percent; and $2.90 for 4 percent. Receipts of milk and cream in 40-quart cans for week ending March 30 were as follows:

Railroad	Milk	Cream
Erie	36,187	2,456
Susquehanna	6,373	18
West Shore	10,225	1,010
Lackawanna	61,750	1,110
N. Y. Central (long haul)	124,900	1,883
Ontario	37,032	3,258
Lehigh Valley	46,084	654
New Haven	5,794	13
Pennsylvania	10,750	210
Other sources	6,720	195
Totals	345,815	10,807
Same week last year	361,852	13,144

The Striker's Story

By Frank H. Spearman

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(Concluded from last week.)

Awkwardly as the rioters had maneuvered, they seemed then to be getting into better shape for mischief. They were quicker at expedients, and two intensely active leaders rose out of the crowds. Following the shouts of the pair, which we could just hear, a great body of the strikers dashed up the yard.

"By the Gods!" cried Andy Cameron at my elbow, "they're going for the oil-house!"

Before the words were out we could hear the dull stroke of the picks sinking into the cleated doors. Buckets were passed in and out from the house tanks. Jacketed cans of turpentine and varnish were hustled down the line to men drunk with riot; in a moment twenty cars were ablaze. To top the frenzy they fired the oil-house itself. Destruction crazed the entire population of the bottoms. The burning cars threw the front of the big brick depot up into the sky. As the reflection struck back from the plate-glass windows, the mob split into two great waves, and one headed for the passenger depot. They crossed the coal spurs brandishing torches and sledges and bars. We could see them plain as block signals. Every implement that ever figured in a yard showed in their line, but their leader, a youngish fellow, swung a long, tapering stake. As the foremost Polack climbed up on the last string of flats that separated them from the depot, the storage tanks in the oil-house took fire. The roof jumped from the wall-plates like one vast trap-door, and the liquid yellow spurted flaming a hundred feet up into the black. A splitting yell greeted the burst, and the Polacks, with added fury, raced towards the long depot. I made out then the man with the club. It was Rucker.

The staff of the superintendent, and the force of despatchers, a handful of men all told, gathered at the upper windows and opened fire with revolvers. It was just enough to infuriate the rioters. And it appeared certain that the house would be burned under the defenders' feet, for the broad platform was bare from end to end. Not a ghost of a barricade, not a truck, not a shutter stood between the depot and the torch, and nobody thought of a man until Cameron with the quicker eyes cried:

"For God's sake! There's McTerza!"

Such as pay-day there he was, walking down the platform towards the depot, and humping alongside—Sinkers

I guess everybody in both camps swore. Like a man in his sleep he was walking right in the teeth of the Polacks. If we had tried ourselves to pit him it couldn't have been done cleaner. His friends, for McTerza had them, must have shivered—but that was just McTerza; to be where he shouldn't, when he shouldn't. Even had there not been more pressing matters, nobody could have figured out where the fellow had come from with his convoy, or where he was going. He was there; that was all—he was there.

The despatchers yelled at him from above. The cry echoed back short from a hundred Polack throats, and they sent a splitter; it was plain they were mad for blood. Even that cry didn't greatly faze the fellow, but in the clatter of it all he caught another cry — a cry sent straight to McTerza's ear, and stung. Rucker, leaping ahead and brandishing the truck-stake at the hated stutterer, yelled, "The scab!"

The Reading engineer halted like a baited bear.

Rucker's cry was enough—in that time and at that place it was enough. McTerza froze to the platform. There was more—and we knew it, all of us — between those two men than scab and brotherhood, strike and riot, flood or fire; there was a woman. We knew it so well there was hardly a flutter anywhere, I take it, when men saw McTerza stooping, grasp Sinkers, shove him towards the depot, slip like a snake out of his peajacket, and turn to front the whole blooming mob. There wasn't any fluttering, I take it—and not very much breathing; only the scab, never a tremendous big man, swelled bigger in the eyes then straining his way than any man in McCloud has ever swelled before or since.

Mobs are queer. A minute before it was the depot, now it was the scab—kill him.

The scab stood. Rucker stumbled across a rail in his fury, and went sprawling, but the scab stood. The line wavered like tumbleweeds. They didn't understand a man fronting forty. Then Ben Nicholson—I recognized his whiskers—began blazing at him with a pistol. Yet the scab stood and halted the Polack line. They hesitated, they stopped to yell; but the scab stood.

"Stone him!" shouted Ben Nicholson. McTerza backed warily across the platform. The Polacks wavered; the instinct of danger unsettled them. Mobs are queer. A single man will head them quicker than a hundred guns. There is nothing so dangerous as one man.

McTerza saw the inevitable, the steady circling that must get him at last, and as the missiles flew at him from a score of miners he crouched with the rage of a cornered rat, one eye always on Rucker.

"Come in, you coyote!" yelled McTerza tauntingly. "Come in!" he cried, catching up a coupling pin that struck him and hurling it wickedly at his nearest assailant. Rucker, swinging his club, ran straight at his enemy.

"Kill the scab!" he cried and a dozen bristling savages, taking his lead, closed on the Reading man like a fan. From the windows above, the railroad men popped with their pistols; they might as well have thrown fire-crackers. McTerza, with a cattish spring, leaped thru a rain of brickbats for Rucker.

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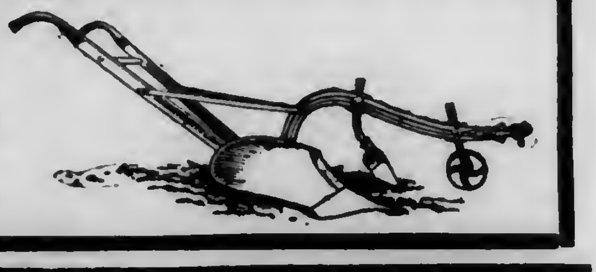

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key McTerza's head bobbed, and he went in and under on Rucker's jaw with his left hand. The man's head twisted with the terrific impact like a Chinese doll's. Down he went, McTerza, hungry, at his throat; and on top of McTerza the Polacks, with knives and hatchets and with Cossack barks, and they closed over him like water over a stone.

Nobody ever looked to see him pull out, yet he wormed his way thru them corkscrew fashion, while they hacked at one another, and sprang behind his assailants with Rucker's club. In his hands it cut thru guards and arms and knives like toothpicks. Rucker was smothering under toppling Polacks. But others ran in like rats. They fought McTerza from side to side of the platform. They charged him and flanked him—once they surrounded him—but his stanchion swung every way at once. Swarm as they would, they could not get a knife or a pick into him, and it looked as if he would clear the whole platform, when his dancing eye caught a rioter at the baggage room door mercilessly clubbing poor little Sinkers. The boy lay in a pitiful heap no better than a dying mouse. McTerza, cutting his way thru the circle about him, made a swath straight for the kid, and before the brute over him could run he brought the truck-stake with a full-arm sweep flat across his back. The man's spine doubled like a jack-knife, and he sunk wriggling. McTerza made but one pass at him; he never got up again. Catching Sinkers on his free arm, the Reading man ran along the depot front, pulling him at his side and pounding at the doors. But every door was barred, and none dared open. He was clean outside the breastworks, and as he trotted warily along, dragging the insensible boy, they cursed and chased and struck him like a hunted dog.

At the upper end of the depot stands a huge ice-box. McTerza, dodging in the hail that followed him, wheeling to strike with a single arm when the savages closed too thick, reached the recess, and throwing Sinkers in behind, turned at bay on his enemies.

With his clothes torn nearly off, his shirt streaming ribbons from his arms, daubed with dirt and blood, the scab held the recess like a giant, and beat down the Polacks until the platform looked a slaughter pen. While his club still swung, old John Boxer's cannon boomed across the yard. Neighbor had run it out between his parallels, and turned it on the depot mob. It was the noise more than the execution that dismayed them. McTerza's fight had shaken the leaders, and as the blacksmiths dragged their gun up again, shotted with nothing more than an Indian yell, McTerza's assailants gave way. In that instant he disappeared thru the narrow passage at his back, and under the shadow behind the depot made his way along the big building and up Main Street to the short order house. Almost unobserved he got to the side door, when Rucker's crowd, with Rucker again on his feet, spied him dragging Sinkers inside. They made a yell and a dash, but McTerza got the boy in and the door barred before they could reach it. They ran to the front, baffled. The house was dark and the curtains drawn. Their clamor brought Mrs. Mullenix, half dead with fright, to the door. She recognized Nicholson and Rucker, and appealed to them.

"Pray God, do you want to mob me, Ben Nicholson?" she sobbed, putting her head out fearfully.

"We want the scab that sneaked into the side door, Mrs. Mary!" roared Ben Nicholson. "Fire him out here."

"Sure there's no one here you want."

"We know all about that," cried Rucker breaking in. "We want the scab." He pushed her back and crowded into the door after her.

The room was dark, but the fright was too great for Mrs. Mullenix, and she cried to McTerza to leave her house for the love of God. Some one tore down the curtains; the glow of the burning yards lit the room, and out of the gloom, behind the lunch counter, almost at her elbow—a desperate sight, they told me—panting, blood-stained, and torn, rose McTerza. His fingers closed over the grip of the bread-knife on the shelf beside him.

"Who wants me?" he cried, leaning over his breastwork.

"Leave my house! For the love of God, leave it!" screamed Mrs. Mullenix, wringing her hands. The scab, knife in hand, leaped across the counter. Nicholson and Rucker bumped into each other at the suddenness of it, but before McTerza could spring again there was a cry behind.

"He sha'n't leave this house!" And Kate Mullenix, her face ablaze, strode forward. "He sha'n't leave this house!" she cried again, turning on her mother. "Leave this house, after he's just pulled your boy from under their cowardly clubs! Leave it for who? He sha'n't go out. Burn it over our heads!" she cried passionately, wheeling on the rioters. "When he goes we'll go with him. Its you that wants him, Curtis Rucker, is it? Come, get him, you coward! There he stands. Take him!"

Her voice rang like a fire-bell. Rucker, burnt by her words, would have thrown himself on McTerza, but Nicholson held him back. There never would have been but one issue if they had met then.

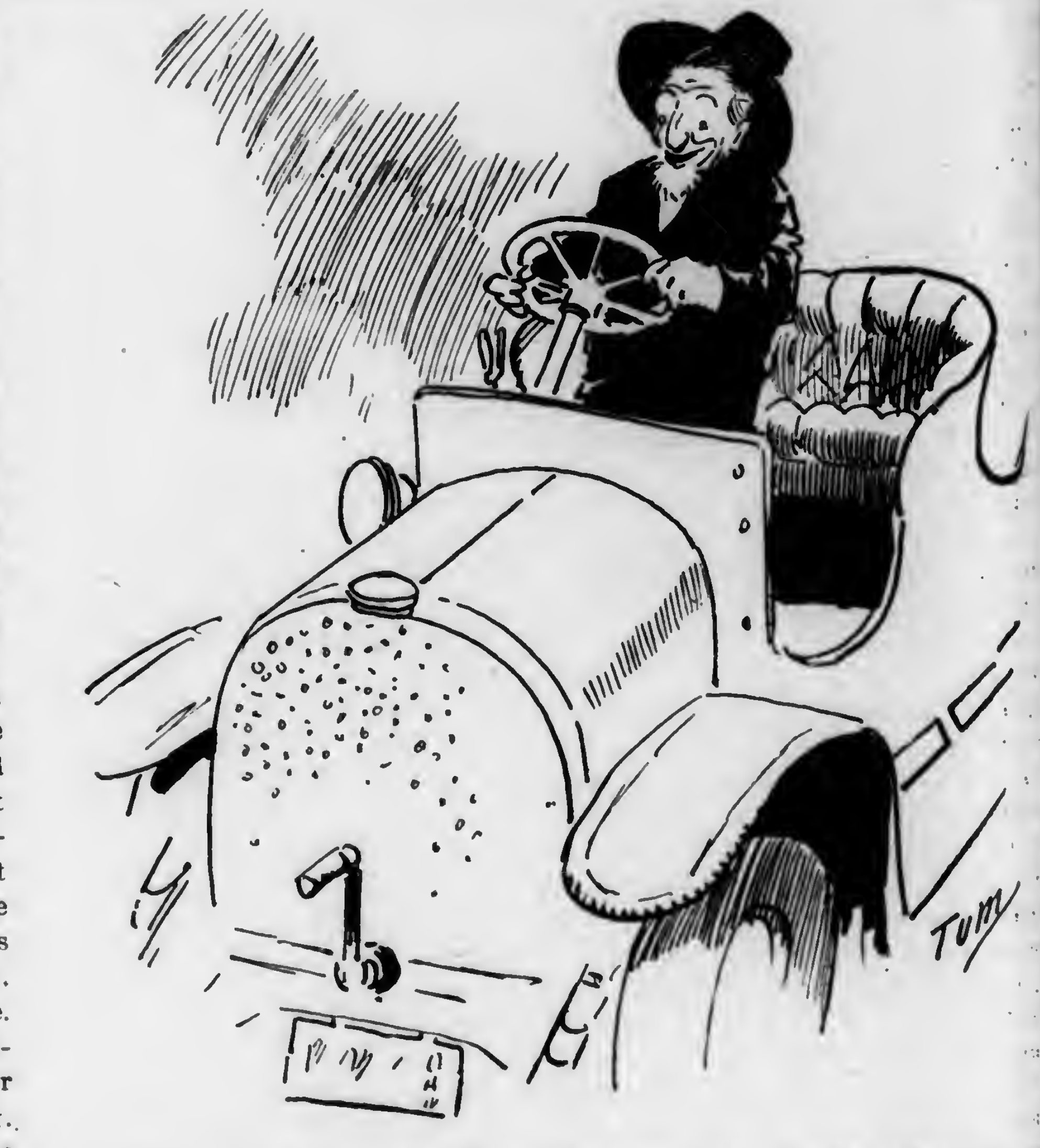
"Come away!" called the older man hoarsely. "Its not women we're after. She's an engineer's wife, Curt; this is her shanty. Come away, I say," and saying, he pushed Rucker and their coyote following out of the door ahead of him. Mrs. Mullenix and Kate sprang forward to lock the door. As they ran back, McTerza, spent with blood, dropped between them. So far as I can learn that is where the courtship began, right then and there—and as McTerza says, all along of Sinkers, for Sinkers was always Kate's favorite brother, as he is now McTerza's.

At least that is the beginning of the courtship as I got it. There was never any more trouble about serving the new men at the short order house that I ever heard; and after the rest of us got back to work we ate there side by side with them. McTerza got his coffee out of the hot tank, too, tho he always insisted on paying twenty-five cents a cup for it, even after he married Kate and had a kind of an interest in the business.

It was not until then that he made good his early threat. Sinkers being promoted for the toughness of his skull, thought he could hold up one end of the family himself, and McTerza expressed confidence in his ability to take care of the other; so, finally, and thru his persuasions, the short order house was closed forever. Its coffee today is like the McCloud riots, only a stirring memory.

As for McTerza, it is queer, yet he never stuttered after that night, not even at the marriage service; he claims the impediment was scared clean out of him. But that night made the reputation of McTerza a classic among the good men of McCloud. McCloud has, in truth, many good men, tho the head of the push is generally conceded to be the husband of royal Kate Mullenix—Johnnie McTerza.

THE END



Uncle Amos says: "Who's got a better right to use the public ro an' to enjoy some of the delights and comforts of travel than the farmer, I like to know. Yet, some folks seem to think that because a farmer can u an automobile to go to market, or take his family out in the evenin' th he's rollin' in wealth obtained by chargin' too much for his produc Seems strange, now, don't it, how the public howls when it sees al signs of prosperity out in the countr."

Morris and the Honorable Tim

By Myra Kelly

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the first day of school, after Christmas holidays, Teacher d herself surrounded by a howl- ob of little savages in which ad much difficulty in recogniz- er cherished First-Reader Class. re Belchatosky's face was so thed in smiles and foreign mat- s to be beyond identification; an Spiderwitz had placed all his in a solitary suspender and two ble buttons; Eva Kidansky had ly freed herself from restrain- ooks and eyes; Isidore Apple- had discarded shoe-laces; and Ashnewsky had bartered his necktie for a yard of "shoe- g" licorice.

s Bailey was greatly disheart- by this reversion to the original She delivered daily lectures on rushes, hair-ribbons, shoe pol- ins, buttons, elastic, and other s to grace. Her talks on soap ater became almost personal in and her insistence on a close between such garments as were t to be united, led to a lively in twisted and disreputable -pins. And yet the First-Read- lass, in all other branches of ing so receptive and responsive, but halting and uncertain pro- towards the state of virtue is next to godliness.

ly in January came the report "Gum Shoe Tim" was on the path and might be expected at time. Miss Bailey heard the s in calm ignorance until Miss , who ruled over the adjoin- kingdom, interpreted the warn- A license to teach in the pub- hools of New York is good for one year. Its renewal depends the reports of the Principal in e of the school and of the As- e Superintendent in whose dis- the school chances to be. After such renewals the license be- permanent, but Miss Bailey as a teacher, barely four months The Associate Superintendent er vicinity was the Honourable thy O'Shea, known and dreaded Gum Shoe Tim" owing to his ing way of creeping softly up stairs and appearing, all un- ded and unwelcome, upon the hold of his intended victim.

is, Miss Blake explained, was in ce of all the rules of etiquette ning such visits of inspection. proper procedure had been that . O'Shea's predecessor, who had s given timely notice of his g and a hint as to the subjects ich he intended to examine the ren. Some days later he would from room to room, accompan- the amiable Principal, and fol- by the gratitude of smiling and lled teachers.

is kind old gentleman was now d and had been succeeded by O'Shea, who, in addition to his pectedness, was adorned by an inable temper, an overbearing er, and a sense of cruel humour. ad almost finished his examina- at the nearest school where, a brisk campaign of eight he had caused five dismissals, ases of nervous exhaustion, and an epidemic of hysteria.

Day by day nerves grew more tense, tempers more unsure, sleep and appetite more fugitive. Experienced teachers went stolidly on with the ordinary routine while beginners devoted time and energy to the more spectacular portions of the curriculum. But no one knew the Honourable Timothy's pet subjects and so no one could specialize to any great extent.

Miss Bailey was one of the beginners, and Room 18 was made to shine as the sun. Morris Mogilewsky, Monitor of the Gold-Fish Bowl, wrought busily until his charges glowed redly against the water plants in their shining bowl. Creepers crept, plants grew, and ferns waved under the care of Nathan Spiderwitz, Monitor of the Window Boxes. There was such a martial swing and strut in Patrick Brennan's leadership of the line that it informed even the timid heart of Isidore Wishnewsky with a war-like glow and his feet with a spasmodic but well-meant tramp Sadie Gonorowsky and Eva, her cousin, sat closely side by side, no longer "mad on theirselves," but "mit kind feelings." The work of the preceeding term was laid in neat and docketed piles upon the low book-case. The children were enjoined to keep clean and entire. And Teacher, a nervous and unsmiling Teacher, waited dully.

A week passed thus, and then the good-hearted and experienced Miss Blake hurried ponderously across the hall to put Teacher on her guard.

"I've just had a note from one of the grammar teachers," she panted. "'Gum Shoe Tim' is up in Miss Greene's room. He'll take this floor next. Now, see here, child, don't look so frightened. The Principal is with Tim. Of course you're nervous, but try not to show it. And you'll be all right, his lay is discipline and reading. Well, good luck to you!"

Miss Bailey took heart of grace. The children read surprisingly well, were absolutely good, and the enemy under convoy of the friendly Principal would be much less terrifying than the enemy at large and alone. It was, therefore, with a manner almost serene that she turned to greet the kindly concerned Principal and the dreaded "Gum Shoe Tim". The latter she found less ominous of aspect than she had been led to fear, and the Principal's charming little speech of introduction made her flush with quick pleasure. And the anxious eyes of Sadie Gonorowsky, noting the flush, grew calm as Sadie whispered to Eva, her close cousin:

"Say, Teacher has a glad. She's red on the face. It could to be her papa."

"No. Its comp'ny," answered Eva sagely. "It ain't her papa. Its comp'ny the whiles Teacher takes him by the hand."

The children were not in the least disconcerted by the presence of the large man. They always enjoyed visitors and they liked the heavy gold chain which festooned the wide white waistcoat of this guest; and, as they watched him, the Associate Superintendent began to superintend.

He looked at the children all in their clean and smiling rows; he looked at the flowers and the gold fish; at the pictures and the plaster casts; he looked at the work of the last term and he looked at Teacher. As he looked he swayed gently on his rubber heels and decided that he was going to enjoy the coming quarter of an hour. Teacher pleased him from the first. She was neither old nor ill-favored, and she was most evidently nervous. The combination appealed both to his love of power and his peculiar sense of humor. Settling deliberately in the chair of state, he began:

"Can the children sing, Miss Bailey?"

They could sing very prettily and they did.

"Very nice, indeed," said the voice of visiting authority. "Very nice. Their music is exceptionally good And are they drilled? Children, will you mark for me?"

Again they could and did. Patrick marshaled his line in time and triumph up and down the aisles to the evident interest and approval of the "comp'ny", and then Teacher led the class thru some very energetic Swedish movements. While arms and bodies were bending and straightening at Teacher's command and example, the door opened and a breathless boy rushed in. He bore an unfolded note and, as Teacher had no hand to spare, the boy placed the paper on the desk under the softening eyes of the Honorable Timothy, who glanced down idly and then pounced upon the note and read its every word.

"For you, Miss Bailey," he said in the voice before which even the school janitor had been known to quail. "Your friend was thoughtful, tho a little late." And poor palpitating Miss Bailey read:

"Watch out! 'Gum Shoe Tim' is in the building. The Principal caught him on the back stairs and they're going round together. He's as cross as a bear. Greene in dead faint in dressing-room. Says he's going to fire her. Watch out for him, and send the news on. His lay is reading and discipline."

Miss Bailey grew cold with sick and unreasoning fear. As she gazed wide-eyed at the living confirmation of the statement that "Gum Shoe Tim" was "as cross as a bear," the gentle-hearted Principal took the paper from her nerveless grasp.

"Its all right," he assured her. "Mr. O'Shea understands that you had no part in this. Its all right. You are not responsible."

But Teacher had no ears for his soothing. She could only watch with fascinated eyes as the Honorable Timothy reclaimed the note and wrote across its damning face: "Miss Greene may come to. She is not fired.—T. O'S."

"Here, boy," he called; "take this to your teacher." The puzzled messenger turned to obey, and the Associate Superintendent saw that tho his dignity had suffered his power had increased. To the list of those whom he might, if so disposed, devour, he had now added the name of the Principal, who was quick to understand that an unpleasant investigation lay before him. If Miss Bailey could not be held responsible for this system of inter-classroom communication, it was clear that the Principal could:

(To be concluded next week.)

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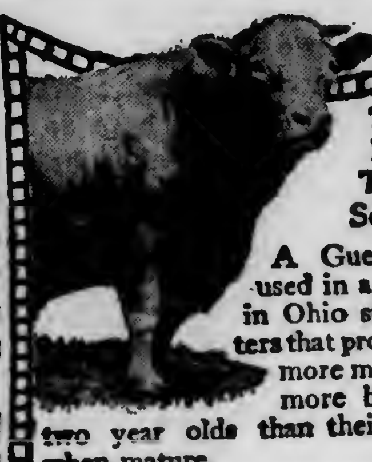

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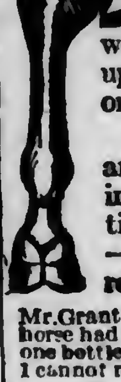

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WHEAT AND FLOUR REGULATIONS

The United States Food Administration on March 23 issued the following statement relating to the wheat and flour situation:

If we are to furnish the Allies with the necessary proportion of wheat to maintain their war bread from now until the next harvest, and this is a military necessity, we must reduce our monthly consumption to 21,000,000 bushels a month as against our normal consumption of about 42,000,000 bushels, or 50 percent of our normal consumption. Reserving a margin for distribution to the Army and for special cases, leaves for general consumption approximately 1½ pounds of wheat products weekly per person. Many of our consumers are dependent upon bakers' bread. Such bread must be durable and therefore requires a larger proportion of wheat products than cereal breads baked in the household. Our Army and Navy require a full allowance. The well-to-do in our population can make greater sacrifices in the consumption of wheat products than can the poor. In addition, our population in the agricultural districts, where the other cereals are abundant, are more skilled in the preparation of breads from these other cereals than the crowded city and industrial populations.

With improved transportation conditions we now have available a surplus of potatoes. We also have in the spring months a surplus of milk, and we have ample corn and oats for human consumption. The drain on rye and barley as substitutes has already greatly exhausted the supply of these grains. To effect the needed saving of wheat we are wholly dependent upon the voluntary assistance of the American people and we ask that the following rules shall be observed:

1 Householders to use not to exceed a total of 1½ pounds per week of wheat products per person. This means not more than 1½ pounds of Victory bread containing the required percentage of substitutes and one-half pound of cooking flour, macaroni, crackers, pastry, pies, cakes, wheat breakfast cereals, all combined.

2. Public eating places and clubs to observe two wheatless days per week, Monday and Wednesday, as at present. In addition thereto, not to serve to any one guest at any one meal, an aggregate of breadstuffs, macaroni, crackers, pastry, pies, cakes, wheat breakfast cereals, containing a total of more than 2 ounces of wheat flour. No wheat products to be served unless specially ordered. Public eating establishments not to buy more than 6 pounds of wheat products for each 90 meals served, thus conforming with the limitations requested of the householders.

3. Retailers to sell not more than one-eighth of a barrel of flour to any town customer at any one time and not more than one-quarter of a barrel to any country customer at any one time, and in no case to sell wheat products without the sale of an equal weight of other cereals.

4. We ask the bakers and grocers to reduce the volume of Victory bread sold, by delivery of the three-quarter pound loaf where one pound was sold before, and corresponding proportions in other weights. We also ask bakers not to increase the amount of their wheat flour purchases beyond 70 percent of the average monthly amount purchased in the four months prior to March 1st.

5. Manufacturers using wheat products for non-food purposes should cease such use entirely.

6. There is no limit upon the use of other cereals, flours, and meals, corn, barley, buckwheat, potato flour, etc.

Many thousand families thruout the land are now using no wheat products whatever, except a very small amount for cooking purposes, and are doing so in perfect health and satisfaction. There is no reason why all of the American people who are able to cook in their own households cannot subsist perfectly well with the use of less wheat products than one and one-half pounds a week, and we specially ask the well-to-do households in the country to fo this additional program in order we may provide the necessary ginal supplies for those parts of community less able to adapt t selves to so large a proportio substitutes.

In order that we shall be ab make the wheat exports that absolutely demanded of us to tain the civil population and sol of the Allies and our own Army, propose to supplement the volun co-operation of the public by a fu er limitation of distribution, and shall place at once restrictions distribution which will be adju from time to time to secure as n equitable distribution as pos With the arrival of harvest we sh be able to relax such restricti until then we ask for the nece patience, sacrifice and co-oper of the distributing trades.

COUNTY NOTES

Broome Co., N. Y., (S.E.) M 21.—Warm spring weather, with thermometer hovering around 7 80 degrees is causing spring work to start with a rush. frosts every night. Potatoes taken a big slump. They are q at 75 cents, but many of the stores refuse to buy at any Corn is quoted at $2 per bushel seed corn is selling at $4.50. farmer had been feeding corn to hogs all winter. He had some t and found that it tested 95 per He is selling the remaining 100 b els at $4.50 per bushel. Local stores are asking $6 per bushel seed corn. Cabbage is being bo by the stores at one cent per p and selling out of the stores at cents. Who makes the profit? prices are still going upward. the milk price is to be dropped. dealers are also going to charg cents per 40-quart can for ha milk instead of 10 cents as forme reason, high price of gasoline!— H.

Crawford Co., Pa., (N.W.) Mar —Fine warm days; ground dr fast. Cows, fresh, $100 to $ milk, $3.40 per 100 lbs; horses r er cheap; eggs, 35c; butter, 50c; tatoes, $1; hay, $18; hogs, dressed. Seed corn scarce. M syrup, $1.75 to $2. Wheat is s and looks rather bad. Hauling nure, fixing fences, cutting w making syrup, moving, the chief tivities.—J. F. Seavy.

Union Co., Pa., (C.) March 1 Farm sales are in full swing with to four each day to the end of month. Live stock and implem on big farms run from $3,000 $5,000. At C. H. Bell's sale, stein heifers with first calf sold $121, and a grade cow with a brought $146. Pigs, seven weeks brought $10 to $11 each. At T Bubb's sale a bay team sold for and a heavier team for $572 cows averaged near $100 each fo cows. Henry Frock sold a regist Holstein cow and calf for $29 his sale, which amounted to $5, Daniel Catherman, who farmed tenant on the Lewis Pellman for 41 years, had a sale on the 1 and sheep brought over $25 each good ones. Corn is being mark at from $1.65 to $1.85 per bu Wheat has been pretty well sol $2.13. Oats are worth from 7 80 cents. Manure is being haule sod fields. No clover seed has sown and no plowing done. With present fine weather continuing, jobs will soon be done. A farm reau has been formed in the co with the idea of getting a farm a or soon. Some farmers have no for the summer, but the labor partment will try to help out on labor. —J. N. Glover.

THE IMPLEMENT BLUE BO FREE

The Midland Publishing Co. Louis, Mo., has left over a few c of the 1917 Implement Blue B one of which it offers to mail fr charge to interested parties who 25 cents to pay packing, postage. The book has nearly 500 royal oc pages and contains complete clas lists of all farming equipment. names and addresses of manufa ers.

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Extensive Cat. free Varieties fine poultry, turkeys, geese, ducks, guineas, bantams, hares, dogs, pigeons, eggs, stock. Pioneer Farm, Telford, Pa.

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Chronic Indigestion. — About a year ago one of my cows had an attack of pneumonia, but seemingly recovered. For some time now she has sick spells. Shivering sets in, followed by loss of appetite and shrinkage in milk. This cow is kept in a dry stable and is well fed. These shivering attacks last about all day. J. L. B., Stockton, N. J.—When she has another attack, give her one ounce of aromatic spirits of ammonia in one pint of cold water every two hours until shivering ceases. Then give her 1 ounce tincture cinchona, one dram fluid extract nux vomica and ½ ounce Fowler's solution in one pint cold water, three times a day. Her bowels should be kept open by feeding clover, alfalfa or roots. She should have walking exercise every day.

Worms.—I have a horse that is troubled with worms. M. M., Perrinsville, N. Y.—Give him one dram powdered sulphate iron, ½ dram ground nux vomica, one ounce ground gentian and one teaspoonful salt in feed, once a day.

Rabbits Have Sore Ears.—My rabbits are troubled with sore ears. The first symptom is the inside of ear becoming inflamed, or blistered. This condition is followed with a crust-like condition of skin. E. R., Kintnersville, Pa.—Apply one part boric acid and nine parts vaseline to sore parts, once daily.

Bots—Indigestion.—We had a 10-year-old mare that was well fed. She ate plenty of food to keep a horse her weight in good condition, but she grew thinner until we decided to destroy her. We found many bots in her stomach and they had eaten away one-half of wall of stomach. We suspect that her colt may be in same way. C. T. O., Angelica, N. Y.—Mix together one part powdered sulphate iron, one part ground nux vomica, one part salt and three parts ground gentian and give colt a teaspoonful in ground feed, twice a day. The colt should be well fed; if so, it will grow and thrive.

Wounded Shin.—What treatment do you recommend for calk wound on shin near fetlock joint? J. P., Flanders, N. Y.—Every fresh newly-made wound should be irrigated thoroly with an antiseptic solution or salt water to rid wound of as much dirt as possible. A teaspoonful of salt to each pint of clean water is a good solution. It is not always necessary to stitch wounds on the leg. Dust on boric acid freely, twice a day. Do not wash wound, but apply peroxide hydrogen to clean off pus, if there be any. Cover wound with absorbent cotton or oakum and light clean bandage. The wound will heal much more quickly if the stable is kept clean and well supplied with fresh air.

Salt Poisoning.—I wish you would tell me if it is injurious to feed salt to hogs, if it is given to them in moderate quantities. I have been told that it is not only injurious, but dangerous to give them salt. J. W., Shrewsbury, Pa. — Poisoning with common salt is rather common as swine very often run onto salt where it is stored, at which time they eat too much. When given to hogs in concentrated form it sets up a violent gastritis and irritation of the bowels, which often results in death. I have known meat brine or salted garbage to kill hogs in spite of after treatment. The great danger from feeding salt to swine is in giving them large quantities at one time, or repeatedly giving them salted food, such as garbage. A very small amount of salt given daily to hogs will do them no harm; in fact it will prove beneficial. Horses, cattle, sheep and goats require more salt than hogs.

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We have on hands a large number of Percheron and Belgian stallions and mares in ages from one to seven years old, all for sale at reasonable prices. Gilt edge guarantee given and make terms to responsible buyers. We deliver all stock to home of purchaser freight prepaid.
Our headquarters at LaFayette, Indiana, can be reached by four different lines of Railroad. Only 60 miles northwest of Indianapolis, and 120 miles southeast of Chicago.
We are also extensive breeders of Hereford cattle and Hampshire swine. We have sold many stallions and mares in Pennsylvania; thirty-five head going to Dr. Thomas Ashton of Wynnewood; and recently we sold to Mr. George F. Fox of Westtown a great stallion and some mares of the Percheron breed, and many others in the State. Will be glad to answer all inquiries promptly. Vistors always welcome at our farm.
J. CROUCH & SON, Props.
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Dairy Cattle

Winterthur Farms
Offer For Sale Sons of
"UNEEDA KING ALCARTRA" No.182646
A 33-Pound Bull
He traces twice to King Segis through his two best sons; Johanna McKinley Segis with a 40-lb. dam, and King Segis Pontiac with a 37.20-lb. dam.
No. 8—Born December 11th, 1917. He is nicely marked, of good conformation and a show calf in every way. His dam, K. S. P. C. Peg 326111, is a 17.42-lb. Jr. three-year-old daughter of King Segis Pontiac Calamity, a 28-lb. son of King Segis Pontiac Alcartra. His 15 nearest dams average 25.6 lbs. butter in seven days.
No. 15—Born December 22nd, 1917. He is about even in color, long, straight back, deep bodied and a show bull in every respect. His 10 nearest dams average 28.4 lbs. butter in seven days. Dam: Queen Nasli De Kol Segis 226241, A. R. O. at 3y. 559.90 lbs. milk, 20.02 lbs. butter. She is a granddaughter of De Kol Beets Segis.
No. 20—Born January 7th, 1918. This bull is a little more black than white and an extra good individual for one of his age. He comes from heavy producing dams. His ten nearest dams average 27-lbs. Dam: Queen Greenwood Concordia De Kol 161413, A. R. O., 476 lbs. milk, 22.08 lbs. butter. Her dam is a 27-lb. cow with a 26-lb. dam.
WINTERTHUR FARMS
Winterthur, Delaware.

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April 24, 1918 at Kulpsville, Pa.
Herd Sire Dutchland Creamelle Sir Winana No.165050, one of the very best 30-lb. sons of Dutchland Creamelle Korndyke Lad. 3 nearest dams average 27800 lbs. milk and nearly 1100 lbs. butter. For further information and catalogue address
H. Y. RUTH Kulpsville, Pa.

7-8 Holstein Calves
either sex $15 to $20 each express prepaid in lots of 5. 45 high grade 2 year olds close springers $65 to $80 each. 40 yearlings not bred. 30 registered heifers ready to breed $125 each. 28 registered bulls, registered and high grade cows at Farmers' prices.
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Maple Lawn Holsteins
Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.
C. W. ELLIS, Jr., Cortland, N. Y.
Office, 34 1-2 Main St. Bell phone.

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Naturally Polled Holstein-Friesian
bull calves, sired by a son of the World's Record senior 4 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp.
GEO. E. STEVENSON & SONS, Clarks Summit, Pa

MILL HILL FARM
offers Guernseys; bulls ready for service and calves. Tuberculin tested. Oscar Bolick, McKeansburg, Pa.

Beau Rio seventeen months old, registered Hereford Bull for sale. Weighs 1,290 lbs. Sire, Beau Donald 37th, No. 469301; dam, Lady Geneve 2nd, No. 352467. Champion type. Fed by my twelve-year-old son, Edson. Write ROSS F. STOUT, Clarksburg, W. Va., for price.

Jersey Bull ready for service. Dam's record over 500 lbs. butter in 1 year. Sire's Dam 22 lbs. in 7 days. Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us.
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Reg. & Grade Holsteins 30 head reg. heifers, $250 each; each or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices. Pictures and pedigrees.
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Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M. E. Basehoar, Crystal Spring Stock Farm, Littlestown, Pa.

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For Sale Fine Reg. Guernsey heifers, Imp. & American bred. Some to freshen Apr. Some fine Imp. granddaughter of Gov. Chene; bull calves. J S. Yoder, Wooster, O.

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd.
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The enormous yields of milk and butterfat of purebred Holsteins, at the lower cost of feed for production, makes them by far the most profitable breed. Get our descriptive booklet. FREE. No obligations. We have nothing to sell.
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AYRSHIRE BULL CALVES Advance Registry ancestry. Priced to sell. They will improve your herd.
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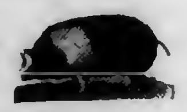
Swine



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O. I. C. & C. W. pigs, shipped C. O. D. Sired by and out of champions. Mischief 2d weight 600 lbs. at 12 mos.
S. L. RHODES, VERSAILLES, OHIO.

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REG. BERKSHIRE pigs for sale cheap next sixty days.
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Large Berkshire Swine Registered High Grade. Prices reasonable. Write
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Durocs choice Sept. boars and gilts. Will breed gilts for Aug. & Sept. Spring pigs either sex.
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Hampshire Ram Lambs Beautiful form. Excellent breeding. Vigorous and stocky. Manetto Hill Farm, Hicksville, L. I.

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"THE GOLD STANDARD OF VALUES"

All the Former Excellence
Plus Many Refinements

THIS NEW REO LIGHT FOUR is, in all mechanical essentials, the same as its famous predecessor–Reo the Fifth, "The Incomparable Four."

THAT IS TO SAY, those principles of design and of construction which made that great Reo famous the world over for dependability and low upkeep, have all been retained.

WHEN YOU CONSIDER that that Reo Four remained standard in practically the same form for eight seasons (longer than any other automobile ever built save one);

IT MUST HAVE BEEN wonderfully right at every point; must have been. For during those years an host of rivals and imitators came and went.

AND ALWAYS REO maintained its supremacy.

SO WE FEEL that the best possible recommend for this latest Reo—this new Light Four—is to say that all those principles of design and that same quality have been retained.

REFINEMENTS have been made at many points however.

WE PREFER THE TERM "refinements" rather than improvements. For, truth to tell, no owner of a Reo Four could suggest an improvement in that great car.

REO ENGINEERS, at the same time the most experienced and the most progressive, are always seeking opportunities to refine details of Reos.

AND THEY FOUND WAYS to make parts of this chassis, always the most accessible ever built, still more accessible.

ALSO MORE POWER has been developed in the same motor by refinements of valve mechanism; better balance of reciprocating parts.

THE OILING SYSTEM has not been improved—no use trying to improve on what was already perfection.

ODDLY ENOUGH when we begin to talk about this new Reo Light Four, we feel an inclination to emphasize rather those features in which no changes have been made, than those where they have!

SUCH WAS THE QUALITY—such the dependability—such the low upkeep—such the satisfaction of 100,000 owners, that a better could be made only by refining details of the original model.

AND THIS ONE IS BETTER only because it is the latest, the most refined edition of that Reo Four.

YOUR REO DEALER will show and explain to you the points wherein these refinements have been effected—and he'll tell you the reason for each.

IN A WORD, for your convenience—in every case. For still greater accessibility. For still longer life. And for still lower cost of upkeep.

ASK HIM about these things.

WHEN YOU SEE THIS REO, you will say the body lines, the finish, the upholstering are the finest Reo has ever turned out.

A LUXURIOUS EQUIPAGE; as handsome in appearance as it is excellent mechanically; yet at a price less than you had planned to pay for such a car.

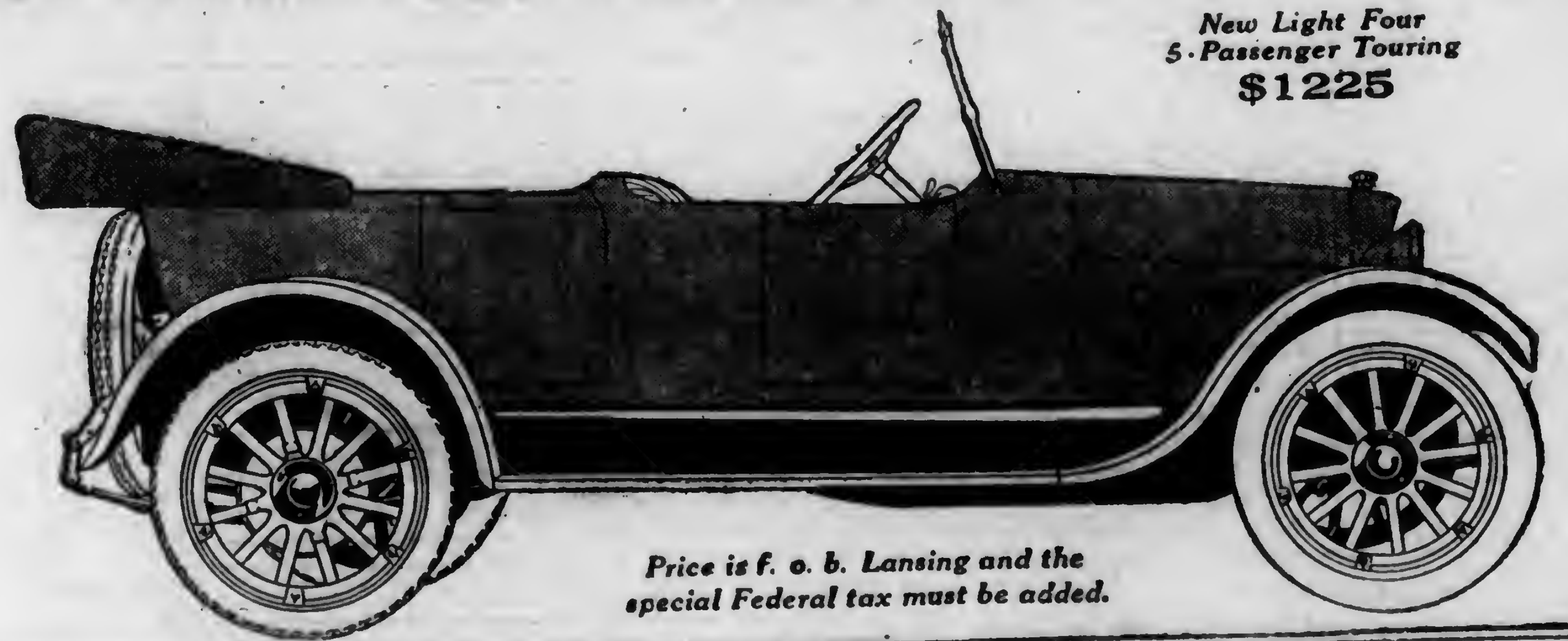
DEMAND SEEMS unlimited. At present, almost hopelessly in excess of factory output.

SO ONLY THOSE who decide now and order at once can hope to obtain a Reo Light Four for spring delivery.

TODAY won't be a minute too soon.

Reo Motor Car Company, Lansing, Michigan

New Light Four
5-Passenger Touring
$1225



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Vol. 43—No. 15. PHILADELPHIA, PA., SATURDAY, APRIL 13, 1918. 75 Cents per Year

How a Bank Created a Community

The Result of Putting Home Dollars to Doing Home Work---By A. B. Ross

In July, 1914, Grove City was an everyday Pennsylvania town, bounded on the north, south, east and west by arbitrary lines fixed for purposes of government and taxation, and separated from an inert farming community by the usual Chinese Wall of suspicion and prejudice—the farmers furnishing the suspicion and the townsmen the prejudice. There was the usual spring aand fall cussing at the post office and by the rural mail carriers at the great influx of mail-order catalogs; the usual criticism of the farmer in town and of the merchant in the country.

But in that eventful month of July something happened which, in the short space of two years, broke down that Chinese Wall, stopped the floods of mail-order catalogs and so far obliterated political boundaries that now, when they—farmers and merchants—speak of Grove City they really mean the whole countryside for ten miles around; and a large part of the membership of the exceedingly live "Grove City Commercial Club" consists of farmers, who pay their dues and gravely give their views and votes in deciding what is good for the community.

Distributing 53 Calves to Members of Grove City National Purebred Dairy Cattle Club

When a thing like that happens, and you want to find out all about it, the first thing to do is to "find the man". And in this case it happens to be "Ed" Harshaw, cashier of the Grove City National Bank, a man with vision and faith and with the force to make his vision materialize. The Dairy Division of the U. S. Department of Agriculture was seeking location for a controlled creamery. It required a certain supply of milk, local capital to finance the project, space for government experimental work in the plant—and, in return, the creamery would get the benefit of its official connection with the U. S. Department, insuring the best of markets for its products.

The creamery plans called for $12,000—before they got thru with it it had actually cost them $32,000. But, under the impetus of Mr Harshaw's leadership—and he has had able assistance, by the way—the money was forthcoming. It was the best thing that ever happened to Grove City. The sleepy, quiet town found its real strength, proved itself, got wide awake. Today, as a direct result of that first financial campaign, Grove City has adopted a new slogan—"Grove City does it in 24 hours". And its the livest little town of its size in the United States. It has kept faith unfalteringly with its new slogan.

The creamery was finished and just at this point Mr. Harshaw, without warning, broke away from all "safe and sane" traditions of country banking, with results which will be described, after a disgression.

The "Buried Talent"

Banks are organized for community convenience and service. The community capital is "trusteed" in the hands of the bank, so that its use may be directed for all legitimate community business, by the most trusted members of the community. That is the bald, bare theory of the country bank as well as of any other. It is the only theory on which the existence of a bank can be justified. The stockholders of the bank guarantee the deposits; the directors of the bank see to it that the depositor can get his money whenever he wants it—that enough cash reserves are held to provide for the usual percentage of the cash needs of depositors.

But the bank is also organized for profit, the profit of the stockholders. And to make this profit the money of the depositors, up to a certain percent, fixed by law, is invested in bonds or loaned to business concerns, and the entire profits of this business are absorbed not by the real owners of the money loaned, but by the bank's stockholders, who are money brokers. Or, to put it in another way, and quite bluntly—the stockholders of the bank use the community capital, for which they pay no interest to the depositors, in a highly profitable business of loaning money. The only thing of value they do give to the depositor is their promise to return his money when he demands it.

It was never intended that this community money, intrusted to its banks, should be invested in ways which are certain to work the community irreparable harm. But, as a matter of bank practice, this is exactly what happens, since all but an almost negligible part of the country money is invested by the country banks in city bonds and securities and in city commercial paper; and the country banker is firm and conscientious in his belief that this class of investments is not only the best for his bank but a fulfillment of his trusteeship.

And so the country money is not invested in enterprises which develop the home town and its surrounding territory, but is sent to the city, there to develop railroads and factories and great commercial enterprises; and the brains and brawn and youth and courage of the country follow the country dollars to the place where they are busy creating life's opportunities. Great farming communities are slowly strangling to financial death for lack of their own money, trusteed by them in the home bank, and by the home bank promptly sent away to help other sections.

Now, there is no charge which is so quickly resented by the country banker as the one that farmers cannot find accommodation at his bank. But the fact remains that the farmer is not wanted as a borrower; he knows that fact as well as the country banker knows it; and the claim that the bank will always be glad to loan to the farmers "on proper conditions" is a "paper case". The bank makes its loans where it wants to make its loans — in the city.

The rule limiting national banks to 90-day loans has been used as an excuse by the banker to rid himself of the farmer. It is only a flimsy pretext. It did not operate to deny the farmer in the great west; it was given scant consideration in the dairy districts of Wisconsin. It has never stood in the way of commercial loans which the bank wanted. It was not a stumbling block at Grove City.

Live and Dead Dollars

People do not borrow money for the privilege of paying interest; that is an annoying incident of the borrowing. Dollars are borrowed to be put to work creating and multiplying dollars, building up great enterprises—and these creative and created dollars and all the other "live" dollars of commerce find their way to the vaults of the great city bank. The country bank gets as its share the dead dollars paid for interest—the unpleasant incident of business.

The process can easily be reversed. Under the provisions of the Federal Reserve Act the big city banks now have money for rediscounting country paper coming within the provisions of that Act. The country bank can reverse the wrecking processes of the past and use city money to repair and rebuild the home community and to add to its own wealth and prosperity. It is one of the undeveloped kingdoms of banking. And for certain reasons it is better for the country bank to get this money from its own city correspondent bank particularly, because it can usually get it cheaper than thru the Federal Reserve Bank.

Returning to Grove City

But to return to Mr. Harshaw, the bank cashier who dreamed a dream and then set about to make it come true. In January, 1916, the U. S. Department added a new man to its creamery staff at Grove City. When this man arrived he found a letter waiting for him, offering full co-operation of the Grove City National Bank in developing better dairy herds; and Mr. Welch, the government expert, wisely seized the opportunity.

The bank agreed to buy carloads of approved purebred dairy cows, ship them at its own risk to Grove City, and sell them to the farmers at cost, farmers to draw lots for choice of cows. Later, after the success of this plan had been proven, the bank financed the purchase of purebred bulls, four bulls each for two associations. A boys' and girls' purebred cattle association was the next part of the bank program, and the bank financed the purchase of purebred calves for the boys and girls. And, while all this work was going along merrily enough, cow testing associations were formed, under the leadership of the bank, and the work of weeding out the loafers was undertaken.

The effect on town and country has already been described. How about the effect on this particularly reckless and riotous bank cashier and the institution he was putting in jeopardy, according to all the rules of the game of banking? In October, 1916, when the first carload of cattle was brought to Grove City the bank's deposits were $894,445.46. On January 1, 1918, the bank's deposits were $1,325,308.28. The gain in 15 months had been $430,862.82.

During the same period the number of depositors increased from 4,614 to 5,343; and the radius of bank patrons extended from a five-mile limit in 1916 to a ten-mile limit in 1918. In this short period of history making 146 farmers bought, thru the bank, purebred cattle.

And now the bank has expanded its plan. Farmers are assured of money for machinery, draining their lands, improving barns, putting up silos, further purchases of purebred cattle and what not. And more purebreds are needed to keep up with the growth of the creamery which has just completed a $60,000 addition to its original $32,000 plant.

A conservative estimate of a year's gain in country deposits, due to the bank's aggressive program, is $150,000. And the growth has only begun, for, to use the words of Mr. Harshaw—"They (the farmers) have no hesitancy in coming into the bank and talking over any of their problems with us, and we are usually able to work out some solution."

The story is a stirring one, as stories of visions realized are likely to be. But just at this time the story is of tremendous importance. Every country bank in Pennsylvania can, to a greater or less extent, follow along that trail blazed by "Ed" Harshaw; and, following that trail, can help to win the war, help to restore normal relations between town and country, help to humanize and sweeten and strengthen its whole community, help to develop opportunities which will keep the boys and girls at home—and, while doing all this, pyramid the bank's resources, profits and influence in the community. And for these reasons the tale is worth while.

Distributing First Carload of Purebred Holsteins Imported by Grove City National Bank

Editors' Note. — The above article is printed in the hope that it may be suggestive to other country banks. That most such banks have not adapted their service to meet the needs of their farmer patrons is proven by the demand for federal aid and the creation of new banking privileges. While bankers in general have shown a lively interest in agricultural extension work, very few have tried to help by performing the service most needed and for which they are best equipped. We believe they would find it more profitable than opposing new banking laws.

Speeding Up Production

By R. P. Lovett, Bucks Co., Pa.

Showing What Must Be Done To Induce Increased Crops

In an editorial sometime ago you called attention to the value of accurate farm accounts and the necessity of having them at the present time. As I have been doing this for a number of years I think this an opportune time to speak of the facts and the costs of production on eastern farms. I have taken the wheat crop for this illustration as it is the one which concerns the consumer and the Food Administration ahead of all others at the present time. The figures given are, I believe, not far from the average which obtain on a moderate-sized eastern farm. I have 80 acres—60 under cultivation, balance pasture and woodland. We have a four-year rotation, corn, potatoes, wheat and clover. The figures are my exact returns for the 1917 crop.

Cost of Raising Wheat in 1917—1 Acre

	Dr.	Cr.
To fertilizer	$ 2.00	
" lime, ¼ charge	1.50	
" seed, 2 bushels	3.00	
" twine	.65	
" threshing and bailing	6.60	
" Labor, 3¼ days	8.95	
" overhead expenses	28.70	
By 30 bushels wheat @ $2 ...		60.00
" 1800 lbs. straw @ 50c		9.00
Apparent balance	$51.40	$69.00
Fertility removed in crop	16.75	
Net profit per acre	.85	
	$69.00	$69.00

The labor, seed and fertilizer charges for the crop of 1918 were all higher, making the total expenses $57.57. Allowing other figures to stand as in 1917, a crop of 30 bushels will show a net loss of $4.32. On the same basis a yield of 20 bushels per acre, which is still above the average, the net loss would be $17.75 per acre.

Overhead Expenses on Farm of 60 Acres

Interest and taxes	$ 551.00
Permanent improvements	100.00
Renewal and repair of buildings	145.00
Renewal and repair of machinery	102.00
Cost of keeping 6 horses	824.00
Total	$1,722.00
Cost per acre, ...	$28.70

There are 20 acres of woodland and pasture, not productive, and taxes are carried by the productive acres. The average farm has a good deal of waste land; if not, the valuation is higher and will amount to about the same thing.

The lime charge is a legitimate one, as it helps the wheat directly and makes possible the clover crop so necessary in the rotation. The threshing and baling cost might be reduced on larger jobs as it costs no more to set up or move the outfit for a large job, but I am after the average cost on the average farm.

The labor charge could also be reduced on larger farms, particularly if tractors or large units of machinery are used. It must also be borne in mind that much of the help is inexperienced and the productive capacity of this class of help is very low in comparison to its cost. The overhead expense per acre of $28.70 may seem excessive, but we cannot get away from the facts in the case and it is here that many farmers deceive themselves. I am giving you the details of the overhead expense account. I also kept a detailed account of the expense of keeping the horses which is, at present, the main item in running up the overhead charge. On large farms where a tractor can be kept and at the same time the horse power can be reduced, then the overhead from "horse keep" can be very materially reduced. Personally, we can not yet see how to do without our teams for cultivating, road work, etc., and no small farm can afford both kinds of power.

The yield of 30 bushels per acre is, I think, an average one for average good land and the price can not be increased, as the miller tells me he is liable to a fine of $1,000 if he offers more, so that settles it.

Now, the average farmer when he figures a profit of $17.60 per acre feels that he is doing fairly well for a farmer; the farmer is not expected to get rich; so he has made just about 10 percent on an investment of $10,000, or so it appears, but here again he makes a fatal miscalculation. He has taken from each acre in that 30 bushel crop, just about $16.75 worth of fertility and this he must put back and pay good money for next year, on the year after, or go broke. How can a man draw money from the bank without depleting his bank account? How can a farmer figure up a profit on a crop and at the same time rob the soil? No, it must be subtracted from the returns and when this is done it leaves a net profit per acre of just 85 cents in my case.

I may be a poor manager, inefficient, wasteful and unbusinesslike or just a "hoarding farmer" trying to hold my crops until I can secure a price that will cover the cost of production; but whatever I may be called I did the very best I knew

ow, with the capital at my command, the class f help I could secure and using my very best nowledge after years of study and experience nd often working beyond my strength to get hings done on time. I have made no charge of me and a half for overtime and double time on unday, which every farmer has had to do the ast year. My good wife worked like a slave tryng to feed and keep green help with not a day hat we could call our own all summer and what e did receive for our, may I call it patriotism, as just $51 for the year's work, figured on the asis of the wheat crop. The corn and potatoes d a little better; the beans and hay not as good. hey average up a small loss. What we are to o or plant the coming season is the question hich is now confronting every farmer and is it ny wonder that he is wavering, undecided and essimistic of the outcome? With costs increasng and the prices of my crops fixed, I feel that I ust face a loss the coming year. I greatly desire o be patriotic and feel that I have gone the limit his year, but if the growing of wheat, hay and corn kind of patriotism is going to put me out of business, I must hunt some other way and some one else will have to grow the food who knows how to do it.

I have not yet had the pleasure of dealing with anyone the past year who was patriotic enough to furnish me with supplies, labor or tools at cost, or below even, tho they knew, from the din that was being made, that food must win the war and they had a chance to help.

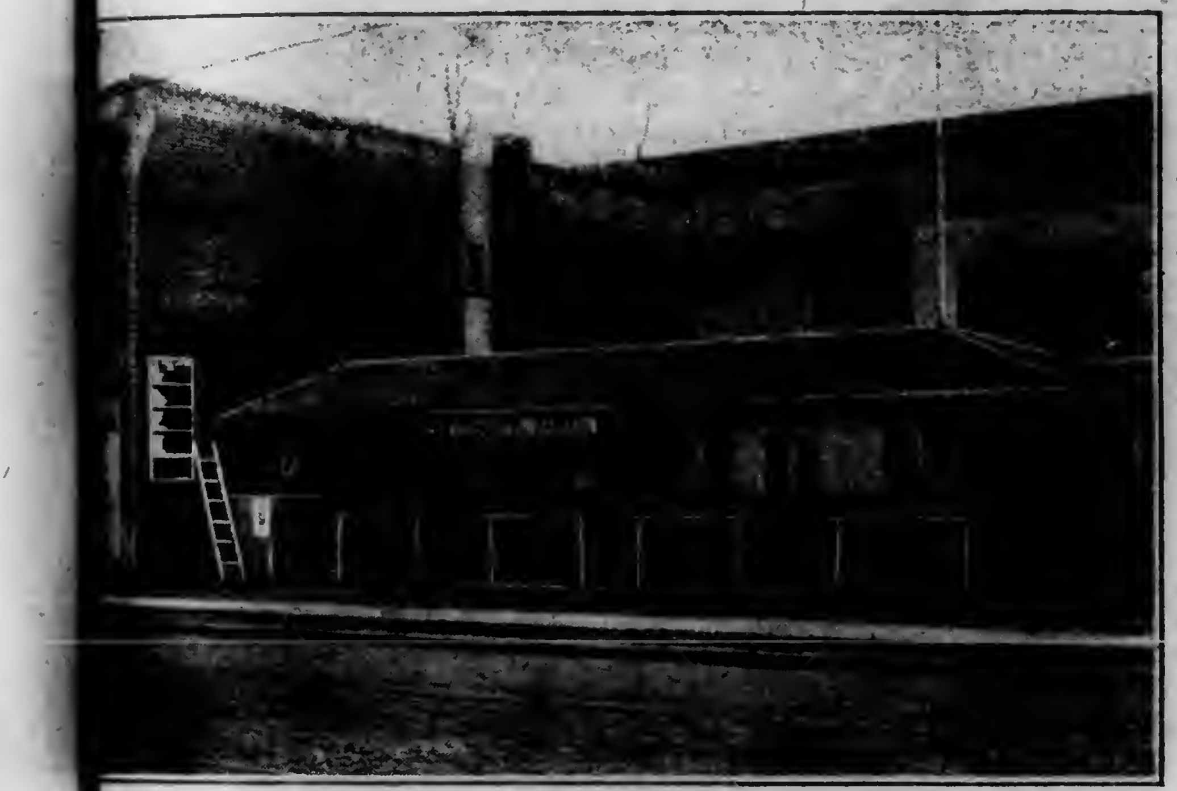
If the growing of wheat will not provide the farmer with a profit of more than 20 cents per day with which to feed, clothe, educate and otherwise care for his family and most of his recreation must be foregone in order to secure this stipend, would it not be far better to be a day laborer with his neat income of $3.50 per day and no need to lay awake nights worrying about drouth, flood, frost, insects or lack of help at the critical time any one of which might easily snatch away even the small profit which is allowed him or leave him with a deficit?

If present prices for farm staples continue it is only a question of time when the small farmers must either retrench or go out of business. We do not want to retrench, neither can we sell out hurriedly without loss. We are in a tight place and most of us will continue to do as we have been doing for some time past—decide to hold on one year more, hoping against hope that some day we will have a square deal and not be discriminated against. Meanwhile the young folks are not willing to wait but have gone.

There is one simple and easy way, one which will help small and large, rich and poor alike, and the only one which will speed up production equal to that of building ships, making munitions, clothing and other things needed to win the war and that is to set the price of all important food crops at the cost of production plus 10 percent profit. That price might be, for wheat, taking the average-sized farm for a basis, with an investment of say $10,000, about $2.75 per bushel. Other crops also have to be on the same basis or we could not compete for help.

The Curb Retail Market

The Most Successful Direct Marketing Plan


This Curb Retail Market Saves Money for Producers and Consumers

Farming is a business, the same as any other terprise, undertaken for the purpose of placing the public market produce grown on the farm. order that the farmer may receive the highest rice for his produce and that the consumer pay e lowest price, it is necessary for the producer d consumer to deal as directly with one another possible. This can best be accomplished thru e curb retail market. All curb markets are conucted on practically the same principles. The arket place is set aside by the city or town d managed by a committee. Places in the maret are rented to the farmers for a nominal sum d may be retained thruout the year.

Curb Wholesale Market

In the wholesale markets the vegetables are ld from wagons to the grocers, peddlers, hotels persons buying in quantity. In these markets uch speculating is sometimes carried on. The riter investigated an instance where a speculator went around and bought up all the lima ans in the open market at $1.50 per bushel mper, and a few hours later had no trouble in posing of them at $2.50 per bushel hamper. is clearly illustrates one cause for the high tail price of vegetables. Another instance, hen green string beans were selling on the open arket for 50 cents a bushel wholesale, not one ndred feet away on the retail stand the same ds were selling for 35 cents a half peck. This ndition, especially in the larger cities, is a probm in itself.

Curb Retail Market

This market brings the producer and conmer into direct contact with one another, and is questionably the best market for all concerned. e farmer realizes a fair profit on his goods while at the same time the consumer buys for the lowest amount possible. In every instance where this market has been thoroly tried out it has been successful, and the housewives have given their heartiest support. For example, the city of Lancaster, Pennsylvania, maintains five market houses where the farmers, coming within a radius of fifteen miles from the city, bring their produce to be sold from the stands direct to the consumer, and it is this fact which gives the city of Lancaster the reputation of having the best and cheapest produce of any city of its size in the east and giving satisfaction to all.

Last year, in the state of New Jersey, eighteen retail markets were established, every one proving a success. The writer has in mind one community, started last July, which is a good example. A committee of three ladies, appointed by the mayor of the town, was in charge of the market. A corner lot near the center of the town was donated by a citizen and display and selling stands were provided free of charge to the farmers for the selling of their produce. The prices asked by the farmers were fixed by the committee in charge and were 10 percent more than the prices of the nearest wholesale market. The farmers attending this market are very well satisfied. They are saving approximately four hours daily as well as receiving a higher price for their produce. On the other hand, the committee in charge estimates a saving of $10,000 annually to the consumers of that particular town.—C. H. Nissley, New Jersey.

Note. — The curb markets are growing in popularity and numbers in spite of much opposition. They are of direct help only to those farmers who live close enough to their market to make the trip profitably; but they help all farmers indirectly by making evident the cost of expensive distribution systems. The curb markets are the forerunners of more direct marketing and more general co-operation between producers and consumers in solving the problems of greatest mutual interest.—The Editors.

TESTS SHOW LITTLE SOIL ACIDITY

A general impression prevails among farmers that the liberal use of commercial fertilizer brings about soil acidity. This impression is especially marked in the case of acid phosphate.

Recent studies of the general fertilizer plots at the Pennsylvania State College, together with the results secured from laboratory pot tests by Prof. J. W. White, of the same institution, show that ammonium sulphate and dried blood are the only forms of fertilizer materials which have a tendency to materially increase the acidity of the soil.

Where ammonium sulphate has been applied at the rate of seventy-two pounds of nitrogen to the acre twice in a four-year rotation since 1881, the soil has become so acid that clover will not grow, and corn, oats, wheat and timothy are beginning to show decreased yields. Dried blood is beginning to cause a failure of clover, but has not as yet materially affected the other crops.

The plots treated with forty-eight pounds of phosphoric acid in acid phosphate every two years have not shown an increase of soil acidity beyond that found in the unfertilized plots.

Where nineteen different kinds of fertilizer materials were tested in the laboratory tests, only three caused a marked increase in soil acidity, viz: ammonium sulphate, dried blood and horn meal.

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Our first planting of apple trees was made ten years ago, and we have planted from 100 to 400 each year since. The land was very poor and we decided to put in only 60 trees as a beginning.

Six years later we put in several hundred trees on ground that was equally as poor, with unsatisfactory results. Our experience was that it pays handsomely to spend several years in getting the land in proper shape and then plant, rather than start the orchard and increase the fertility while the trees are growing. This has reference to very poor soil. The second year we set out 125 more. Here we made our most costly mistake. We took the other man's advice and put peach trees as fillers among the apples in one-half the plot. The peach trees made good growth but frost and hail destroyed what would have been our three crops. The apple trees, comparatively speaking, amounted to nothing. Last summer we removed the peaches. After these were out the apple trees looked so scrubby we cut them out too and re-planted the plot. The trees in the part not having peaches as fillers gave us the third picking of fruit last fall of from 2 to 5 bushels of first-class fruit to the tree. We could cite a number of instances where others have had the same experience; so, no more peaches among our apple trees.

I am glad to say that up to this time we have had little cause of complaint on the score of not receiving trees true to name. We never hunted for bargains in trees; we insist on first-class trees, and then pay the price. We ordered twice from cheap nurseries and lost out each time. We feel it is economy to pay the price demanded by a responsible nurseryman. We have about 800 of the last plantings to fruit yet, but these are practically all Stayman with 50 each of Wealthy, McIntosh, and Stark Delicious. We have come to know the characteristics of these trees so well that we are satisfied they are O. K. It certainly is most discouraging for one to buy, plant, and properly care for an orchard until it is 8 to 10 years old and then find the trees are not of the varieties ordered and of little market value.

The Stayman Winesap scarcely needs description any more. Just put well-grown fruit on the stand and ask double the price your neighbor is asking, and your apples will be gone before the market is over, while the other fellow can take his home and bring them in two or three times more. It has the four cardinal points: Good quality, good color, good size, and an excellent keeper in common storage. In addition to these strong points it is an exceedingly strong grower, in fact the best we have in this section. The King David is a medium sized, highly colored apple of good quality. If taken off about the time of Grimes Golden it is a good keeper and y is ready to use as early as the Bal win. This tree is one of the m nearly perfect growers as to sha we have ever seen; also a you and regular bearer. The Gano a Black Ben are synonomous in our chard. The tree is a strong grow a heavy annual bearer. The fr is oblong, very dark red, but has much of its parent's nature on t one side to be a money maker. Hen Clay is our best early apple. It ri ens a week before Yellow Transp ent, and is twice as large; excell quality, a fine dessert apple. T Stark Delicious is simply delicio Eat one or two and you do not thi much of them; eat a dozen, and y are enthusiastic over them. I led to believe that many of the tr sold as Stark Delicious have not b true to name. Any one at all fa iliar with the apple, and seeing exhibit at the Horticultural meeti at Harrisburg, could not help notice there was something wro Many were off color, shape, and s It is true, apples may vary in c tain sections as to color and size, I have yet to see this apple vary shape. "Has the Delicious ap proved a success in Pennsylvani was discussed during one of the sions of the horticultural meeti and from the expression of the gr ers it seems not to have made g here. Yet, with us it has been p fect as to size, shape, and color, latter modified somewhat as to f age conditions. The quality co not be better. One of our York Co ty growers won a ribbon on bo Delicious. As to the market dem for this variety, which is after the real test of an apple's value, th is no question.

Before setting out our fruit t we wrote the late Mr. Van De the apple expert, as to the adv bility of planting Stayman Wine King David and Delicious. He plied, "There is no doubt as to t quality, but they are new, and do not know if the public will them." The unusual demand Stayman and the increasing dem for Delicious is the answer. Ch pion is the earliest bearer and lo est keeper we have, but its qua is the lowest, in fact it has very tle taste at all. Giant Jeniton, not much advertised, has prove be our very best keeper so far. better than Stayman in this resp It is an apple of good quality not as spicy as the Stayman. only fault is lack of color. Wealthy have not fruited but have seen them in a neighbor's chard and they are proving mo makers. However, the tree is clined to blight.—Clayton F. W er, York County, Pa.

LATE FALL CARROTS

After the crop of early spina lettuce has been harvested in

market garden, late carrots can be grown. The soil should be enriched by applications of stable manure at the rate of 20 to 25 tons per acre. Just previous to planting from 400 to 500 pounds of acid phosphate should be applied. For the best results, the soil should be plowed deeply and thoroly fined at once. The best method of fining the soil is that of back furrowing and raking down the furrows. The bed is then practically level, smooth and free from coarse litter.

The carrots should be planted in rows 12 inches apart. A liberal amount of seed should be used, two pounds per acre is none too much. There are a few growers who say three pounds is about right. Give the carrots frequent and thoro shallow cultivation. Keep down the weed competition and save soil moisture. Very good carrots can be grown in this way if thoro work is performed and large yields will be obtained.

The varieties recommended are the Danvers Half Long, or Chantenay.—A. E. Wilkinson.

HOW TO PREVENT BLIGHT OF PEAS

When a field of peas wilts suddenly without seeming provocation it is said to have blight. Altho greatly influenced by soil and weather conditions, blight is primarily caused by the plants being attacked by one or more kinds of fungi.

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How To Detect Disease

Discussing the nature of the disease, Department of Agriculture specialists explain that if a handful of blight-stricken pea plants are pulled up they are found to have the base of the stems black and rotten. In addition to wilting, there may be brown spots or blotches on the leaves, stems or pods. When once started, blight is most destructive in hot weather following excessive rains. Plants growing on poorly drained soils suffer much more than those on fertile, well-drained soils.

Spread of the Disease

Pea seeds that are produced underneath the spots on the pods frequently carry the disease in their interior. The seat of the infection is so well protected by the seed coats that it can not be wholly eliminated by disinfection. The disease is also carried by infected pea straw, manure from stock fed on such straw, and on volunteer vines which come up in the fields after harvest. Furthermore, it seems to persist in the soil for several years when once it has become firmly established thru lack of rotation.

Prevention of Pea Blight

Seed disinfection is of little value in preventing blight and spraying is not much better except on a very small scale. Here are the main points in prevention worked out by the Wisconsin specialists:

1. Healthy Seeds.—Secure healthy seeds from fields where little or no blight occurred. It is practically impossible to detect minor infections on the seed, hence the reliability of the seedsman should be considered.

2. Rotate Crops. — This process hastens the destruction of pea refuse and volunteer vines where the blight may be held over winter. A 3- to 5-year rotation has given best results on most soils, altho 6 or 7 years is sometimes not enough where there is danger of reinfecting the soil by surface drainage water or wind-blown dust carrying bits of blighted straw.

3. Use the Silo for Green Vines.—This is an important, practical and reliable measure from the standpoint of plant sanitation, because the vitality of the disease germs is destroyed by the ensiloing process.

4. Prepare the Seed Bed Better.—Peas have been grown for centuries in highly cultivated gardens and respond best to that kind of treatment. Plants grown in poorly prepared soil are weak and more quickly succumb to attacks of blight. Fall plowing with early spring working puts most soils in excellent condition to produce good thrifty plants.

5. Attend to Soil Fertilization. — Many seem to think that because a pea is a legume and harbors nitrogen-fixing bacteria on its roots it can look after itself. Such is not the case. The pea plants need available plant food and there is no better way to supply it than by applications of cow manure harrowed into the soil in the spring. This practice has the added advantage of helping to prevent the baking and packing of the soil about the young plant stems. Lime is needed if the soil is acid, and inoculation is helpful if the soil is new in the culture of peas. A well-fed plant is strong and capable of withstanding blight to a great extent.

6. Drain the Soil Well.—Drainage is a most important factor in insuring a vigorous stand of plants which will be relatively free from blight. Thoro tiling with ample-sized tile will allow the soil to be worked early in the spring so that the crop may be grown before the severely hot weather sets in. The tile also will remove rapidly excess surface water after rains, which otherwise would predispose the plants to blight.

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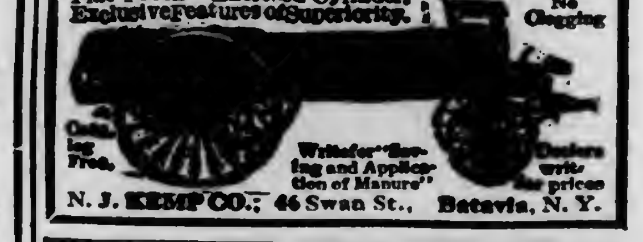
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PHILADELPHIA, PA., APRIL 13, 1918.

The New Loan The third Liberty Loan drive is now on. It is not for so large a sum as was anticipated some time ago, yet when compared with the national expenditures of the past the amount is startling. During the year since war was declared, the expenses of the government have been nine billion dollars, and we are now spending about one billion per month. About one-half of these sums is for loans to the Allies and will be repaid. It is estimated that, up to the first of this year, the war has cost the United States 2½ percent of its national wealth; Great Britain, 35 percent; France, 36 percent and Germany, 41 percent. When these figures are considered it is readily seen that, altho the amount of the new loan—$3,000,000,000—is an immense sum, we are yet a long way from a serious situation in comparison with European nations.

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First coupon on the bond to mature within 129 days, or on September 15, 1918. Interest thereafter payable on March 15 and September 15.

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Bonds accepted in payment of inheritance taxes.

Suscriptions payable in installments: 5 percent on application, 20 percent on May 28, 38 percent on July 18, and 40 percent on August 15.

Bonds to be delivered over the counter to small purchasers.

* * *

Potatoes There is probably no other crop, with the possible exception of wheat, which is receiving so much attention at this season as potatoes. Because of the rather discouraging experience with this crop last year, many farmers are inclined to reduce their usual acreage and "play safe". We do not believe that farmers in good potato sections should plant "short" crops this year. In the first place, it may safely be assumed that the financial experiences with this crop last year will not be repeated this year. The cost of seed, the element which made last year's crop unusually expensive, will not be more than one-third as great. The expectation is that farm labor will be more available, and it is not often that weather conditions such as we had last fall are repeated successively.

We have devoted page 14 of this issue to a consideration of the world's production of potatoes, and to the views of potato growers upon the outlook. Producers must now guage their business with respect to world conditions. Every indication points to a shortage of available staple food supplies. The last government report on the condition of winter wheat showed it to be far below normal, and the low vitality of seed corn suggests the possibility of reduced yield. A reading of the figures on page 14 will show the important place which potatoes occupy in the world's food, and indicate how much greater use of them might be made in this country should necessity demand, and this necessity will soon exist unless all signs fail. For business as well as for patriotic reasons we say plant potatoes.

* * *

Progress in Prohibition To date, eleven states have ratified the prohibitory amendment, Massachusetts being the last. New York's legislature is trying to avoid responsibility and action by pretending a desire for a referendum to the people—an action which, after all, would not be binding upon the next legislature. In many states both sides are making strenuous efforts to nominate men for the legislatures pledged for or against ratification. Some of the candidates whose past records show them to have been either neutral or opposed to prohibition and woman suffrage are now espousing both. If the "better element" in politics will follow up the work already done success seems reasonably certain; but as yet it is only a possibility. Some of the maneuvers made by the new recruits may turn out to be only feint attacks.

Certain influential leaders in politics are opposing the "injection" of these subjects into the election at this time with the plea that it diverts thought and effort from the war and jeopardizes success in it. This is the rankest kind of nonsense, since all intelligent people know that the influence and use of intoxicating liquors is the greatest known enemy to efficiency in war activities. Any serious distraction of the public mind that may occur will be caused by opposition to the movement, and this is being made by the liquor dealers and their working partners—the political bosses. Men who try to shield their sinister motives under the cloak of patriotism are living examples of those who would "Steal the livery of Heaven to serve the devil in".

* * *

Poultry Regulations Many explanations have been offered for the enforcement of the now-famous hen rule No. 14, but none seem to satisfy. When the order went out prohibiting the sale of live or freshly-killed hens or pullets between February 11 and April 30, the Federal Food Administration issued its first positively prohibitory order; and it struck at the foundation of an essential industry. It has been reported that the order was necessary to permit the moving out of storage of immence amounts of frozen poultry; that it was to save the poultry industry in certain sections of the Southwest where fowls were being killed off because of comparatively high prices on poultry and excessive prices on feeds; that it was to insure larger settings of hens and a larger crop of chicks for the new year. The practical effects of the order upon the poultry industry have been thoroly discusses in recent issues.

There is a general conclusion that the net result will be to make the growers carry the burden of the storage interests. Present prices on storage stock are maintained by shutting off fresh supplies. Prices are certain to drop when the time limit is reached on April 30, and the packers and storage men will be able to fill their houses at lowest possible prices. The growers not only carry the burden under high feed costs while the storage houses are being emptied, but they must contribute all that is gained by the packers when storages are being refilled after the restriction is raised. Farmers have a right to know more about the reasons for the regulation and, more particularly, to know just where the order came from.

Last week a hearing was held in the Bureau of Chemistry, of the U. S. Department of Agriculture, to consider the advisability of prohibiting the shipping of poultry packed in ice. So far as we have been able to learn, none of the larger poultry associations, poultry papers or the agricultural press received notice of the hearing. It is held that shipping in ice causes poultry to absorb moisture and thus deteriorate slightly in food value. But the only alternative is pre-cooling and shipping in refrigerator cars, a method not readily available to the small shipper or individual poultryman. The hearing resulted in the decision not to abolish the ice-packed method, but to launch a campaign of education to make the process more efficient. Had the practice been abolished it would have thrown all of the business of dressed poultry shipping into the hands of the packers and companies large enough to maintain their own refrigerator cars.

The time, manner of calling and proposed result of calling this hearing give ground for the suspicion that again the packers' interests are being very well served at the expense of the poultrymen. Conditions in the poultry business are such that suspicions are dangerous. Neither the Department of Agriculture nor the Food Administration can afford to make drastic changes and rulings without the most extensive explanation of the offending causes and the purposes sought. Farmers are asking whether they or the packers are to be served.

* * *

Adopt a Schedule In addition to the many needs for conservation of material things, farmers this year will find a greater-than-ever need for the conservation of time. We have always noticed that they, man or woman, who have a system for doing their work get more done and do it more easily than they who work according to no plan. Of course, the farmer is subject to many uncontrollable circumstances which may upset the best system occasionally, yet it pays to have set times for doing the routine work such as milking, feeding, quitting work, going to meals, etc. It is much easier to keep help on a farm where there is a well-observed system than it is where hours and plans are not kept. The writer knew one farm where breakfast was served any time between 6 and 8 o'clock, dinner from 11.30 to 2, and supper any time between 5 o'clock and lamp-light. Needless to say it was impossible to keep help on this farm, altho it was a good place otherwise.

Routine work of any kind is more easily done when it becomes more or less of a habit; but in order to form habits it is necessary to observe rigidly a set time as well as a regular method. Neglect of such observance upon the part of one or more, causes others to lose time. The "women folks" are put to great inconvenience on many farms because the "men folks" pay no attention to meal time or quitting time. We are anxious to learn how farmers in general will adopt and apply the new "daylight-saving" plan. One word of caution we would offer: To those who rise an hour earlier than before, stop an hour earlier. Don't make the mistake of thinking that the new plan will give a chance for an extra hour. Farmers, more than many others, need that hour for recreation and rest. A good system, regular hours and careful work will accomplish more than a rushing, heedless haste which frequently necessitates doing the work again.

* * *

Cull the Herd There are reports that dairymen in some milk sections are deliberately slaughtering their herds because of lower milk prices. This reflects a serious condition that calls for very careful judgment on the part of farmers. No dairyman can be expected to keep his herd at a loss. If the product does not pay the cost of production, the cows must go. But if they go in any considerable numbers, it will mean a reduction in production not only now but for the next five years. It may meet the present needs, but the general slaughter of herds will not enable the dairymen to stock up readily when feed and milk price changes make the industry more profitable again. This is the time to cull the herd—not to destroy it. The cows that cause the greatest loss now will be the least profitable in better years. Get rid of them, but hang onto the good producers. Keep young stuff coming on from your best cows.

Every dairyman knows that he can improve his stock by wise breeding. But many dairymen feel that they cannot drop their less profitable cows without a temporary loss. The present high prices on beef and on the feed you have to buy makes the present the most favorable time to get rid of these low producers. Let them go, and make sure that the scrub bull goes with them.

HARRISBURG NOTES

Co-operation of Politics.—The Supreme Court of Pennsylvania having decided, by the narrow margin of one, that the governor has the right to reappoint officials rejected by the State Senate to serve until the end of the next legislative session and ordered the auditor general to pay them as legally authorized officials, Capitol Hill is now settling down to see the result of the auditor general's latest move to correct conditions long recognized in the state government. The decision of the supreme court jolted many people connected with the state's government, even some who are gubernatorial appointees, and has rather stimulated the demand that when the war is over and conditions become normal that a new constitution be framed. The Brumbaugh administration has brought many new things into the life of Capitol Hill and to win out when it comes to the legal test, altho popular conceptions of the matters are entirely different from what turns out to receive the decision of the court.

Duplication Charges. — Auditor General Snyder has refused to make payment to State College for its field work until he has a conference between the officers of the College and similar lines. The chief thing is that he wants an inquiry into reports that the College and the Department of Agriculture are duplicating work. It is the general impression here that they are doing so. Ideas that the Department and the College were overlapping have prevailed here for years and one of the things which Governor Brumbaugh said in his first year that he was going to cure was that very thing. Two months after he had taken office he told assembled newspaper men that duplication in agricultural matters would be done away with and things made efficient. It is complained at the Department of Agriculture that State College is establishing field experiment stations and conducting the same investigations in the same localities as the economic zoologist, while it is also set forth in reports that are passed up and down the Capitol corridors that the forestry school of the college conflicts with the state acedemy. From time to time it has been announced at the Capitol that co-operation between State College and the department was at hand. One of the causes of disagreement between the Commission of Agriculture and the Department was that the commission was not given authority to correct the departmental machinery. There is a fine chance now for Gifford Pinchot and the other eminent men the governor is said to have in mind for places on the commission to get the college and the department into that close relationship proposed when they were started and which has been much talked about.

Construction Projects.—It is an interesting commentary that while construction of the state's much needed insane hospitals is to be postponed because of the war conditions as to prices and materials that there is much awarding of contracts for roads by the State Highway Department on equal shares with counties. The number of projects, outside of Huntingdon County where the state bears the entire cost, is really very small. Practically all of the contracts are on the "fifty-fifty" basis, which takes two to make a contract with the builder. The contracts let so far this year aggregate a million and three-quarters of dollars, while those let during the whole of last year are not so much over a million and a half. The prices at which the road contracts are let reflect war time, it may be said, but the counties and townships want the roads and the state goes along.

The Farm Advisors. — The state's farm advisors are now in the field working on the long list of requests for their expert advice, while the place of chief of markets is practically held as a farm advisor by E. B. Dorsett, who had his own troubles with the Commission of Agriculture. One of these days some one connected with the state government will tell the inside of opposition of the Commission of Agriculture to the bureau of markets and it will be interesting.

Highways Unite. — One of the most sensible moves to be made in a long time toward systematic development of main highways was the formation here a few days ago of an association of all the highway associations. The result will be an agreement on a program for legislative suggestion next winter and probably concentration of effort for improvement instead of calling for isolated stretches.

Against Cholera.—State Live Stock Sanitary Board officials believe that they have headed off the usual hog cholera outbreaks, in spite of the increase in number of hogs, by insisting upon inspections before sales. In some cases objections were made, but buyers aided materially.

The Draft Call.—Specific exemption of men engaged in agriculture is made in the call for about 11,000 men which has been made under the draft law. These men are to start for camps April 26. Over 7,700 have just gone. Chances are that in May there may be 10,000 more called.—Hamilton, Harrisburg, April 8.

NEW YORK LETTER

To Work or To Jail.—The Department of Agriculture is advocating the slogan "Go to work or to jail" for every state and community. Three states, Delaware, Maryland and New Jersey, have declared for it. A Texas sheriff did not wait for his state to make new laws. The old vagrancy laws were good enough, and he enforced them. No one was allowed to loaf around because he had money, as his services are needed at this time more than money. It is an example worthy of following. No one whose efforts can produce food should be allowed to be idle while our sons are in France.

Record Meat Days. — During the three days preceding April 1, the farmers patronizing the North Side market of Syracuse sold over $10,000 worth of meats. Feed and hay are high and many had notes to meet April 1, and the live stock was sacrificed to raise money. Prices held very firm, veal selling at 23 cents pound; pork, 22½@23½ cents. Live roosters brought 39 to 42 cents pound; geese, 33 cents; gobblers, 32 cents. The curb market of Syracuse will not be resumed this year.

Moravia Fair May Move. — The stockholders of the Cayuga County fair are debating the advisability of moving this fair to the city of Auburn, at the other end of Cayuga County. Many small county fairs have been temporarily abandoned because so much work is demanded of the farmers this year, but it is thought this furnishes needed relaxation at this time of the year, so the fair will not be called off.

To Entertain National Grange. — Syracuse will entertain 2,000 visitors the week of November 13, 1918, the occasion being the national convention of the grange. Buffalo, Rochester and Niagara Falls competed for the honor, but Syracuse was chosen as the most logical place.

Record Breaking Canning Season. —Canning factories of Western and Central New York are rapidly entering into contracts with growers. The season will soon open with asparagus, spinach and rhubarb and remain open until next winter, and will see record prices on many crops. If plenty of seed is obtained for growers, the acreage will be the largest ever. The labor problem gives concern, but will be largely met by the use of improved labor-saving machinery. Last December an association was formed in Orleans County to federate the interests of growers. The canning companies have recognized their demands for better prices, and by organization better prices on commodities have been secured. Some of the present year's prices will be: Fancy peas, $75 ton; standard peas, $50 ton; string beans, $40 ton; corn, $22 ton; tomatoes, $20 ton; domestic cabbage, $12 ton; seed furnished free.

Dairymen Make Demands.—Over 100 dairymen, farm bureau members and grange members of Tompkins County met this week in Ithaca and passed two important resolutions. One recommended that Herber C. Hoover take over the management of the Borden Milk Company. This followed the announcement of the repudiation of the agreement by the company with the Dairymen's League and the Federal Milk Commission. The second resolution asked the executive committee of the Dairymen's League to begin at once a campaign to require members of the League to use two more quarts daily of raw milk on the farms, thus reducing the milk surplus by over 2,500 cans of milk daily. The 65 farmers patronizing the shipping station of the New York Standard Dairy Company at Moravia went on strike April 1, and refuse to take any more milk to the company until the latter accedes to their demands. These farmers threaten to build and operate a station of their own in the near future.

Milk Testers Licensed.—After a six-month's course in Syracuse College of Agriculture, seventeen young men have just graduated as licensed milk testers, several going to new positions at once.

Draft Horses High. — At Malone this week twelve draft horses brought over $3,000, or an average of $250 each. This is a record price for animals not of purebred stock in the North country. The horses had all been used in lumbering in the forest preserve.

Farm Loans Approved.—Forty-five applications, totaling $200,000, have been approved by the Onondaga brands of the Federal Farm Loan, and eight farmers have received their money. This plan of financing crop work is gaining in favor with farmers.

War Fuel Slogans.—Fill the coal bins now, is the advice of coal dealers. Better yet, if possible, cut or buy cordwood for next season's use. Wood is the war time fuel, but do not sacrifice valuable fruit or timber trees, as too many sections are doing.

Maple Sugar Run.—The greatest sap run in years came this week, running freely five days and four nights in succession. The warm weather affected the quality the last day or so, but previous to that the quality was exceptionally good. Some farmers have already gathered up their buckets, as spring work with plowing, etc., is on and few consider the making of sugar profitable enough to let it delay spring crop work.—F.

NEW JERSEY FARM NOTES

Increase Acreage.—New Jersey is now in the midst of her "Planting Week", designated by Governor Edge to run from April 9 to 16. In urging its general observance the executive declared that the food production program that has been adopted by the state for this year is being pushed by county boards of agriculture and farm demonstrators and calls for an increase of fifteen percent in corn production, and a similar increase in buckwheat in the northern part of the state and the maintenance of normal potato area and likewise the area devoted to vegetables. It is necessary that steps be taken to facilitate transportation of farm products and farm necessities to aid the farmers of the state in their work. The Governor suggests, as one method, the increasing of the freight car capacity available for farmers.

Prices for Can Tomatoes.—At a recent meeting of the Camden County Tomato Growers' Association it was learned that not one of the members present had contracted for the sale of his product this year for less than $30 a ton. It may be that some of them will not receive more than $25, but it is believed that this price is nearly as good as $30 when it is taken into consideration that the lesser price is in proportion to the haul the grower must make to deliver his product. It is reported that the canneries are all about to offer $30 a ton, which is the price the South Jersey tomato growers are aiming to obtain. Early in the winter it was shown that the cost to produce a ton of tomatoes would be about $25 and it was felt and generally agreed that a price of $30 could reasonably be expected. It is understood that agents have already been down in South Jersey endeavoring to get wharfage room, but find very little as local buyers have been ahead of them. Satisfaction seems to reign among the growers since the announcement that the government will not fix the price and there will be allowance of an open market.

Plead for Farm Labor.—Addressing the New Jersey "Four Minute Men" in convention at the State Capitol, Professor Frank App, of the Agricultural Experiment Station, told the speakers that they should plead with the people for workers to go on farms in New Jersey this year to raise crops. Professor App said there are between six and eight thousand farm workers needed.

Governor Edge has announced himself a candidate for the Republican nomination for United States Senator. He will run on his record as Executive of this state and his support of the Federal war program. Former Senator Austen Colgate and George L. Record are also in the race. Democratic House Leader Alexander Simpson is an aspirant for the nomination at the hands of his party.—L.

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Corn Stover Silage

A Feed Conservation Measure

By S. I. BECHDEL, Penna. State College

At the present time, when measures of food conservation which call for more economic production, with the conservation of concentrates and the utilization of more roughage in the live stock and dairy industries, a consideration of corn stover silage is of special interest. Many silos on dairy farms over Pennsylvania are empty, or soon will be. It will be several weeks before pasture will be available. On a large number of these farms, corn stover may be found stored in sheds or perhaps standing in the field. This spring no doubt sees as great, or perhaps a greater, waste of this not invaluable farm product as any previous year. Too much corn stover is being used for bedding, or is allowed to spoil in the field on Pennsylvania farms. When it is fed, the usual practice is to give it no special treatment, such as shredding or chopping; and as a result a large percentage is uneaten and consequently wasted.

A Supply of Silage Helps Out the Spring Pastures

The idea of ensiloing corn stover and cured fodder is not a new one. In a few localities, farmers have followed this practice for some years, and there have appeared several experimental station publications which deal briefly with the subject. Experimental data on the subject are, however, very meagre. Little has been established with reference to the practicability of corn stover silage, while nothing is known concerning the nature of the fermentation which takes place and the factors operative other than may be deduced from a knowledge of ordinary silage.

An Experiment

In April 1916, The Pennsylvania Experiment Station carried out a project to determine partly the practicaability of ensiloing corn stover, and partly the nature of fermentation which takes place therein. In this experiment a wood stave silo, 16 feet in diameter, was filled with 32,000 pounds of stover, to which were added 66,000 pounds of water. The material had been stored in a shed the fall before and was quite dry. It was moldy in spots and represented, on the whole, an inferior grade of stover. A silage cutter was used to cut and store it in the silo. Two men were kept in the silo all the time during filling to tramp and pack down the silage. A hose was carried about by one of the men to wet the material thoroly and uniformly, and the amount of water used was regulated with a meter.

Samples that were taken frequently for chemical and bacteriological studies were examined for aroma and general appearance. It was observed that the stover soon fermented and formed a product similar to that of normal silage made from green corn. It softened, regained a slightly greenish hue, and developed an aroma much like that of ordinary silage. In all these respects, however, it was somewhat inferior to silage made in the usual way from green corn.

Feeding Value

A feeding test was started at the close of the experiment to compare the feeding value of corn stover silage with that of ordinary silage. Altho this test was only under way a few days when it came to grief because of several of the cows on the experiment reacting to tuberculosis, it went along far enough to prove that stover silage was eaten in considerable quantities with little waste. It did not prove as palatable as ordinary silage made from green corn, but the animals ate it with a relish. It appeared very certain that it will be eaten in preference to dry corn stover, and with far less waste. Better results for milk production can also be effected from feeding it in comparison with dry stover, since corn stover silage has some of the qualities of a succulent feed which always enables a cow to consume a heavier ration and thus have a great-duction of corn stover silage. This will vary, obviously, with the moisture content of the stover, a factor er amount of total nutrients available for milk production after maintenance requirements have been met.

The keeping quality of corn stover appears to be excellent, provided that sufficient water is added at the time of storage. At the present writing, part of the corn stover silage made in the experiment still remains in the silo in excellent condition, even tho it is two years old. With proper precautions in storage one can feel reasonably certain of success in the ensiloing of any stover that is in fairly good condition.

Amount of Water

The amount of water to add is probably one of the most important considerations in the successful pro- that should always be taken into consideration. It will be observed that two parts of water to one of stover were used in the experiment, but this stover was probably drier than what would likely be ensiloed in ordinary farm practice.

As a minimum, one pound of water to each pound of medium dry material that is stored directly from the field is the rule that is ordinarily given. The results of these tests would indicate that a greater amount is desirable. As will be observed in the table which follows, the moisture content of the samples taken in the experiment was none too high. In fact, the general appearance of some of the samples indicated that they were considerably below the most desirable point.

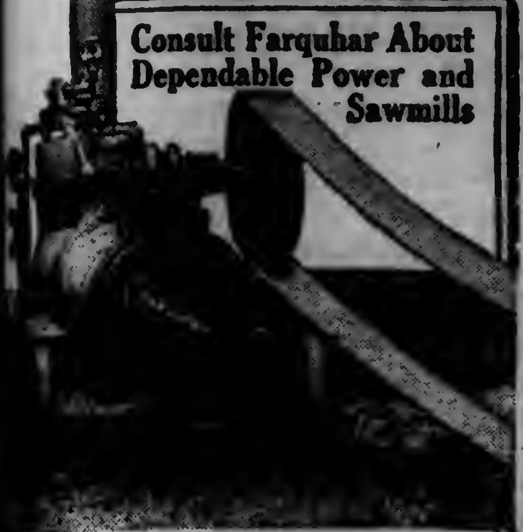
A laboratory test in which corn stover silage was made in quart glass jars was carried out, using varying amounts of water. After about one month the sealed jars were opened and the silage examined for acidity, aroma and general appearance. The stover used in these tests was very dry and as a result neither of the jars to which were added one part water to one of stover, and 1½ parts water to one of stover showed much fermentation, and a poor grade of silage resulted. In those jars to which two parts of water to one of stover were added, good silage was formed, but it did not appear to have as much moisture as it should. Good silage was also formed in the jars to which were added 2½ to 2¾ parts of water to one of stover, and the moisture content did not appear to be excessive.

As a general rule it appears that about two parts of water to one of stover should be used, when the stover has a medium moisture content. When it is quite dry, more should be used. When it contains considerable moisture, less may be used, with perhaps one of water to one of stover as the minimum limit. From observations in farm practice as well as in this test, it appears that there is always less danger of adding too much water than there is of not adding a sufficient amount. It is not believed that a moderately excessive amount has a deleterious effect, while an insufficient amount would cause failure.

It is very important that the water be added uniformly as silo filling takes place. If such is not done, water may follow channels down thru the silage and waste away at the bottom of the silo. In such an instance spoiled silage would result in parts of the silo, because of an insufficient amount of water.

A sufficient amount cannot be taken up in the blower of the cutting machine by turning a hose into it, and the only satisfactory way is to run a hose directly into the silo. At least two men should be provided for distributing the water and tramping and packing the material down properly in the silo. They should be provided with high rubber boots, since it is practically impossible to prevent getting the clothing wet almost to the hips without such provision, unless they do not move about as freely as they should in doing the work.

On farms that are not provided with a water system, the storage of corn stover silage is hardly a practical thing to attempt, since water is needed in such large amounts, and it would be hard to devise any other practical scheme to provide it. When a water system is used, a preliminary test should be made to determine whether the size of hose and pressure



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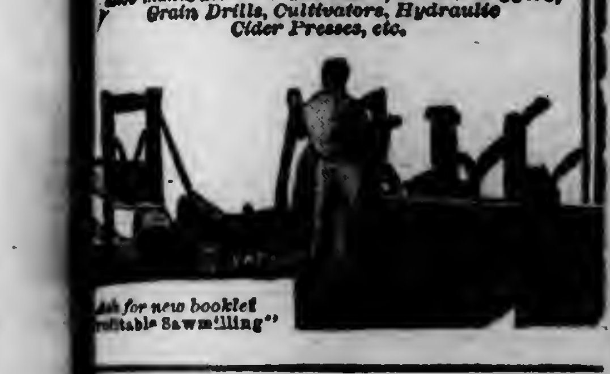

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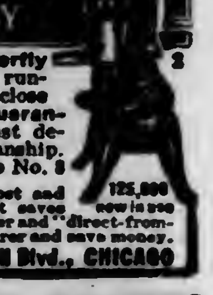

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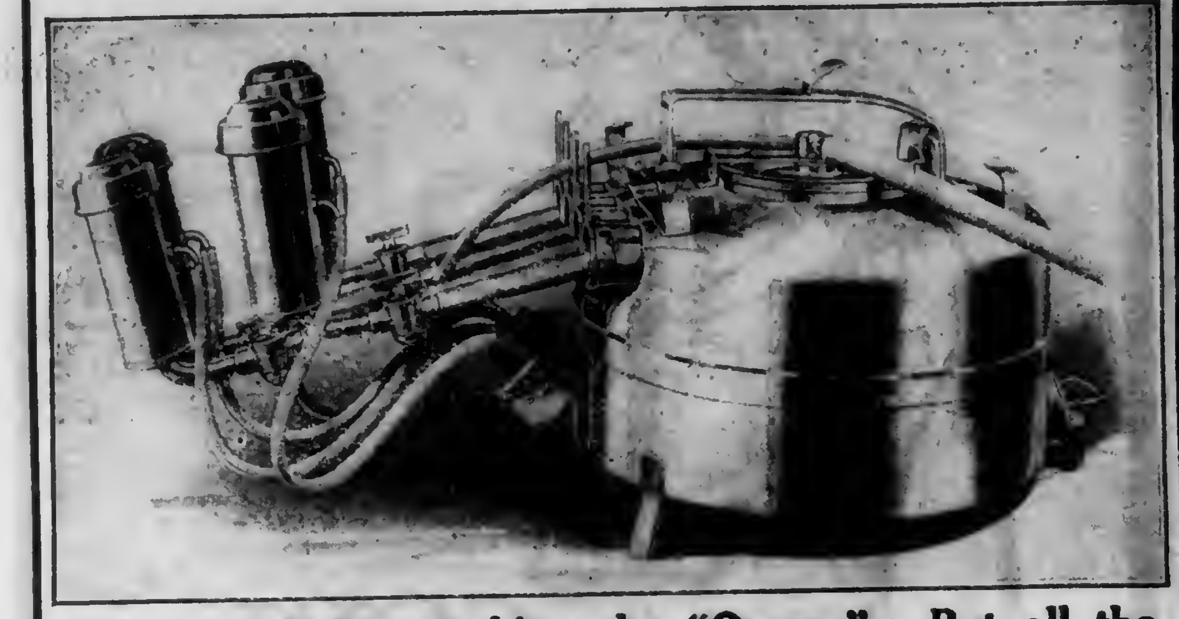

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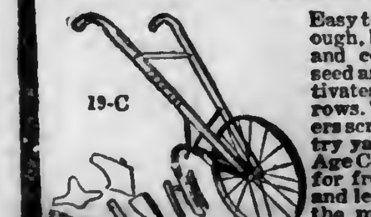

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365 Acre Farm in Buckingham Co., Va., 200 acres tillable. Ready to plant apple trees. 80 acre acorn orchard, fenced for hogs. 6,500 (half cash). 200 acres Central New York, $4000; 30 acres Connecticut, $3500; other smaller farms. HARRY VAIL, Owner. WARWICK, N. Y.

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are ample to give a satisfactory rapidity of flow. For example, if it requires 25 minutes when working rapidly, to store one ton of stover requiring two tons of water, the hose should provide at least one ton in this length of time. The hose can be kept running between loads when filling ceases, so as to make up for a moderate deficiency of supply while storage is actually going on.

When beginning to fill the silo, one should be careful not to add the water too rapidly. It takes a little time for the stover to absorb the water, and at the beginning the whole body of dry material in the silo may not be large enough to absorb the water as fast as it is applied. Wasting away of water thru the lower walls of the silo may result if care is not taken at the outset.

Chemical Changes

Beginning with the third day after the experimental silo was filled, samples were taken once every week for chemical and bacteriological studies. To secure these samples a two-inch auger with an eight-foot extension shaft was used to bore thru the silo wall and penetrate the silage mass to the center of the silo. By repeatedly boring in a short distance and drawing the auger out a sufficient amount of silage for the various tests was easily obtained, and the samples secured in this way represented the silage from the walls to the center of the silo. The samples were taken at different points all the way around the silo from three to eight feet from the ground.

The amount and character of acids in ordinary corn silage are known to affect silage quality profoundly. A study of the acids of corn stover silage was therefore deemed important in order to determine whether they were similar to those found in ordinary silage of good quality. The following tabulation shows the results of acidity determinations:

Acid Formation in Stover Silage

Age	Total Solids. a.	Acid in total solids Nonvolatile. b.	Acid in total solids Volatile c.	Ratio of nonvolatile to volatile
Weeks	Percent	Percent	Percent	
3/7	28.9	Trace	0.51	
1	35.5	0.16	0.87	1-5.40
2	26.7	0.95	1.36	1-1.43
3	26.8	1.36	1.41	1-1.04
4	27.1	1.54	1.49	1- .97
5	29.7	1.51	1.55	1-1.02
6	31.2	2.00	1.69	1- .85
8	27.5	2.53	1.92	1- .75
10	32.1	2.64	1.82	1- .75
12	25.8	3.15	2.24	1- .71

(a) Air-dried. (b) Calculated as lactic acid. (c) Calculated as acetic acid.

The total amount of acids found in corn stover silage was somewhat less than the amount usually found in ordinary silage, but such is to be expected when the nature of the two raw materials is considered. In work at the Iowa Experiment Station it was found that a fair general average ratio of nonvolatile to volatile acids in ordinary silage was 1 to 0.75. Considering this fact there is seen to be a remarkable agreement in the character of acids found in the two silages.

Silage Temperatures

It has long been the popular belief that silo fermentation temperatures play an important part in the quality of ordinary silage. There is considerable temperature data on record at various experiment stations which has been collected in the last few years. Similar data on corn stover silage was desired to see whether the two kinds of ensilage agreed in this respect.

Four electrical thermometers w installed in the silo at the time was filled and daily temperature re ings were taken for one m Weekly readings were taken th after for another month and a The temperature of the silage started at 42 degrees F. and a in a very few days to 57 degrees There was only a few degrees crease after that up to the end two and a half months. The temp ture of the atmosphere at the time filling the silo has been observed influence the fermentation temp ture to a great extent in making dinary silage. At the Missouri periment Station, good ordinary age was produced at temperatures exceeding 50 degrees F. In 1915 the Pennsylvania Station, temp ture readings on a concrete silo of ordinary silage of excellent qu ty did not exceed 70 degrees F. C sidering other temperature data well as that here quoted, it is ap ent that there is no wide differe if any, between the rate and am of increase in temperature in in which ordinary silage and stover have been stored.

Summary

To sum up, it may be said when corn stover is ensiloed wi suitable quantity of water, it un goes a fermentation with the pro tion of a palatable silage of keeping quality, which resembles dinary corn silage in aroma and pearance. The fermentation w takes place in it is essentially same as that of ordinary silag indicated by the amount and c acter of acids formed, and temp ture observations.

At this time, when measure conservation are so very import an appeal is made to farmer Pennsylvania and elsewhere to when possible in preventing the tremely large waste of corn st thru storing it in the silo. If are not in position to do the work year, it is none too soon to plans for it next year.

THE FEED SITUATION

The scarcity and the high pri feed are causing constant worr the dairymen and other live men. The regulations of the Administration specifying that price of bran in bulk, in carload at the mill, should not exceed 3 cent of the price of the wheat pe as well as the regulations issu February specifying mar charges for handling by brokers bers, and wholesalers, did not mediately produce the expecte crease in local prices.

Prof. Fred Rasmussen, of Pennsylvania State College adv two reasons for the delayed eff the regulations upon the price:

(1) They do not apply to cont made previous to the date of Since it is the practice of the to purchase on 30- to 60-day tracts, bran and middlings b previous to the date of issue still be in the hands of the local ers.

(2) Hundreds of cars of fe dered and started for the E October, November and Decemb not yet reached their destinat the month of February. Many ers bought on sight draft or on al draft before any regulations issued, and bran purchased a time is not affected by the r tions.

The Final Factor in the World War

To the American Farmer:

The winning of the world war, the war of Civilization against Savagery, rests, in the last analysis, with you.

Armies upon the far fields of France are as chaff before the wind except as they are supported by other armies as large, as determined and as heroic in the furrows at home.

Last year we increased the planting of six food crops—corn, oats, rye, rice, buckwheat and potatoes—by 22,000,000 acres, and we increased the production of those crops by 900,000,000 bushels over the five-year average.

But what we did last year is not enough. It is merely an earnest of what we must do this year. Up to this time America is not in the war twenty-five per cent. If we are going to win the war, we must get in one hundred per cent.

We are going to win the war, but recent events in Russia and Rumania indicate that if we are to win it in the near future, we shall have to put every ounce of our power into the fight.

We farmers must do our honest best to produce the greatest quantity and the best quality of food crops that we have ever grown.

City dwellers, as well as farmers, should make the best kitchen gardens they know how to make. Their wives should can and dry the greatest possible quantity of fruits and vegetables, so that their own tables may be supplied, so far as practicable, by their own efforts. By so doing they will "eat less freight", as well as fewer food products that can be transported to the armies over seas.

We must increase our production of hogs from fifteen to fifty per cent., and our production of poultry, goats and other meat and dairy animals, just as much as good farm practice will permit.

We must practice *frugality,* so that nothing will be needlessly consumed, and we must practice thrift, so that no money will be needlessly spent. All the money and all the food that the nation can save will be needed to win the war.

We must keep stout and loyal hearts; we must neither falter nor doubt.

The full duty of a faithful soldier of the furrows lies in these things.

I know—and the world knows—that you are made of soldierly stuff. You proved it last planting time. You will prove it again—and finally—when the broad fields of this good land are again white for the harvest.

Carl Vrooman
Assistant Secretary of Agriculture.

* * *

The Hercules Powder Company welcomes the opportunity to publish this important statement by Mr. Vrooman, and hopes, by so doing, to render some service to the Nation and to the American Farmer.

Agricultural Department
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Poultry

SMALL vs. LARGE POULTRY PLANTS

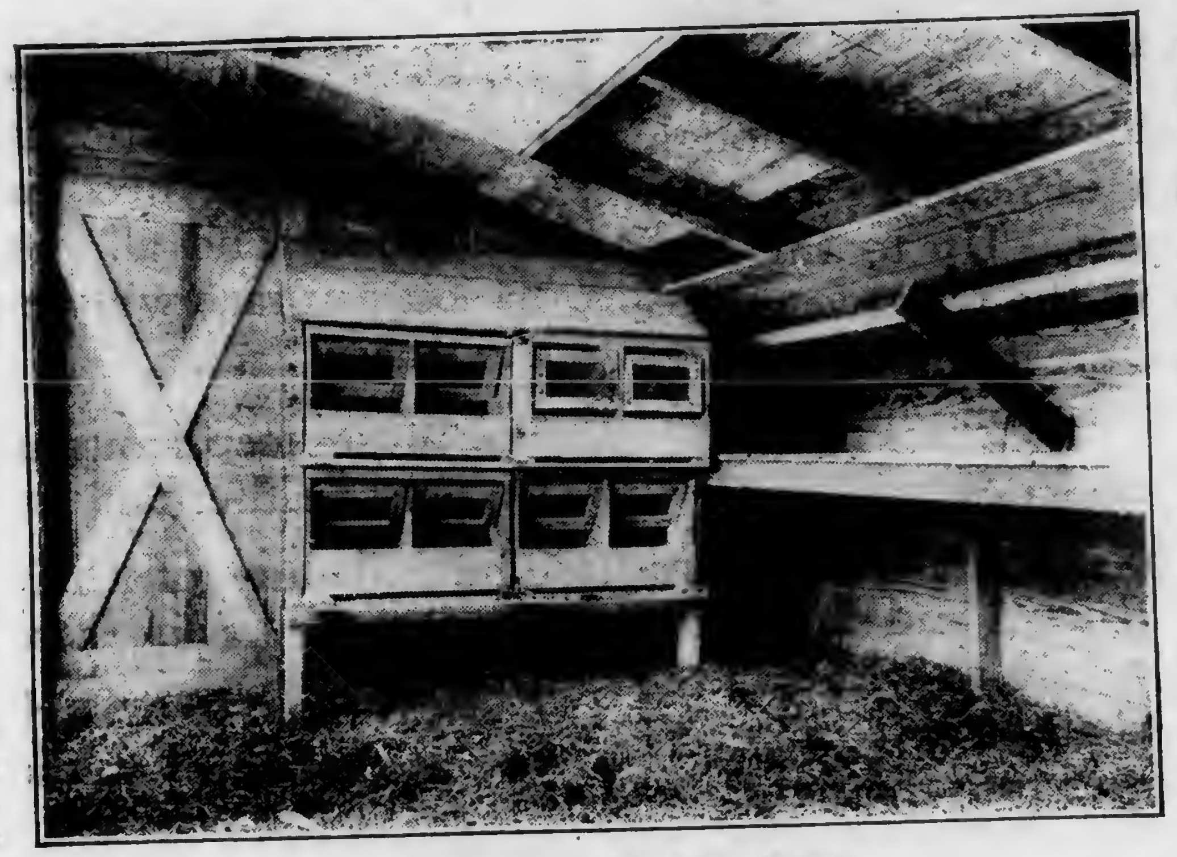
There is a whole lot of good sense in the following, which is taken from a yearbook of the Encyclopedia Britanica—What is needed is more poultry farmers scattered thruout the country—"Poultry on every farm" and good poultry, too. Poultry responds to fair treatment and good business judgment quite as well as any other line of good farming.

"Within the last few years the abandonment of a number of the largest spectacular poultry farms in America has had a marked effect upon the general attitude there toward large poultry projects. People are not so ready to engage in them or to take reports of quick successes on a large scale at their face value. The public is learning to discriminate, as qualified observers acquainted with the history of various enterprises of this kind have always done, between the real and the fictitious successes. There are many large poultry farms in the United States and the number may greatly increase, but too many of those kept prominently before the public as practical poultry farms have used the publicity that could be thus secured to advertise something that they had to sell, not to consumers of poultry produce, but to producers.

"The lines in which operations on a large scale have been undoubtedly successful for long periods are the growth of ducks for the market, and sale and exhibition of breeding fowls. Duck growing has been developed on a large scale on independent farms. Several of these for many years have produced about 50,000 ducks a year. One grower who operates two large farms some miles apart produces from 70,000 to 80,000 ducks a year. Farms producing from 10,000 to 15,000 ducks a year are much more numerous than those making a much larger output. The successful farms are all operated by owners who have built up from small beginnings. The plants established on a large scale at the start, as investments, invariably fail.

"The larger plants doing a business in exhibition and stock fowls grow only a part (sometimes a small part) of the birds that they sell. This is a necessary condition because selling ability and judicious advertising develop a demand far greater than can be supplied from the stock grown upon one farm. This class of poultry cannot be crowded but must have ample range. So as the business grows the breeder usually puts out as much stock as possible on other farms, and often also buys stock from smaller breeders. The latter leads to some abuses, but on the whole is to the advantage of all concerned. Very large plants of this type are not numerous.

"By far the greater number of poultry farms of all types are small, requiring the services of only one or two men. The plants for growing roasting chickens are on this scale, or smaller. Only a few of these have an annual output exceeding 2,000 or 3,000 chickens. The special farms at Petaluma, Cal., are on about the same scale. In the roaster growing section of Massachusetts and on the egg farms of Petaluma troubles due to carrying large stocks of fowls continuously on small areas of land are increasing. The same condition is apparent on many of the scattered farms. This and the gradual increase of interest in poultry among general farmers and those residents of town who have room to keep poultry constantly tend to restrict the growth of exclusive poultry farms. With variations due to difference in customs and economic conditions in different countries, the conditions of poultry production are much the same the world over. With the decline of confidence in mammoth poultry projects an unusual interest arose, as if in reaction, in methods of keeping small flocks of fowls in very close confinement. This plan was exploited largely by the sale of books, each of which described a 'System' devised by its author, whereby a very small number of fowls might be made enormously profitable. Such ideas had often been exploited in a small way. At this time skillful advertising on a very large scale enabled some of the promoters to realize very large profits. In America, where the movement started, it made quite a sensation for several years. In England it was at first ridiculed as characteristically American, but before long English promoters were exploiting similar ideas. The interest in these highly intensive methods still continued, but greatly abated. The indications are that the net result of the movement will be to add many recruits to the number of poultry keepers who use more rational methods."


Arrangement of Trap Nests

CURIOSITY MAY SPOIL HATCH

Many people using incubators forget the old maxim about counting their chickens, and by opening the door to see how many eggs are pipped, materially reduce the number finally hatched. The last three days of incubation are the most critical part of the hatching period, says T. S. Townsley of the Missouri College of Agriculture, and the care at this time has an important bearing upon the hatching percent. At this stage the control of temperature and the regulation of moisture supply are particularly important. The temperature after the eighteenth day must be watched carefully. The activity of the chicks creates heat and there is a tendency for the temperature to rise. Any considerable increase in the heat in the machine weakens the chick and drives out moisture, thus causing the chick to dry fast to the shell. Opening the incubator door to show the neighbors what a wonderful hatch is promised allows the the moisture to escape, cools the machine and thus gives the chicks a shock which adds materially to the list of dead in shell.

On the eighteenth day the machine should be closed and not opened again until the hatch is finished. During this time the temperature should be watched closely and regulated by turning the lamp down so that the temperature on a level with the top of the eggs will not be above 105 degrees. The machine should be darkened during the hatching period to prevent the first hatched chicks from trampling those coming out later. There is nothing gained by helping chicks out of the shells as those unable to get out unaided are not worth the effort required to help them out. After the hatch is finished the shells and unhatched eggs should be removed and the temperature of the machine gradually reduced to about 95 to 98 degrees and the chicks left in until the brooder is ready.

PICKING THE LAYERS

The hens that do not begin to moult until late in the fall are generally good layers. Contrary to the general impression, the hen that begins to moult early and has a new coat of feathers while most of her companions are still bare and ragged, is a poor layer.

Good layers naturally having yellow legs and beaks can be determined by noting the color of these organs late in the season. The coloring matter in egg-shells is secreted by the hen from the food she consumes. In heavy layers the food eaten will not supply sufficient coloring matter for the egg-shells and the hen draws on the supply stored in her body, with the result that her beak, legs and flesh become pale in color. For this reason, the hen that lays a light-colored egg, late in the season, is shown to be a better layer than the one that lays a deep brown egg. The hen that preserves the bright yellow color in legs and beak late in the season, advertises the fact that her system has not been under any undue strain in supplying coloring matter for the eggs she lays and she may be put down as a poor layer.

The good layer can also be determined by her shape. The good layer possesses a compact appearance, is broad across the back, and has a wide spread between the ends of the pelvic bones and the keel bone. The test usually applied is as follows: If but two fingers can be placed between the pelvic bones and the keel bone, the hen is a poor layer. In an ordinary layer three fingers can be placed between these bones, and in a good layer the spread between these bones will take four fingers. In extra good layers, the space between the bones may be as great as five inches. This is a logical and common-sense test, as a wide spread between these bones denotes plenty of room for the egg organs and for the formation of eggs.—T. Z. Richey, Ind.

THE MONEY-MAKING HEN

There are hundreds of farms that are ideal locations for poultry and egg production. No other farm product holds out the inducements for handsome profits that are presented by increased production of poultry.

By the artificial method any one can increase their output as much as they desire. It costs but little more to raise a pound of poultry than it does to raise a pound of pork or beef and it sells for two and three times as much in the open market.

While you may not question the value of an incubator or brooder in the hands of an expert, perhaps you feel a lack of experience and doubt your ability to handle one successfully. If so, you need have no fears in that regard. All up-to-date incubators and brooders are constructed along natural lines and are so simple, that by following the plain directions that accompany each machine any one, even if he has never seen one before, can succeed from the start.

Another thing that may discourage the small producer who depends on the old hen, is his vision of costly buildings, laying houses, brood houses, wire runs and other things connected with a large poultry plant. Nothing of this kind need trouble you. The most successful poultry farms with which I am acquainted have but few and very inexpensive buildings. The modern colony system makes an economical beginning not only possible but practical whether on the scale of a hundred hens or whether you wish to raise them by the thousands. Any one can increase the output of both poultry and eggs with but a small investment in buildings, incubators and brooder fixtures. The best and cheapest plan is the use of the small colony house, both for rearing chicks and providing winter quarters for laying stock. Colony houses range in size from 4 by 6 feet to 10 by 12 feet. Some are built permanently, such as the mushroom house which is built on posts. Probably the best style is the one built on runners, as it can be drawn to fresh ground occasionally, and the labor of plowing or digging up the yards or runs can be avoided. To save time and expense of labor on the colony plan, self-feeding hoppers are used. Hoppers should be large enough to contain sufficient feed for a week. Very good colony houses can be made of cheap rough lumber or packing cases. The roof and sides should be covered with prepared roofing, the front or south side with wire netting for summer and cloth screens in winter. The cloth screen gives ventilation without draughts and is far better and cheaper than glass.

That there is money in the poultry business, nobody connected with it doubts. The failures in raising poultry for profit are not any greater than in any other line of business. Men start in and build up a business that amounts to thousands of dollars every year and is considered on the of the regular and growing industries. The poultry business now is growing as it never did before. It is certain to keep on growing for many years. The country is becoming more thickly populated all the time, and the chance to raise the larger meat animals is growing smaller. This leaves an opening for poultry which must be filled by increasing the number of fowls kept in the country.

The poultryman's products can be sold in any town. It doesn't make any difference where he is located; he always has a market for his stock and eggs.

The man who starts to raise chickens does not take any chances, he knows about what his expenses will be and for what he can sell his products. Other farm crops may fail but the poultry raiser does not feel the effects. If you start a factory, fashions may change, other inventions take the place of the machinery you make, or many other things may happen. In the poultry business nothing of the kind will happen. You furnish the poultry and eggs and a hungry public buys it at any time.

A word about purebred "fancy" poultry. There is just as constant a demand for purebred poultry as there is for market poultry. The man who produces high-class poultry gets high-class prices and the prices are going up every year. Birds that have been line-bred for years are worth a good price, whether they have been bred for the show room or for heavy egg production or both. Chickens which have been carefully selected and line-bred for years for heavy egg production will produce more eggs in a year than the common barn-yard stock which have been unbred for years and are left to mate "any old way". Purebred strains of fowls will make more weight of flesh on a given quantity of feed and produce more eggs than any flock of mongrel hens in the world.

By selecting the ones that mature most quickly or the pullets that lay the most eggs, for your breeding pens and doing this every year you will be able to produce a strain of heavy-laying, quick-maturing fowls. You cannot afford to keep scrub hens when good ones, or eggs from good ones, may be bought at a price that will allow the buyer to get his money back the first year, and as much in addition as he would have lost by continuing to keep the common kind. It does not cost any more to feed and house a chicken that lays 150 eggs a year than it does to feed and house one that lays only 60 eggs and the returns are one and one-half times greater.

All one needs in the work is an interest and common sense enough to profit by the experience of others, as well as to try and improve on other people's methods. Get the best stock you can afford to buy even if it is only a few. When you start right you are sure to go right. For the small amount of money required I know of no other business that will bring quicker and better results than poultry. — F. G. Christman, Montgomery Co., Pa.

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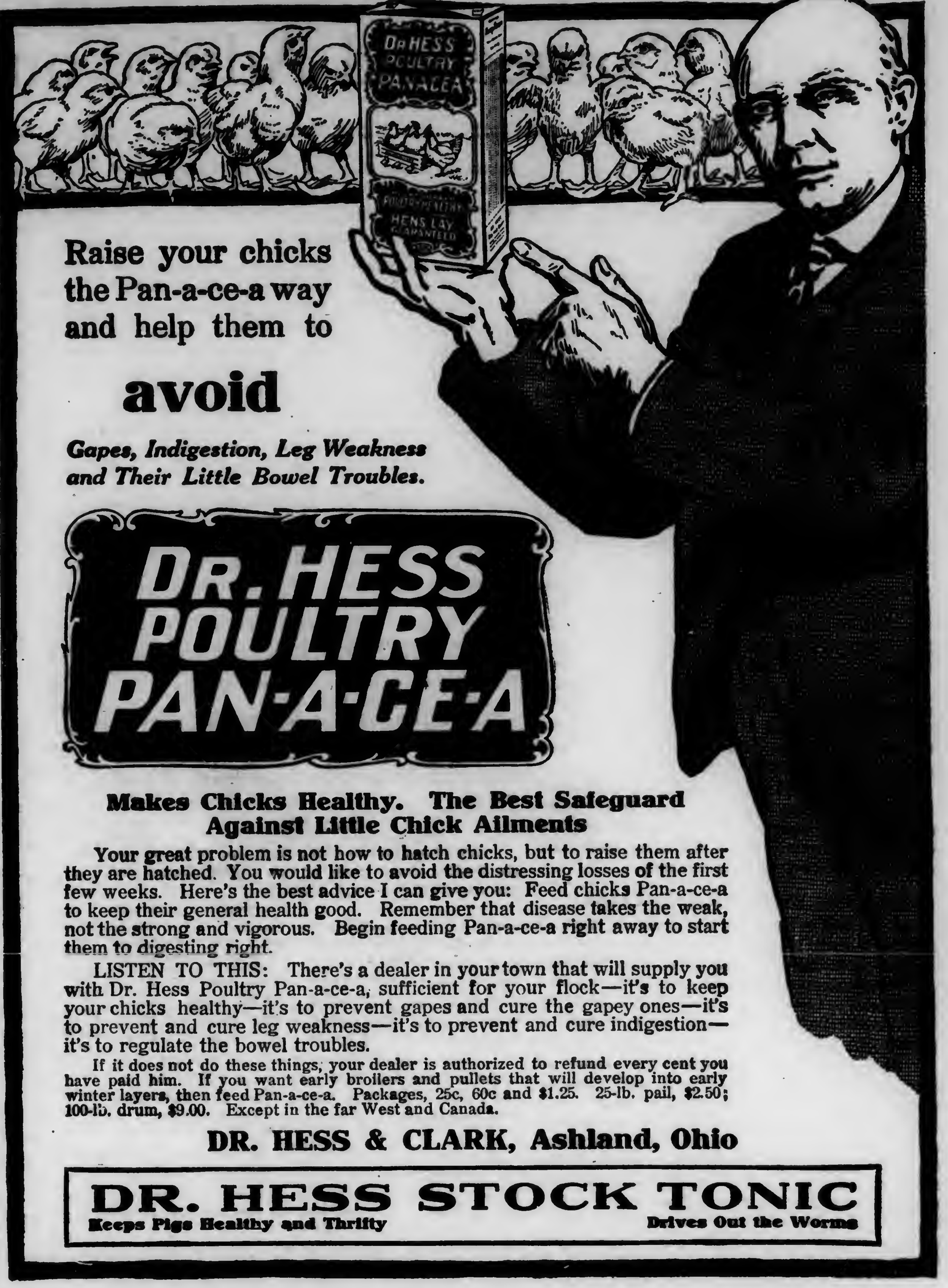
It is stated that there are 1,200,000 fewer sheep in the United States now than when the war began, and the United States is manufacturing more than twice as much wool as it produces. These facts seem to point to opportunities in sheep raising where conditions are favorable.



Raise your chicks the Pan-a-ce-a way and help them to

avoid

Gapes, Indigestion, Leg Weakness and Their Little Bowel Troubles.

DR. HESS POULTRY PAN-A-CE-A

Makes Chicks Healthy. The Best Safeguard Against Little Chick Ailments

Your great problem is not how to hatch chicks, but to raise them after they are hatched. You would like to avoid the distressing losses of the first few weeks. Here's the best advice I can give you: Feed chicks Pan-a-ce-a to keep their general health good. Remember that disease takes the weak, not the strong and vigorous. Begin feeding Pan-a-ce-a right away to start them to digesting right.

LISTEN TO THIS: There's a dealer in your town that will supply you with Dr. Hess Poultry Pan-a-ce-a, sufficient for your flock—it's to keep your chicks healthy—it's to prevent gapes and cure the gapey ones—it's to prevent and cure leg weakness—it's to prevent and cure indigestion—it's to regulate the bowel troubles.

If it does not do these things, your dealer is authorized to refund every cent you have paid him. If you want early broilers and pullets that will develop into early winter layers, then feed Pan-a-ce-a. Packages, 25c, 60c and $1.25. 25-lb. pail, $2.50; 100-lb. drum, $9.00. Except in the far West and Canada.

DR. HESS & CLARK, Ashland, Ohio

DR. HESS STOCK TONIC
Keeps Pigs Healthy and Thrifty — Drives Out the Worms

Dr. Hess Instant Louse Killer Kills Lice

Protect the Crop

Don't waste time and money in preparing for a good yield and allow insect pests and blight to destroy the crops produced. Spray with:—

CALICIDE
BORDEAUX—ARSENATE

Highest In Analysis

Save every penny put into the crop. Calicide is the best all-around spray for killing chewing insects and preventing plant diseases. It will pay you to write us immediately for convincing literature and prices.

Reading Chemical Co., Reading, Pa.

For Codling Moth And Scab use

SULFOCIDE and CAL-ARSENATE

—a new combination which bids fair to replace the old Lime Sulphur-Arsenate of Lead and Bordeaux-Lead mixtures, in both orchard and garden.

It is more powerful and much less expensive. 1 gallon and 3 lbs. makes 150 gallons of spray.

Send for circular

B. G. PRATT CO., *Mfg. Chemists*
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Too Late to Classify

I offer Wilson Soja Beans—My own growing: per bushel $6.25—Bags 35 cents.
R. P. LOVETT. FALLSINGTON, PA.

Wanted To Buy high graded Holstein cows, close springers not over three years old, or high graded Holstein heifers to come in shortly. Must all be bred to registered pure blood Sires. Also one young registered pure blood bull, ready for service. State full particulars and lowest prices.
F. H. HARJES, Jr. Valley Forge, Penna

Experienced Vegetable Grower returned from Florida seeks place with vegetable grower or seedsman in Pennsylvania or Jersey. Not a "common laborer" man. Or will work equipped farm on shares. Address Yankee, care Pennsylvania Farmer.

Wanted Second hand vinegar equipments, generators, tanks, steam cookers, also apple butter cooker. Address
W. M. HARRIS, WYOMING, DEL.

REG. Ayrshires. 5 cows, 5 yearling heifers, 5 heifer calves. Good breeding. Inquire
LENT BROS. WYSOX, PA.

Reg. Shorthorn Cattle Young bulls and heifers.
R. H. LYLE. CADIZ, OHIO

Sweet Clover seed, special scarified, hulled and unhulled. *Circular and prices on request.* John A. Sheehan, R. 4, Falmouth, Ky.

Please mention Pennsylvania Farmer when writing to advertisers.

Facts, Figures and Advice on Potatoes

THE POTATO AS A FOOD CROP

A careful consideration of the relative world magnitude of the potato from the production standpoint reveals the fact that even prior to the war it far exceeded in number of bushels that of any other table food plant. The statistical data, as presented in Table I, include the production of potatoes, oats, corn, wheat, rye, and barley. The production of rice is purposely omitted, owing to incomplete data, but there is every reason to believe that, if complete statistical information were available, the world's rice crop would probably be a close competitor with wheat in so far as volume of production is concerned.

TABLE I

Crop	World's production in bushels	United State's production in bushels	Percent of world's crop produced by the U. S.
Potatoes	5,453,419,000	354,095,600	6,49
Oats	4,323,736,000	1,131,219,400	26.16
Corn	3,807,036,000	2,752,371,600	72.30
Wheat	3,725,551,400	697,459,000	18.45
Rye	1,788,286,600	35,460,000	1.98
Barley	1,407,505,000	181,273,000	12.35

Analysis of the data shows that the potato crop far exceeds by one billion bushels that of oats; 1½ billions that of corn, and nearly 1¾ billions that of wheat. The rye and barley crops are less than one-third that of potatoes.

A consideration of the relative magnitude of these crops in the United States as compared with the world shows that we only produce 6.49 percent of the potato crop. We do not rank very high as a potato producing country.

Home vs. Foreign Potato Production

A further interesting study can be made of the potato crop by comparing the production of the United States with that of some of the leading foreign potato producing countries. Such a comparison enables one to study in greater detail the relative position of each with respect to volume of production.

Germany's crop represents 30.8 percent of the total world production; Russia, 22.9; Austria-Hungary, 12.1; France, 8.9; United States, 6.5; Great Britain, 4.6; Belgium, and the Netherlands each about 2 percent. Another very interesting comparison may be made from these data relative to the production per acre. Ranked on this basis, Belgium leads the list with an average of 274.6 bushels. The Netherlands come next with 265.7; Denmark, third, with 232.3 bushels; Switzerland, fourth, with 218.3; Great Britain, fifth, with 217.6; and Germany, sixth, with 203.6 bushels. The remaining nine countries rank as follows: Sweden, 168.2; Canada, 163.7; South America, 160.3; Austria-Hungary, 135.5; Spain, 128.7; France, 127.4; Russia, 112.5; United States, 96.2; and Italy, 92.5.

As determined by acreage and value of the crop produced, the potato occupies sixth place among the crops grown in the United States. If, however, it is considered on the basis of a table food product, it undoubtedly is only second to wheat. The data as presented in Table III shows quite clearly that corn is by far the most valuable agricultural crop produced in the United States. Its total value is greater than hay and wheat combined and it is seven times more valuable than the potato crop. In production per acre, potatoes are easily in the lead. This is also true with respect to the acre value of the crop. In such comparisons, however, it is very necessary to take into consideration the cost of producing a crop of potatoes, as compared with corn, hay, or wheat, in order to avoid inaccurate or misleading conclusions. Take corn, for example, in which the value of the crop is based entirely upon the selling value of the grain, whereas it should be based on both grain and stover. The main object of introducing these data is that of affording a ready means of comparing the potato crop with that of the main agricultural crops grown in the United States, in order that the relative importance of each, both agriculturally and economically, may be easily grasped.

TABLE II

Average acreage grown and bushels produced in the leading potato growing countries of Europe and America, 1909 to 1913, inclusive:

Country	Area in acres(a)	Total bushels	Pct. of world's crop
Germany	8,260,250	1,681,959,000	30.8
Russia	11,127,250	1,251,425,600	22.9
Austria	4,888,250	662,202,400	12.1
France	3,841,000	489,376,800	9.0
United States	3,679,500	354,095,600	6.5
Great Britain	1,169,250	254,438,200	4.7
Netherlands	414,500	110,152,600	2.0
Belgium	389,667(2)	107,021,000	2.0
Spain	715,000(3)	92,051,500	1.7
Canada	475,750	77,872,400	1.4
Sweden	379,000	63,759,200	1.2
Italy	657,500	60,813,400	1.1
S. America (1)	301,000	48,338,800	0.9
Switzerland	185,667(4)	40,537,400	0.7
Denmark	139,667(5)	32,440,400	0.6

(a) Average 1911-1913
(1) Argentina and Chile
(2) 1911, 1912, and 1913 data
(3) 1910 and 1912 data
(4) 1911, 1912, and 1913 data
(5) 1910, 1911, and 1912 data

All data in tables 1 and 2 from the year book of the United States Department of Agriculture.

TABLE III

Average acreage production and value of the six leading farm crops of the United States for the years 1912 to 1916, inclusive.

Crop	Area in acres	Average production per acre	Average acre value of crop
Corn	105,697,800	26.2 bus.	$16.94
Hay	50,750,400	1.5 tons	17.17
Wheat	52,558,600	15.4 bus.	15.27
Cotton	34,971,000	0.38 bales	22.57
Oats	39,458,600	32.9 bus.	13.21
Potatoes	2,674,800	98.4 bus.	69.61

These data were obtained for the years 1912 to 1914 from the 1915 year book, while that of 1915 and 1916 were taken from the December first report of the Bureau of Crop Estimates.

TABLE IV

Average acreage and production of potatoes in 10 leading states for the years 1912-1916:

Rank	State	No. Acres	No. Bus.	Bus. per acre
1	New York	352,400	32,485,000	91
2	Michigan	347,800	30,139,800	86
3	Wisconsin	295,600	28,865,400	97
4	Maine	133,600	28,560,800	212
5	Minnesota	271,000	28,223,000	105
6	Pennsylvania	270,000	23,909,000	89
7	Ohio	157,800	12,833,600	80
8	Virginia	115,400	11,833,300	100
9	Iowa	141,200	11,247,600	78
10	New Jersey	91,200	10,252,400	113

(This article is adapted from an article by William Stuart in Market Growers' Journal.)

EARLY POTATOES IN FLORIDA

The area planted to early Irish potatoes in Florida this year is estimated to be 32,730 acres, as compared with 19.344 acres in 1917, an increase of 13,386 acres, or about 69 percent.

Up to the present time the weather has been unusually favorable. No frosts have occurred during the growing season and abundant rains have furnished the needed amount of moisture over the greater portion of the potato belt.

In former years Florida potatoes have been shipped mostly in barrels, but this year the supply of barrels will be inadequate and a large part of the crop will be shipped in 10- and 11-peck sacks while a few sections will use bushel crates.

PLANT POTATOES

The president and secretary of the Pennsylvania Potato Growers' Association have sent out a circular letter giving their views upon the general outlook for the coming potato crop, and also a resume of the factors in the last two years' production which led to the present unsatisfactory situation.

Mr. Chester K. Shultz, the president, points out that during 1916 the acreage was below normal for two reasons: First, the price received for the preceding crop was so low as to be discouraging when compared with other food crops. Second, the labor shortage was already being felt in many potato growing sections. The yield per acre was small in 1916 because of unfavorable weather conditions. This short crop was rapidly consumed because the people had formed the habit of eating potatoes during the previous year of low prices. All these factors contributed to an extreme shortage and high prices by the end of 1916, so that the nation-wide agitation to raise potatoes met a hearty response from farmers and countless back-lot gardeners.

The season of 1917 was a most favorable one in most sections for the potato crop. The yield was immense and prices began to drop last fall. The early and severe winter prevented marketing, and in some instances digging as well. As a result millions of bushels have not been sold. These conditions, together with the fact that the cost of planting and raising the crop of 1917 was far above the average, have tended to depress the potato raiser and cause him to hesitate about planting many this year. Mr. Shultz, however, takes an optimistic and also a patriotic view and says he will plant the usual acreage.

THE POTATO CROP FOR 1918

This subject is one of grave importance today not only to the farmer and grower but to the consumer also. By the time the potato crop is grown this year, the food question may have assumed such grave proportions that the people of our nation will have to depend upon the potato as the main article of diet and the supply will of necessity have to be exceedingly large or it will not meet the demand.

Many farmers cannot sell their 1917 crop and break even on cost of production. They are sore and inclined to plant more corn and less potatoes in 1918, and this feeling may cause a dangerous shortage in the potato crop. The writer is a farmer and potato grower and feels that our patriotism should not permit a short potato crop this year. We should raise our usual amount and more if possible.

When our food administrator called for a large potato planting, it was the farmer who planted the increased acreage that really counted and it took cash and lots of it to grow potatoes last season, and now the price is below the cost of production and it is the only crop of any importance grown last year under those conditions.

The writer feels that there should be some way to bring the prices paid to the grower and that paid by the consumer closer together. As an illustration, the prevailing price at our county seat since last fall has been $1 to the grower and $1.50 to the consumer, also a few days ago I was offered 60 cents a bushel and the merchant was selling for $1 per bushel. Would it be possible in all cities of 4,000 inhabitants and upwards to have a public market where the 66⅔ percent middleman's profit could be eliminated entirely and the expense borne by the city?

Many of the consumers in the towns and cities look upon the present low price of potatoes as a joke on the farmers, but let me give a note of warning: If something is not done to bolster up the price of that part of 1917 crop now on hand, it will cease to be a joke to the consumer before 1918 is over. The consumer needs the potato more than the farmer needs to grow it. —George C. Strong, Adams Co., Pa.

HOW CAN WE KEEP THE HOME FIRES BURNING?

We are wondering seriously if in any section of the world today, the social life of the communities is not materially affected. With many of the young people gone, more going, and the rest of us doubly burdened by the added worry and the effort to fill the gaps and keep things from stopping entirely, how can the general effect be otherwise? The severity of the winter, too, has had a deadening effect upon the social life of our home community—many important social functions have occurred here while the thermometer registered about 30 degrees below zero, the wind blew a hurricane, and the roads were practically blocked with snow. For most people, it would be suicidal to go far at such a time, and the need of conserving our health and strength is greater now than ever before.

As a rule, the rural social gatherings cannot be lessened wthout loss. but how can the loss be prevented? In our neighborhood at present we have a country church with Sunday School, mid-week prayer meeting, and Epworth League, besides the regular preaching service; we also have a W. C. T. U., Red Cross, Dairymen's League, Fruit Growers' Association, and Ladies' Aid. The latter is temporarily suspended and everything is rather poorly patronized. The organized Sunday School classes stood the strain longest, but even they are not receiving the support formerly accorded their monthly social meetings.

The existing institutions have previously proven perfectly satisfactory, and we still believe that they meet the community needs as well as any organization can; but the widespread, nation-wide, and perhaps world-wide, immorality, which seems to be creeping into everything at the present time, contributes more than any other one factor toward ruining the efficiency of any society by which it is permeated. Perhaps it is not more common than formerly; it may only be more in evidence because more light reaches it. But the fact remains that people are taking note of an unusual number of moral lapses, and history records the fact that such things do flourish well in times of great national stress and peril—paradoxical as the statement may sound!

Our own community seems "rotten", but when comparing notes with friends in other sections, I find that ours is no worse than theirs and I doubt if Western New York is more immoral than other sections of our own state or of the other states in the Union. Surely, the time is ripe for the most strenuous community betterment campaign that has yet been launched; the need never seemed more pressing or the trusted community leaders more prone to "flunk". Frankly, I have no remedy to offer, but I am very optimistic in the belief that in the economic readjustment that is bound to come sooner or later, these evils will, to a very great extent, mend themselves. A very general revival of religion is already in operation and it must eventually clear the atmosphere to an appreciable degree.

Perhaps my thought fails to reach the heart of the need expressed in the editorial, but it is a question to which we have given very serious consideration this winter and have arrived at no satisfactory solution. further than the determination to fight the existing evil to the best of our ability individually, spare no reasonable effort to clean up the existing social institutions, and trust Providence to crown our efforts with ultimate success. Surely the time is near when the fight need not be an individual one because more and more good people are joining the ranks of the workers.—A, New York.

ENFORCING THE DOG LAW

Many inquiries asking for advice on certain features of the Dog Law of 1917 are being received by Secretary of Agriculture, Charles E. Patton, who is charged with the enforcement of the law.

One burgess ruled that as a borough ordinance forbade the shooting of firearms within the borough limits, no dogs could be shot.

Concerning this feature an opinion from the Attorney General states:

"Under the police powers of the state the borough has the right to enact regulations for the peace, health, protection and morals of the community, which do not encroach upon the general powers of the state; but could not by municipal enactment prevent a sworn officer of the law from enforcing a statutory provision of the state.

"On the point in question Section 18 of the Dog Law provides:

" 'It shall be the duty of every officer to kill any dog which does not bear a proper license tag which is found running at large.'

"While a borough may prohibit the shooting of firearms within the borough limits, no such ordinance was ever intended to prohibit the regularly constituted peace officers from discharging firearms in case of riot, insurrection, disturbance of the peace, enforcement of the law, or in making arrests, but in its application has particular reference to reckless or promiscuous shooting of firearms."

In one county the Commissioners were advised that the County Treasurer could not issue a license unless the owner made application for license before the fifteenth of January.

An opinion from the Attorney General's office clears this situation and shows that licenses may be granted at any time. The opinion states:

"It is clear and positive that one of the principal objects of this act is to require the licensing of all dogs.

" 'On and after the 15th day of January, 1918, it shall be unlawful for any person to own or keep any dog six months old or over unless such dog is licensed by the Treasurer of the County in which the dog is kept.' (Section 17).

"This is obvious and as the County Treasurer issues the license upon application, there is no other method to be followed. The Legislature intended that all dogs over a certain age should be registered and licensed and penalty is fixed for a non-performance of duty.

"There is contained in the Act no express or implied prohibition from the granting of licenses upon proper application and it is the opinion of this Department that County Treasurers must continue the issuance of licenses upon application without regard to the failure of the applicant to make the said application on or before January 15th; and the owner, therefore, who failed to make application before the date can do so afterwards and obtain the necessary license."

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Wonderful value for the money! A wonderful car in every sense of the word! The new Elcar gives you everything you can ask in an automobile; fine appearance, up-to-date conveniences, plenty of room, unusual riding comfort, low upkeep, lasting quality.

Brief Mention of Elcar Points

Four-cylinder models have powerful, long-stroke Elcar-Lycoming motor, developing 37½ horsepower at 2,100 r. p. m. Six-cylinder models have famous Continental 3¼ x 4½ inch engine, developing 40 horsepower at 2,100 r. p. m. Two unit electrical system. Outside of the power plants, the Elcar sixes and fours are practically the same. Long wheel base, 116 inches; road clearance 10½ inches. Full floating rear axle with spiral bevel driving gears. Timken roller bearings front and rear. Double universal drive; tubular propeller shaft, copper cellular radiator. A wonderfully easy riding semi-elliptic spring suspension. Roomy and comfortable bodies of beautiful design and durable finish; new "Cathedral Pipe" upholstering. Equipment complete, even to motometer on radiator.

It doesn't cost much to run an Elcar. An average of 18 to 24 miles is secured to a gallon of gasoline. 1000 miles are averaged to a gallon of oil. Tires give long mileage due to light weight and good balance.

The 116 inch wheel base gives an abundance of room. The motor is powerful and speedy —responsive and flexible. The built-in quality insures dependable service for years to come. Every part is built 150% strong.

The Elcar is a beautiful car. Has long, graceful, distinctive lines. High class body and paint work. It holds its good looks a long time and will give dependable service for years.

Don't think of choosing a car until you have seen the new models of the Elcar. Ask for nearest dealer's name, if you don't know him.

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Write for catalog illustrating and describing the 1918 Elcar models. We mail it to anyone interested.

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Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

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The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.
For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service, Dept. of Labor
Philadelphia, Pittsburgh, Harrisburg, York, or Erie, Pa.

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Soy Beans as Food

Uses in the Human Diet

Now that soybeans have become almost as common as corn, oats and wheat in many sections, we frequently hear the question "Are they good for human food?" In answer we may state that the uncounted millions of people in China and Japan use them as a regular article of diet, and as they are very rich in protein, no other food, except meat, is so well adapted to balance the diet of a people whose chief cereal, rice, is composed mostly of starch.

As a race, Americans are very fond of beans. Their palatability and high food value, together with their reasonable cost under ordinary conditions, commend them to the American housewife as a staple article of diet. However, when dry navy beans and kidney beans retail at 20 cents per pound, they are discarded from the bill of fare in a large number of homes. As a cheap and equally valuable member of the bean family, let us introduce soybeans.

In the Orient, the whole beans are seldom used as we commonly cook beans in this country. True to his peculiar traits and fancies, the Oriental has learned to prepare several artificial foods from the beans.

Soybean Milk and Tofu

The basis of tofu, or soybean cheese, is soybean milk. This is prepared by adding, by weight, ten parts of water to one part of finely ground soybeans, and heating the mixture almost to the boiling point for 20 or 30 minutes. When strained off, the milk has a whitish color, and is composed of protein, fat, carbohydrates and mineral salts in proportions which do not differ widely from cow's milk. Approximately 600 pounds of milk can be made from one bushel of soybeans, and while it is rather strong in flavor and not generally palatable to Americans when used alone, it can be substituted for cow's milk in custard, white sauce, corn starch pudding, bread and milk, etc.

When soybean milk is permitted to sour, the grayish curd which settles is known as tofu, an indispensable daily article of diet with the people of China and Japan. This curd can be eaten as we eat cottage cheese, or it can be salted and fried, or made into salads. It contains from 7 to 10 percent of protein, and from 4 to 5 percent of fat, hence it can be classed with bread and butter in food value. If it were more generally known and used in America, it would doubtless become a popular article of diet in American homes.

Soy Sauce or Shoyu

In the manufacture of soy sauce, a mixture of cooked soybeans and roasted wheat flour and salt is allowed to ferment from one to two years in casks. When completed, it is a thick, brown liquid, with a strong, salty flavor. It is universally used in the homes of China and Japan, and great quantities of soybeans and wheat are consumed in its manufacture. While its food value is not important, it can be used in many ways as a relish or flavor, in chop suey, broth, gravy, soup and cooked vegetables. At present it can only be obtained from the Chinese and Japanese markets, as it is not made in America, and it is almost unknown here, except in combination with Oriental dishes, such as chop suey.

Miso is another fermented product which is made from ground soybeans mixed with barley and salt.

Whole Beans Boiled or Baked

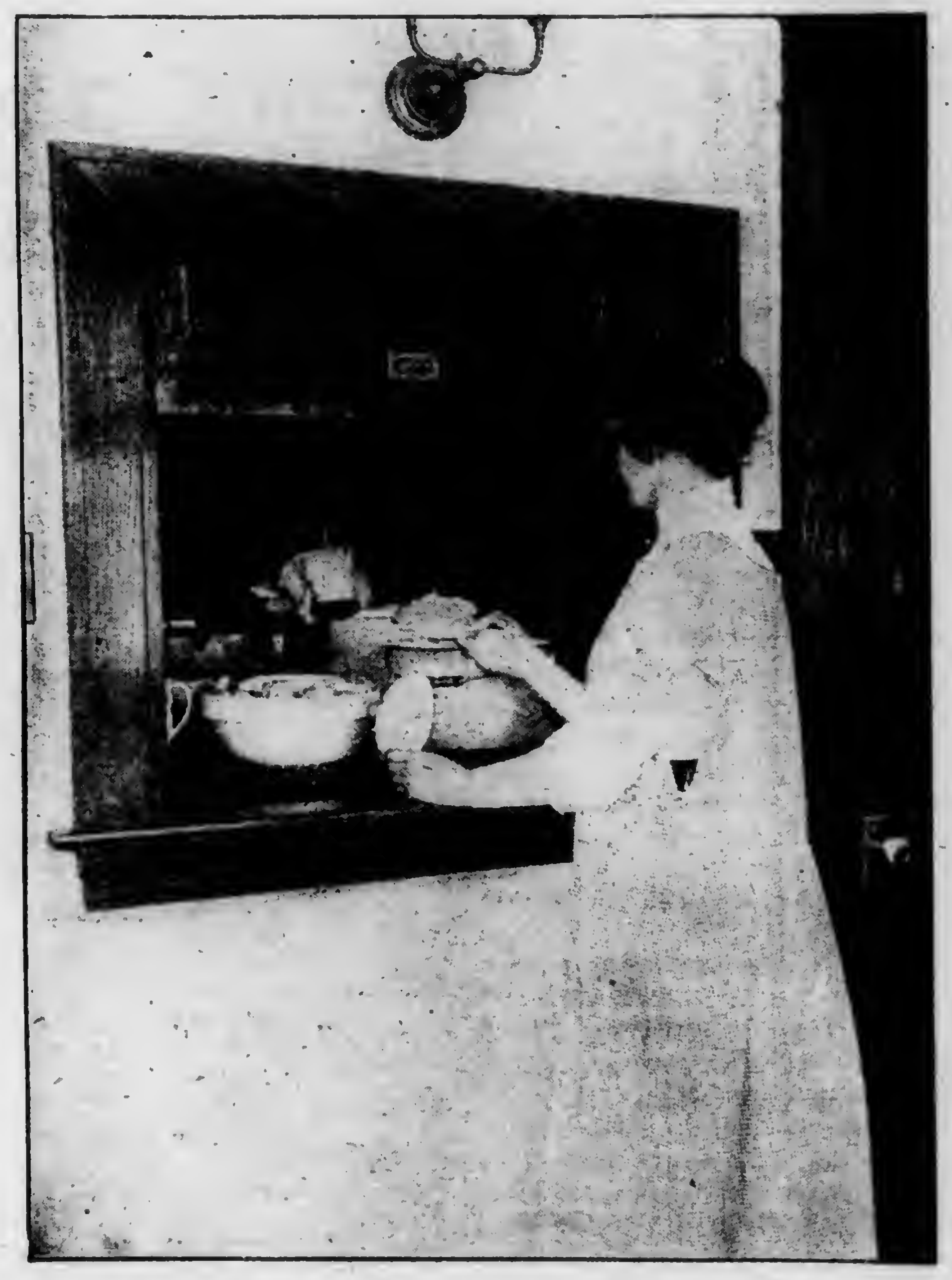
In this country we generally use beans whole, either boiled or baked, and soys can be used in either manner. To remove their strong flavor, the beans should be soaked over night in plenty of water, about one gallon to each pint of beans, by hanging them in a bag just beneath the surface of the water, which should be hot when the beans are placed in it. In the morning, boil them 15 minutes in fresh water to which a teaspoonful of soda has been added, after which the boiling or baking can proceed as with navy beans.

Before they mature, soybeans are relished by most persons when boiled in salt water, similar to green limas. As they are difficult to shell when green, they should be boiled in the pods, as they can be readily shelled after cooking; then re-heat the shelled beans, and serve with milk and butter.

Soybean Flour

Soybeans can be finely ground, and the flour is useful in a number of ways. It should be used while it is fresh, as the oil becomes rancid in old flour. Sometimes the oil is removed from the flour, after which it keeps as well as wheat flour. When mixed with cornmeal, three parts cornmeal to one part soybean flour, it makes a delicious and highly nutritious mush, which browns quickly when fried.

Soybean bread is largely used in some parts of Europe. This form of bread contains about one-fourth soybean flour. It would seem that an extensive use of soybeans, in the form of bread, or in some other form, would be highly desirable in this country, particularly in the south, where the ordinary diet is deficient in protein. Soybeans contain 60 percent more protein than navy beans, which are at present our most valuable source of vegetable protein. They contain more than twice as much protein as ham or eggs, and more than three times as much as wheat flour. Moreover, they are more easily digested than navy beans, and their protein and fat are almost completely digested and assimilated. The evident economy of using this cheap and valuable vegetable food should lead to an enthusiastic increase in their everyday use.—John Marsh, Ohio.



Handy Dumb Waiter Saves Steps

FOOD POINTERS FOR LIVE COOKS

Wheat saving has thrown us into a culinary revolution. The best cook is the one who experiments the most daringly, and learns the quickest. The "expert" with a lifetime of wheat cookery behind her is at a serious disadvantage. She always has had flour to work with, and is lost without it. Our cook books must be written anew; and the young housekeepers will do it. Some few pointers will help.

No country in the world has ever had such a wealth of breadstuffs as ours. Wheat is not even the best of them. The sensible thing to do is to learn to like the others as they deserve. Since we must do without wheat, do not try to get up a sorry imitation of a wheaten loaf. Use the others for what they are, not for their availability as wheat imitations. Don't expect corn meal to fool your yeast cake. Yeast won't work on corn. Every ounce added to wheat flour is that much dead weight in the leavening process.

Don't imagine that the place of the baked loaf can be taken by boiled grains bought in cartons of fancy colors. Rice, barley, hominy, oatflakes are all good food in their place, but they won't take the place of bread. Don't think you are doing any more for the war because you mix up and eat something you do not like and make a duty of eating it. It will do just exactly as much good if you manage to have a good time eating your war rations—and you can. There is no merit in self-inflicted discomfort.

Old-time housekeepers used potatoes in their bread to make it keep moist and fresh longer; only two or three to a good sized baking. Too much makes the bread soggy. Hoover's list of substitutes gives a fine variety of palatable and nourishing cereals. All of them can be used as flours with baking powder, either as griddle cakes or biscuits. Don't mix them. Learn the goodness of each separately, changing from day to day.

A hand mill or a first-class coffee mill is almost indispensable under present conditions. Buy the rice and pearl barley and the ear corn—if you can get it—and the oatflakes, and grind them yourself as fine as you can, as you need each. The flours made from these just now are almost double the price of the grains.

Don't buy granulated corn meal, or any kind, unless you know when it was milled. It deteriorates as fast as the best butter. Even when fresh granulated meal is fit only to make into mush.

Don't be afraid to try new mixes, and when you find one that works out right, tell your neighbors.

At the time of the great Irish Famine, half a century ago, charitable Americans sent a shipload of corn to the sufferers. They knew nothing about it, more than we do here, now, and they made gruel of it and fed their starving babies. Countless died in consequence, of bowel complaints. Since then the Irishman has no use for "the yally male". Corn gruel is a medicine, a purgative, hardly a food. Mush is of the same sort, less so. Bake your cereals.

On starchy flours from other grains than wheat, yeast may be expected to make acceptable breads. With the gummy ones, such as oat flour, there may be results of better quality by the old "salt-rising" process, which is a fermentation of the glutenous elements. But who knows how in this day to make the delectable old salt-rising bread?

Throw a handful of oatmeal, the finer the better, into a big pie tin. Salt it to your liking. Pour in enough water to cover it, and set in a slow oven to bake dry. "Dry" means until it is brown all thru, and will snap like a ginger snap or a fresh cracker. Then it is ready to eat, and you'll wish the pie tin was larger.—Chas. H. Darlington, Chester Co., Pa.

CORNMEAL YEAST BREAD

One of our best-liked breads, and one that keeps moist for days, and is as good cold as any of the white flour loaves, is made as follows: For one loaf make a mush of ⅔ cup of yellow cornmeal sifted into 1½ cups of boiling water or water and milk and cooked a few minutes. (If the meal is put into cool liquid, then gradually brought to boiling, and stirred occasionally while boiled for 10 minutes, you will have no trouble with lumping, as the meal is likely to do if sifted into boiling water unless sifted very slowly and constantly stirred during the sifting.—Editor.) Cool to lukewarm, and add ½ cup warm water and ½ cake of compressed yeast, or about ½ cup fresh, active, home-made

potato yeast; add 2 tablespoons fat, 2 tablespoons sugar, 1 tablespoon salt and 1½ cups wheat flour. Knead or stir thoroly into a soft dough and let rise over night. In the morning add 1 more cup of wheat flour, or enough to knead the dough rather softer than the usual white bread and put directly into the baking tin. When double the bulk, bake about an hour. Cut when thoroly cold. It has a creamy color, fine flavor and is tender and moist, and saves considerable wheat flour.

Sugarless Cookies

Our favorite cookies contain no sugar, and are of fine color and flavor. Place 3 tablespoons shortening in a cup and fill it with molasses, add 1 heaping teaspoon soda, 3 tablespoons water, and 1 tablespoon salt. Mix soft with flour, and let stand in a cool place a couple of hours. This makes a harder dough with the use of less flour, and when baked the cookies are of finer texture. By using a little less flour, this makes a fine dessert cake; for dessert, bake the dough in a long sheet, cut while fresh in generous squares and pour over each a bit of whipped cream slightly sweetened with honey, flavor with lemon and add a preserved plum or a spoonful of strawberry or any rich preserves on top. If cream is not at hand, a cornstarch custard may be used instead.—Mrs. Mabel G. Feint, Dryden County, N. Y.

COTTAGE CHEESE

During these times when meats and other protein foods are scarce and high in price the housewife will find it economical to use cottage cheese as a substitute. Nutrition experts tell us that one pound of cottage cheese has a protein value equal to that of various kinds of meats as follows: 1.27 pounds of sirloin steak; 1.46 pounds of fresh ham; 1.58 pounds of loin pork chops; 1.52 pounds of fowl, or 1.31 pounds of hind leg of calf.

Large quantities of skim milk that might be made into cottage cheese is now being wasted or fed to hogs and other live stock. Many difficult problems in the manufacture and marketing of the cheese have in the past kept it from being more generally used. But now that it is so important to save meats and the housewife can make such a saving by using cheese as a meat substitute, it is important that it be placed on the market in larger quantities.

MAKE SOAP AT HOME

Let us revive the old industry of home soap making. Save the wood ashes separately from the coal ashes, build an old-fashioned leach and secure a good supply of lye. Save all the waste fat from the kitchen, including the ham and bacon rinds. These fats when fed to the chickens or hogs are worth but little more than the same amount of grain. They are worth three or four times as much when made into soap. The ham and bacon rinds and other waste kitchen grease can be boiled up with the lye without previous rendering of the fats and will make a good soft soap for scrubbing or laundry purposes.

For making a good hard soap for general household use the fat should preferably be rendered and clarified. Caustic soda should be used instead of the lye from the wood ash leach. At slaughtering time any smeared fat that is not fit for making lard or any tallow that is not wanted for edible tallow should be rendered for soap grease. In this connection it is recommended to cook up the cleaned entrails for hog or chicken feed. The grease should be skimmed off and used for soap grease.

The following directions if followed will give a good quality of soap for all household purposes, says Doctor Trowbridge of the Missouri College of Agriculture. Put one pound of lye into an iron or stone vessel, pour on slowly one and one-third quarts cold water. Stir with a stick until dissolved, then allow it to cool. Heat eight pounds of soap grease or tallow until it is all melted. Cool until it is luke warm, then pour the cooled lye solution into the warm grease and stir thoroly until well mixed and of a uniform consistency. Then pour into a wooden box lined with waxed paper or wetted cloth. Cover and set in a warm place for several days. Turn out of box and cut into bars.

ENGINE POWER FOR FARM WOMEN

Gas engines should be used more generally for daily work by farm women. Many kinds of work ordinarily accomplished by women on the farm thru physical exertion should be done with the aid of a gas engine. Running the washing machine, ringer, grindstone, cream separator, churn, dishwasher, bread mixer, and pump are some of the uses to which an engine may be put. If the engine is connected with an electric generator it will run a sewing machine and other electric appliances.

The automobile run by a gas engine enables the farm wife to deliver promptly and hence profitably butter, cream, eggs, chickens, and other products to the merchants. Not only is this profitable financially but it is a means of furnishing a diversion from the steady grind of farm work. Since women are less muscular than men they should have machinery to do more of the work in which they are engaged. The stationary engine and gas engine must be equipped with self-starters and other devices to reduce the required labor in starting.

Women as power machines are less effective than men. The farm labor problem is one that women will be called on to help solve, and every aid must be given to help make this work easier and more productive. It has been proved by tests that a man as a power machine when turning a crank for eight hours a day can develop only one-eleventh of a horse power. A wage of 25 cents an hour means a cost of $2.75 a horse power hour. A gas engine will develop one horse power hour for one cent at the present cost of coal oil.—W. W. Carlson in Kansas Circular.

A CANADIAN FOOD BUDGET

If you are inclined to feel that American food regulations are weighing heavily on you, consider that England has gone on specified rations and each citizen must present his card to secure his weekly allotment. Or compare your present fare with the following weekly budget suggested for adoption in Canada. The following is intended for a week's allotment for a family of five—a man and his wife at moderate work, a boy of 12 years and two other children:

Milk.—Seven quarts whole milk.

Fruit.—Fourteen pounds according to season.

Fats.—Two pounds butter or oleomargarine; one pound cooking fat.

Sugars.—Three pounds of sugar; one pound corn syrup, molasses or honey.

Cereal Products. — Ten pounds flour; 10 pounds cereals in other forms.

Fresh Vegetables.—Forty pounds potatoes; 14 pounds other fresh vegetables.

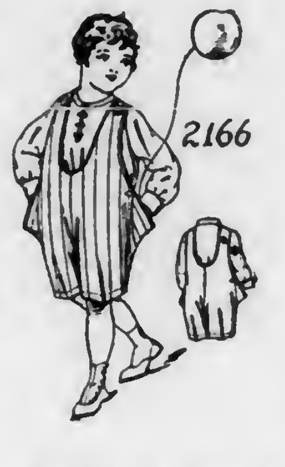
Meat and Meat Substitutes.—Four pounds lean meat; two pounds fresh fish; one pound salt fish; one dozen eggs; one pound cheese; two pounds dried beans or split peas.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

Clothes for Boys

2166.—Boys' "Overall" or Play Suit.—This is a fine style for khaki, gingham, chambray, linen, lawn, corduroy, galatea, poplin or drill. The blouse may be of lawn, cambric or linen, and may be finished with long or short sleeves. The pattern is in 4 sizes: 2, 3, 4, and 5 years. It requires 1¼ yards for the blouse and 2⅛ yards for the overalls, of 27-inch material, for a 3-year size. Price, 10 cents.



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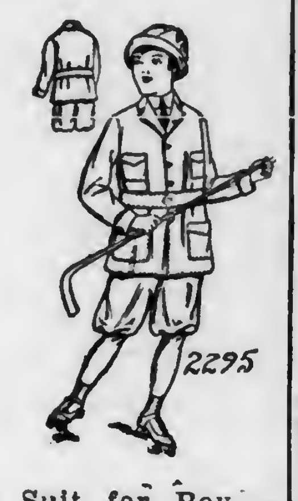
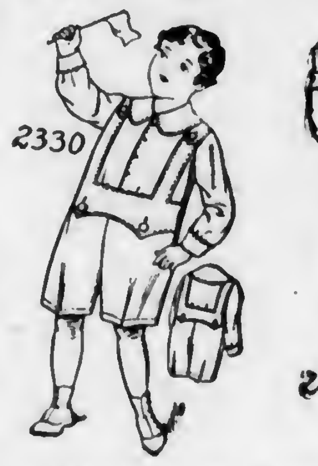


2295

2295.—A Smart Suit for Boy.—The coat is single breasted and open at the throat. The cuffs may be omitted. The trousers are made with front closing and side and back pockets. This pattern is in 4 sizes: 6, 8, 10 and 12 years. Size 10 requires 3⅛ yards of 44-inch material. Price, 10 cents.

2330.—Suit for Little Boy.—The blouse could be of drill, madras, linen or flannel, and the trousers of serge, cheviot, or of wash fabrics. The suspender portions are a new feature. They could be omitted. The pattern is in 4 sizes: 2, 3, 4 and 5 years. Size 4 requires 1¼ yards of 44-inch material for the waist and 2⅛ yards for the trousers. Price, 10 cents.



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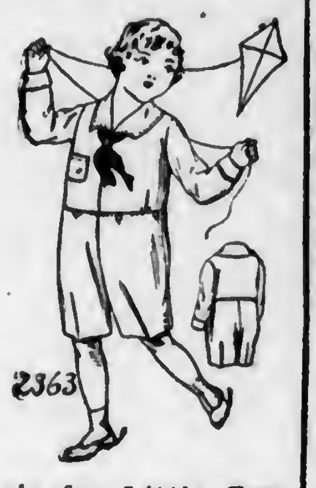

2363

2363.—Good Style for Little Boy.—Waist and trousers may be of the same material, or the waist may be of madras, cambric, percale or linen, and the trousers of khaki, serge, cheviot or corduroy. The trousers are made with side closing. The pattern is in 4 sizes: 3, 4, 5 and 6 years. Size 4 will require 2⅜ yards of 40-inch material. Price, 10 cents.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 8, 1918.

With supplies of old potatoes more plentiful than they have been for several weeks past, and car lots of new Southern potatoes making their appearance, old potatoes are weak and lower, showing a decline of from 15 to 25 cents per cwt. over last week. Pennsylvania and New York states are selling from $1.50 to $1.75 per cwt. Eastern Shore barrels are drawing from $1.75 to $2.50 and New Jerseys from 40 to 60 cents per ⅝-bushel basket. The first carloads of new potatoes made their appearance and sold from $5 to $8 per barrel as to size.

Sweet potatoes are showing practically no change. Receipts are moderate, but demand is rather slow. New Jersey stock is selling generally from $1.25 to $1.35 for primes, with seconds and medium grades from 60 cents to $1. Eastern Shores in bushel hampers are selling generally from $1.50 to $1.75, with a few at $1.85, while No. 2's and medium are drawing from 75 cents to $1.15.

Vegetables

The dried bean market is showing practically no change from last week's report. The demand, however, is rather limited and the tone of the market is easy and prices may decline. At this writing Marrows are selling from $15 to $15.25 per cwt.; pea and medium, $13.50 to $14; red kidneys, $13.75 to $14.50. The supplies of asparagus are more plentiful and the market is gradually declining, altho good prices are still prevailing. California asparagus is now selling all the way from $2.50 to $7.50 per dozen bunches according to size and quality. Georgia asparagus is drawing from $2 to $5.50 per dozen as to size and South Carolina from $1.90 to $5.50. Artichokes are much more plentiful, and the market is from 75 cents to $1 per box lower than last week; now ranging from $3 to $3.75 per box. With supplies of green and wax beans showing quite some increase, the market is lower and ranging generally from $1.50 to $2.75 per bushel hamper, with a good demand and movement at the decline. New beets are in light supply and steady at 5 to 7 cents per bunch, with crate ranging from $1.25 to $2.

Old cabbage did not long maintain the spurt which was reported in these columns last week, most of the stock is poor and needs trimming. Sales are being made all the way from $20 to $30 per ton, as to quality. Old carrots are in good demand when fancy and sell readily at $1.75 per barrel, bht most of the supplies are only ordinary and these are moving slowly at $1 to $1.25 per barrel. Cauliflower is in light supply and taking a sharp advance. At this writing best cauliflower is selling at $1.75 to $2.25 per crate. Celery is also in light supply and higher on fancy, which is selling up to $2.25 to $2.50 per crate, with poor stock selling from $1.25 to $1.75. Cucumbers are in much more liberal supply and prices much lower than last week. Sales are now made at $3 to $3.50 per bushel hamper or box. Egg plants are very scare and firm; fancy selling at $4 to $4.50 per crate, with poor stock lower as to quality. Horse radish is in liberal supply and prices are generally unchanged from last week $3 to $6 as to size and quality. The market is weak and tendency lower. Kale has again declined. Supplies are liberal and best stock is now selling at $1 per barrel, with poor from 65 to 75 cents. Lettuce is in light supply and higher. Florida hampers are selling at $2.50 to $3.50, Southern Carolina, $4 to $4.25, and California Iceberg at $2.50 to $3.75 per box.

The onion market continues dull, weak and draggy. One extra fancy car from Colorado reached $1.20 per cwt., but outside of this, average sales ranged from 75 to 90 cents, with poor and badly sprouted from 25 to 50 cents. Onion sets are about $1 per bushel lower, prices ranging generally fom $3.50 to $4.50 per bushel. Parsnips are in light supply but unless strictly fancy are not wanted. Parsley is in excessive supply and moving slowly at $2 to $2.50 per barrel. Peppers are in light supply and steady at $2.50 to $3.50 per crate. Radishes continue to draw high prices; Norfolk selling at $2.25 to $2.50 per bushel hamper and Mississippi from $7 to $8 per barrel. Hot house rhubarb is selling from 25 to 50 cents per bundle with nearby Pennsylvania and New Jersey drawing 5 to 6 cents per bunch. Romaine is in light supply, and steady at $1.75 to $2.25 per hamper or box. Scullions are in fair supply and meeting a good demand at $1 to $1.50 per 100 bunches. Shallots are selling generally from $4 to $4.50 per barrel. Spinaach is in fairly liberal supply and slightly lower than last week, selling mostly at $1.75 per barrel with extra fancy at $1.90 and poor at $1.50. Tomatoes are now selling generally from $3 to $3.75 for fancy 144-size, with choice 180-size from $2.50 to $3.25. Rutabagas are dull and weak, having very little demand, with best selling at about 75 cents per cwt. Turnip greens from Maryland and Delaware points are mostly poor and ranging from 50 cents to $1 per hamper. Watercress is in fair supply and steady at 1½ to 2 cents per bunch.

Fruits

Receipts of apples are not heavy, but the trading is quiet and the market is practically without change. The tone is firm for fancy large fruit, the proportion of which is very small, but medium and lower grades of apples are dull and irregular. The bulk of the supplies is composed of Ben Davis and Baldwins, very few of any other variety now being offered. Range of values about as follows: Baldwins, $3 to $5.50; Ben Davis, $2.75 to $4.25; Black Bens, $3 to $4.50; Ganos, $3 to $4.25; Greenings, $3 to $5; Winesaps, $3.50 to $6; Hubbardsons, $2.50 to $4; Starks, $2.50 to $4; York Imperials, $3 to $5; unclassified, mixed, common, $2 to $3.50. Box apples are meeting a good demand, with fancy desirable sizes bringing high prices. These are selling about as follows: Winesaps, $2 to $3.25; Spitz, $2 to $2.50; Yellow Newtown Pippins, $1.50 to $2.25; Black Bens, $1.50 to $2.50; Ben Davis, $1.50 to $2.25. Strawberries continue in light supply, only one or two cars arriving daily so far. Heavier supplies are expected at almost any time and of course prices will then decline. Sales are being made now from 28 to 30 cents per quart. Pineapples are increasing in supply and the market easing off with sales now ranging from $3 to $5 per crate.

Poultry

There is very little change to note in the live poultry market. Supplies are light, demand active and the market firm at quotations, with now and then a few sales of extra fancy stock a little higher. Soft meated young roosters are selling generally from 38 to 43 cents; staggy young roosters, 32 to 36 cents; old roosters, 30 to 35 cents; ducks, 38 to 43 cents; geese, 38 to 43 cents; guineas, $1.25 to $1.50 per pair; pigeons, 35 to 50 cents per pair.

Eggs

The egg market is showing a still further decline. While supplies have been quite plentiful there has been a strong consuming demand and supplies have cleaned up daily. Nearby current receipts are selling from 35 to 36 cents; firsts, 35 to 36½ cents; Western, 35 to 36½ cents as to quality and Southern from 32½ to 33½ cents.

YORK PRODUCE MARKET

York, Pa., April 8, 1918.

The unusually fine weather has put a stop to many of the farmers attending market. Spring work has started in earnest, this means that all other things take a secondary place. Hence small attendance at the city markets. Prices are the same as last week. Potatoes offered in plenty, and whatever price the buyer offers is gladly accepted.

Eggs.—34@35c per dozen.

Butter.—Country, 45@48c lb; separator, 48@52c lb. Milk, 10c quart.

Poultry.—Roosters, 20@25c lb; dressed, 75c@$1.75 each.

Vegetables.—Potatoes, 8@12c ½ pk; 40@90c bu; lettuce, 5@10c hd; beets, 5c bch; radishes, 3@5c bch; onions, 5c bch; 8@10c ½ pk; lima beans, 18c pt; soup beans, 15@18c pt; celery, 5@10c stalk; turnips, 20@25c ½ pk; corn meal, 10@12c qt.

Country Butchering. — Sausage, smoked, 32@40c lb; pudding, 24@28c lb; cured meats, hams, 42@45c lb; sliced, 45@64c lb; bacon, 60c lb; bologna, 15c ¼ lb; dried beef, 15c ¼ lb; lard, 32@34c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, $1; rye, $2; bran, $2.40 cwt; middlings, $3 cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.75; oats, 95c; rye, $1.70; bran, $48 ton; middlings, $52 ton.

BALTIMORE PRODUCE

Baltimore, Md., April 8, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1@1.25 cwt; do., New York, $1@1.25 cwt; Eastern Shore, 75c@$1 cwt. Sweet potatoes, yellow, $3.50@4 bbl; $1.40@1.65 hamper. Asparagus, $3@3.50 crate. Beets, 3@6c bch. Cabbage, Danish, $20@25 ton. Celery, Florida, $1.25@1.75 crate; do., native, 5@6c bch. Lettuce, $1@2 basket. Onions, yellow, 50c@$1 per cwt; red, 50c@$1 per cwt. Tomatoes, $2.50@4.50 crate.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5; New York State, $4@6; do., No. 2, $3.50. Strawberries, 15@35c qt.

Butter.—Creamery, western, extras, 44@45c; firsts, 42@43c; pound prints, 45@46c; do., firsts, 44@45c. Nearby creamery, 41@42c; do., firsts, 40@41c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 33@34c; Eastern Shore and Virginia, 33@34c; Southerns, 33c. Duck eggs, 37c dozen.

Live Poultry. — Chickens 38@40c; do., rough, 28@30c; old roosters, 28@30c; ducks, 29@33c; turkeys, 30@35c.

Hay and Straw.—No. 1 timothy, $32.50; standard timothy, $31.50@32; No. 2 timothy, $31; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover, $30.50@31.50; No. 2 clover, $28.50@30. No. 3 do., $28@29. No. 1 straight rye straw, $22; No. 1 tangled, $20@21; wheat straw, $18@18.50; oats straw, $17@20.

Grains.—Wheat, bag lots, $2.10@2.15 bu. Corn, bag lots, white, $1.85 bu. No. 2 white, $1.95; ear corn, $7.75@8 bbl. Standard white oats, $1.01½@1.02; No. 3 white, $1.01@1.01½. Rye, No. 2 western, $2.70; bag lots, $2.10@2.20 bu.

PITTSBURGH PRODUCE

Pittsburgh, Pa., April 8, 1918.

The produce market is mainly steady. Potatoes are slow at quotations with abundant supply. Onions are weaker. Old cabbage is about cleaned up. New southern stuff moves fairly well at quotations but old produce is quiet.

Potatoes, car lots, $1.30 to 1.40 cwt; sweets, $1.75@2 hamper. Onions yellow, 50@75c per 100-lb. bag; do., white, 50@75c. Cabbage, $20@30 ton. Parsnips, 45@50c bu. Turnips, 50@60c bu. Carrots, 50@60c bu. Lettuce, $1@1.25 hamper. Celery, $1.50@1.75 crate. Tomatoes, $2.75@3.50 crate. Radishes, 20@25c bch. Beets, 50@60c doz. bunches; asparagus, $2.50@4 box; cucumbers, $1.25@2 doz; rhubarb, 50@60c bdl. Apples, $4@6 bbl.; $2@2.75 box. Strawberries, 25@30c qt.

Dressed Poultry.—All lines of dressed poultry holds steady under light demand. No fresh-killed stuff moving.

Hens, 34@40c lb; springers, 35@40c; broilers, 42c; roosters, 32c; ducks, 38@40c; turkeys, 38@43c.

Dairy Products.—All grades of butter are one cent below last week's quotations. Cheese is steady but eggs declined one cent per dozen.

Elgin prints, 45@45½c; Elgin tubs, 44@45½c; Ohio and Pennsylvania dairy, 40@41c; cooking butter, 32½@33½c. New York cheese, 28½@29c; do., Ohio, 26½@27c. Selected eggs, 37@38c; eggs at mark, 35@36c.

Hay and Grain.—There is a gradual easing off in the hay and grain market. Corn is about steady but oats are slightly lower. All grades of hay fell off from $1 to $2 per ton.

No. 2 yellow ear corn, $2@2.07 bu; No. 3 yellow shelled, $1.80@1.90; No. 2 white oats, $1.02@1.02½; No. 3 do., $1.00½@1.01; standard oats, $1.01½@1.02 bu; No. 1 timothy hay, $30@30.50 ton; No. 2 do., $26@27. No. 1 mixed hay, $29@30 ton; No. 1 light mixed, $27@28.50. Rye straw, $18@19.50. Oat straw, $17@17.50. Wheat straw, $16.50@17.

LANCASTER PRODUCE

Lancaster, Pa., April 8, 1918.

Another glut in the local egg market drove prices down from forty cents to as low as thirty-three cents, on Saturday, but despite the spirited sales, thousands of eggs were carried back to the farms. Butter was also over-plentiful, and sold from 55 to 58 cents per pound. Potatoes also offered in large quantities were offered as low as ninety cents per bushel.

Butter and Eggs.—Creamery butter, 50@58c per pound; country butter, 55@58c. Fresh eggs, 33@35c doz.

Poultry.—Dressed old chickens, $1.25@1.50; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 13c bch.; spinach, 20c ½ pk; turnips, 20c ½ pk; potatoes, 12@15c ½ pk; do., 90c@$1 bu; sweet potatoes, 20@30c ½ pk; new beans, 60c ½ pk; lettuce, 20c; dry onions, 10@12c box.

Grain Market.—Wheat, $2.10 bu; chicken wheat, $2.10; ear corn, $1.62; corn, $1.72; rye, $2.15. Timothy hay, $29@30 per ton; mixed hay, $28@29; wheat straw, $18@19.

NEW YORK PRODUCE

New York City, April 8, 1918.

The butter market was a little more brisk at the close of last week and trade is now firm. Trade in cheese is light and market is dull. Egg market unsettled and prices lower. Live poultry sells readily. Potato trade is slow and market weak. Apples in fair supply at steady prices.

Butter. — Creamery, extras (92 score), per pound, 41c; higher score, 41½@42c; thirds to firsts, 36@40½c; state dairy, 34@41c; ladles, 31@35c.

Cheese. — Colored specials, 25@25½c. Daisies, 25@26c.

Eggs.—Fresh gathered extras, 37@38c; extra firsts, 35½@36½c; nearby white, fine to fancy, 38@40c; ordinary to good, 37@38c; browns, 37@38c.

Vegetables and Greens. — Beets, per bbl. $1@2. Onions, per 100-lb. bag, 25c@$1.25. Potatoes, Jersey, $1@1.75 per 100 lbs.; state and western, $1.60@2 per 100 lbs. Carrots, 75c@$2 per barrel.

Apples.—Winesap, $4@6; York Imperial, $3.50@5.50; King, $4@6; Baldwin, $3@6; Greening, $4@6; Northern Spy, $4@7.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 8, 1918.

Beef Cattle.—The market for steers, bulls and cows ruled firm, with demand absorbing the limited offerings. There was still some complaint of stock being delayed in transit, tho transportation conditions were improved. Calves were quiet and a shade weaker.

Steers, choice, $13@14.40; common to fair, $11.50@13; bulls, $8.50@11; extras higher; cows, fat, per lb., choice, 8½@10c; fair to good, per lb., 7@8½c; bologna cattle, choice, 5½@7c; calves, extra choice, $18.50@19; fair to good, $17.18; common, $14@16; Tennessee and southern, $9@17.

Sheep and Lambs.—There was little trading in either sheep or lambs, but offerings were only moderate and values were steadily held.

Sheep, wethers, extra, $15@15.50; good to choice, $12@13.50; medium, $10@11.50; common, $8@9.50; ewes, heavy, fat, $13@14. Lambs, choice, $19.25@19.50; do., medium, $17@18; inferior, $14.50@16.

Hogs.—The market was quiet, and offerings, while moderate, were ample for requirements. Transportation difficulties were, in some instances, delaying stock. Prices were steadily maintained. Quotations for best western, $20.

City Dressed Stock.—There was a slight advance in the market for steers and heifers, due to light offerings and a good demand. Calves, sheep and lambs were quiet and showed little change.

Steers, 19@28c; heifers, 17@21c; cows, 17@20c; calves, 27½@28½c; southern and barnyards, 20@22c; country dressed, 23@25c; sheep, 24@25c; do., extra, 26c; lambs, 29@30c; hogs, 25½c.

LANCASTER LIVE STOCK

Lancaster, Pa., April 8, 1918.

Cattle.—Receipts, 1,110 head, against 1,080 head last Monday; market active; prices 25 to 50 cents higher; yards clear at close; good to choice steers, $12.50@14.25; medium to good, $10.75@11.25; common to medium, $8.25@8.50; good to choice cows, 12; medium to good, $8.75@9.50; common to medium, $6@7; bologna and fair flesh cows, $7.50@9; good to choice bulls, $11@12; medium to good $8.75@9.50; common to medium, $8.25@8.65; bologna bulls, $9@9.75; good to choice stock bulls, $9.50@10.50; medium to good, $8.75@9.35; common to medium, $8.25@8.50.

Hogs.—Receipts, 192 head; market active; prices, best grades, $18.50@19; roughs, $14@15.50.

BUFFALO LIVE STOCK

Buffalo, N. Y. April 8, 1918.

Cattle.—Receipts, 3,000; strong; prime steers, $14.50@15; shipping steers, $14@14.25; butchers, $10@13.25; yearlings, $11.75@13.25; heifers, $9.25@12.25; cows, $5@12.50; bulls, $7@11; stockers and feeders, $7.50@10.75; fresh cows and springers strong; $65@140.

Calves.—Receipts, 3,500; slow; $7@17.

Hogs.—Receipts, 12,500; slow, heavy, $18.25@18.50; mixed, $18.40@18.50; yorkers, $18@18.25; pigs, $18; roughs, $16@16.25; stags, $13@14.

Sheep and Lambs.—Receipts, 7,000; wool lambs, $16@20.75; yearlings, $14.50@15.50; clipped, $13@17.85; wethers, $14.25@14.50; ewes, $7@14; mixed sheep, $14@14.25 (all clipped stock).

PITTSBURGH LIVE STOCK

Cattle.—Active to higher; supply, 45 loads; good, $12.25@13.25; prime, $13.50@14.25.

Sheep.—Steady; supply 10 double decks; prime wethers, $13@13.50; cull and common, $6.50@8; lambs, $13@17.25.

Veal Calves.—$16.50@17.

Hogs.—Lower; receipts, 35 double decks; prime heavies, $18@18.25; heavy Yorkers, $18.55@18.65; light Yorkers, $18@18.25; pigs, $17.75@18; roughs, $15@16.

NEW YORK LIVE STOCK

New York City, April 8, 1918.

Beeves.—Receipts, 3,060; steady; steers, $10@14.50; bulls, $7.50@11.75; cows, $4@10.

Calves.—Receipts, 5,800; weak; veals, $13@19; culls, $10@12.

Sheep and Lambs. — Receipts, 3,340; steady; unshorn lambs, $18@20.25; clipped, $13@17.

Hogs.—Receipts, 6,180; steady; $18.40@18.75; roughs, $17.25; pigs, $18@18.25.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., April 8, 1918.

Baled Hay and Straw.—Receipts, 348 tons of hay and 5 cars of straw. Hay was quiet and barely steady, with ample offerings. Straw was in small supply and steady, but quiet.

Timothy hay, according to location—No. 1 large bales, $29@30; No. 1, small bales, $29@30; No. 2, $27@28; No. 3, $23@25; sample, $19@20; no grade, $14@18; clover-mixed hay, light mixed, $27@28; No. 1, do., $25.50@26.50; No. 2, do. $24@25.

Straw.—No. 1 straight rye, $21@21.50; No. 2 do., $20@20.50; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1, wheat straw, $19@19.50; No. 2 do., $18@18.50; No. 1 oat straw, $19@19.50; No. 2 do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $1.88@1.90.

Oats.—No. 2 white, $1.03@1.03½.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., April 8, 1918.

Butter.—Supplies were small and prices were well maintained, but as usual on Saturday there was little wholesale trading.

Western, fresh, solid-packed creamery, extra, 42c; higher-scoring goods, 43@44c; extra firsts, 41c; firsts, 40@40½c; seconds, 38@39c; sweet creamery extra, 43c; under grades, 39@42c; nearby prints, fancy, 46c; do., average extra, 43@45c; firsts, 41@42c; seconds, 39@40c; special brands jobbing at 47@49c.

Receipts as compiled by the Bureau of Markets, 1,492 tubs of butter and 6,177 cases of eggs.

NEW YORK MILK MARKET

New York City, April 8, 1918.

The demand is poor, relatively speaking, while production far outruns market requirements. The Jewish holidays have also had a temporary effect on demand. Despite the efforts of the Federal Milk Commission to fix prices to the producer and the consumer that would enable the distributor to carry the surplus at a profit, some dealers complain that the demand is so low that they do not come out whole in connection with the surplus. In other words, the data regarding proportion of surplus to the whole product last April does not fit the corresponding month this year. The high retail price is assigned as one of the reasons.

Commission rates for Grade B to the producer in the first district are $2.50 a hundred for 3 percent milk; $2.74, or approximately 5.8 cents a quart for 3.6 percent; and $2.90 for 4 percent. Receipts of milk and cream in 40-quart cans for week ending April 5 were as follows:

Railroad	Milk	Cream
Erie	35,932	2,383
Susquehanna	6,094	26
West Shore	10,125	890
Lackawanna	60,390	1,475
N. Y. Central (long haul)	126,687	1,205
Ontario	34,732	2,826
Lehigh Valley	32,400	847
New Haven	6,855	
Pennsylvania	11,160	187
Other sources	6,105	190
Totals	329,480	10,029
Same week last year	368,705	13,721

GRASS SEED MARKET

Toledo, O., April 8, 1918.

Cloverseed.—Prime cash, $20.20.

Alsike.—Prime cash, $15.50.

Timothy.—Prime cash, old, $3.67; new, $3.70; April, $3.70; September, $4.15; October, $4.

THE WOOL TRADE REVIEW

The Boston "Commercial Bulletin" of April 6 says:

"The wool market continues keen for the limited stocks available or for stocks to be imported, free of Government restraint. Sales for the week were about two million pounds, including a fair proportion of territory and Cape wools of the fine and fine medium grades at fully last week's quotations. The tendency is to mark up prices on wools still on hand.

"The Government is occupying more and more machinery at the mills on military fabrics, and has taken over one woolen plant in its entirety. The West is still inactive."

Ohio and Pennsylvania Fleeces.—Delaine washed, 83@85c; delaine unwashed, 75c; ½-blood combing, 78c; ⅜-blood combing, 77@78c.

Michigan and New York Fleeces.—Fine unwashed, 63@64c; delaine, unwashed, 73c; ½-blood unwashed, 75@76c; ⅜-blood unwashed, 77c.

Wisconsin, Missouri and Average New England.—½-blood, 70@72c; ⅜-blood, 75@76c; ¼-blood, 74@75c.

Morris and the Honorable Tim

By Myra Kelly

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(Concluded from last week.)

Every trace of interest had left Mr. O'Shea's voice as he asked:

"Can they read?"

"Oh, yes, they read," responded Teacher, but her spirit was crushed and the children reflected her depression. Still, they were marvellously good and that blundering note had said, "Discipline is his lay." Well, here he had it.

There was one spectator of this drama, who, understanding no word nor incident therein, yet missed no shade of the many emotions which had stirred the light face of his lady. Towards the front of the room sat Morris Mogilewsky, with every nerve tuned to Teacher's, and with an appreciation of the situation in which the other children had no share. On the afternoon of one of those dreary days of waiting for the evil which had now come, Teacher had endeavored to explain the nature and possible result of this ordeal to her favorite. It was clear to him now that she was troubled, and he held the large and unaccustomed presence of the comp'ny mit whiskers responsible. Countless generations of ancestors had followed and fostered the instinct which now led Morris to propitiate an angry power. Luckily, he was prepared with an offering of a suitable nature. He had meant to enjoy it for yet a few days, and then give it to Teacher. She was such a sensible person about presents. One might give her one's most cherished possession with a brave and cordial heart, for on each Friday afternoon she returned the gifts she had received during the week. And this with no abatement of gratitude.

Morris rose stealthily, crept forward, and placed a bright blue bromo-seltzer bottle in the fat hand which hung over the back of the chair of state. The hand closed instinctively as, with dawning curiosity, the Honorable Timothy studied the small figure at his side. It began in a wealth of loosely curling hair which shaded a delicate face, very pointed as to chin and monopolized by a pair of dark eyes, sad and deep and beautiful. A faded blue "jumper" was buttoned tightly across the narrow chest; frayed trousers were precariously attached to the "jumper", and impossible shoes and stockings supplemented the trousers. Glancing from boy to bottle, the "comp'ny mit whiskers" asked:

"What's this for?"

"For you."

"What's in it?"

"A present."

Mr. O'Shea removed the cork and proceeded to draw out incredible quantities of absorbent cotton. When there was no more to come, a faint tinkle sounded within the blue depths, and Mr. O'Shea, reversing the bottle, found himself pessessed of a trampled and disfigured sleeve link of most palpable brass.

"Its from gold," Morris assured him. "You puts it in your—'scuse me—shirt. Wish you health to wear it."

"Thank you," said the Honorable Tim, and there was a tiny break in the gloom which had enveloped him. And then, with a quick memory of the note and of his anger:

"Miss Bailey, who is this young man?"

And Teacher, of whose hobbies Morris was one, answered warmly: "That is Morris Mogilewsky, the best of boys. He takes care of the goldfish, and does all sorts of things for me. Don't you, dear?"

"Teacher, yiss ma'an," Morris answered. "I'm lovin' much mit you. I gives presents on the company over you."

"Ain't he rather big to speak such broken English?" asked Mr. O'Shea. "I hope you remember that it is part of your duty to stamp out the dialect."

"Yes, I know," Miss Bailey answered. "But Morris has been in America for so short a time. Nine months, is it not?"

"Teacher, yiss ma'an. I comes out of Russia," responded Morris, on the verge of tears and with his face buried in Teacher's dress.

Now Mr. O'Shea had his prejudices—strong and deep. He had been given jurisdiction over that particular district because it was his native heath, and the Board of Education considered that he would be more in sympathy with the inhabitants than a stranger. The truth was absolutely the reverse. Because he had spent his early years in a large old house on East Broadway, because he now saw his birthplace changed to a squalid tenement, and the happy hunting grounds of his youth grown ragged and foreign—swarming with strange faces and noisy with strange tongues—Mr. O'Shea bore a sullen grudge against the usurping race.

He resented the caressing air with which Teacher held the little hand placed so confidently within her own and he welcomed the opportunity of gratifying his still ruffled temper and his racial antagonism at the same time. He would take a rise out of this young woman about her little Jew. She would be comforted later on. Mr. O'Shea rather fancied himself in the role of comforter, when the sufferer was neither old nor ill-favored. And so he set about creating the distress which he would later change to gratitude and joy. Assuredly the Honorable Timothy had a well-developed sense of humor.

"His English is certainly dreadful," remarked the voice of authority, and it was not an English voice, nor is O'Shea distinctively an English name. "Dreadful. And, by the way, I hope you are not spoiling these younsters. You must remember that you are fitting them for the battle of life. Don't coddle your soldiers. Can you reconcile your present attitude with discipline?"

"With Morris—yes," Teacher answered. "He is gentle and tractable beyond words."

"Well, I hope you're right," grunted Mr. O'Shea, "but don't coddle them."

And so the incident closed. The sleeve link was tucked, before Morris' yearning eyes, into the 'reluctant pocket of the wide white waistcoat, and Morris returned to his place. He found his reader and the proper page, and the lesson went on with brisk serenity; real on the children's part, but bravely assumed on Teacher's. Child after child stood up; read; sat down again; and it came to be the duty of Bertha Binderwitz to read the entire page of which the others had each read a line. She began jubilantly, but soon stumbled, hesitated, and wailed:

"Stands a fierce word. I don't know what it is," and Teacher turned to write the puzzling word upon the blackboard.

Morris' heart stopped with a sickening suddenness and then rushed madly on again. He had a new and dreadful duty to perform. All his mother's counsel, all his father's precepts told him that it was his duty. Yet fear held him in his little seat behind his little desk, while his conscience insisted on this unalterable decree of the social code: "So somebody's clothes is wrong its polite you says 'scuse' und tells it out."

And here was Teacher whom he dearly loved, whose ideals of personal adornment extended to full sets of buttons on jumpers and to laces in both shoes, here was his immaculate lady fair in urgent need of assistance and advice, and all because she had on that day inaugurated a delightfully vigorous exercise for which, architecturally, she was not designed.

There was yet room for hope that some one else would see the breach and brave the danger. But no. The visitor sat stolidly in the chair of state, the Principal sat serenely beside him, the children sat each in his own little place, behind his own little desk, keeping his own little eyes on his own little book. No. Morris' soul cried with Hamlet's:

"The time is out of joint;—O cursed spite,
That ever I was born to set it right!"

Up into the quiet air went his timid hand. Teacher, knowing him in his more garrulous moods, ignored the threatened interruption of Bertha's spirited resume, but the windmill action of the little arm attracted the Honorable Tim's attention.

"The best of the boys want you," he suggested, and Teacher perforce asked:

"Well, Morris, what is it?"

Not until he was on his feet did the Monitor of the Gold-Fish Bowl appreciate the enormity of the mission he had undertaken. The other children began to understand, and watched his struggle for words and breath with sympathy or derision, as their natures prompted. But there are no words in which one may politely mention ineffective safety-pins to one's glass of fashion. Morris' knees trembled queerly, his breathing grew difficult, and Teacher seemed a very great way off as she asked again:

"Well, what is it, dear?"

Morris panted a little, smiled weakly, and then sat down. Teacher was evidently puzzled, the "Comp'ny" alert, the Principal uneasy.

"Now, Morris," Teacher remonstrated, "you must tell me what you want."

But Morris had deserted his etiquette and his veracity, and murmured only:

"Nothings."

"Just wanted to be noticed," said the Honorable Tim. "It is easy to spoil them." And he watched the best of boys rather closely, for a habit of interrupting reading lessons, wantonly and without reason, was a trait in the young of which he disapproved.

When this disapprobation manifested itself in Mr. O'Shea's countenance, the loyal heart of Morris interpreted it as a new menace to his sovereign. No later than yesterday she had warned them of the vital importance of coherence. "Every one knows," she had said, "that only common little boys and girls come apart. No one ever likes them," and the big stranger was even now misjudging her.

Again his short arm agitated the quiet air. Again his trembling legs upheld a trembling boy. Again authority urged. Again Teacher asked:

"Well, Morris, what is it, dear?"

All this was as before, but not as before was poor harassed Miss Bailey's swoop down the aisle, her sudden taking of Morris' troubled little face between her soft hands, the quick near meeting with her kind eyes, the note of pleading in her repetition:

"What do you want, Morris?"

He was beginning to answer when it occurred to him that the truth might make her cry. There was an unsteadiness about her upper lip which seemed to indicate the possibility. Suddenly he found that he no longer yearned for words in which to tell her of her disjointment, but for something else—anything else—to say.

His miserable eyes escaped from hers and wandered to the wall in desperate search for conversation. There was no help in the pictures, no inspiration in the plaster casts, but on the blackboard he read, "Tuesday, January twenty-first, 1902." Only the date, but he must make it serve. With Teacher close beside him, with the hostile eye of the Honorable Tim upon him, hedged round about by the frightened or admiring regard of the First-Reader Class, Morris blinked rapidly, swallowed resolutely, and remarked:

"Teacher, this year's Nineteen-hundred-and-two," and knew that all was over.

The caressing clasp of Teacher's hands grew into a grip of anger. The countenance of Mr. O'Shea took on the beatified expression of the prophet who has found honor and verification in his own country.

"The best of boys has his off days and this is one of them," he remarked.

"Morris," said Teacher, "did you stop a reading lesson to tell me that? Do you think I don't know what the year is? I'm ashamed of you."

Never had she spoken thus. If the telling had been difficult to Morris when she was "glad on him," it was impossible now that she was a prey to such evident "mad feelings". And yet he must make some explanation. So he murmured: "Teacher, I tells you 'scuse. I know you knows what year stands, on'y its polite I tells you something, und I had a fraid."

"And so you bothered your Teacher with that nonsense," said Tim. "You're a nice boy!"

Morris' eyes were hardly more appealing than Teacher's as the two culprits, for so they felt themselves, turned to their judge.

"Morris is a strange boy," Miss Bailey explained. "He can't be managed by ordinary methods—"

"And extraordinary methods don't seem to work today," Mr. O'Shea interjected.

"—and I think," Teacher continued, "that it might be better not to press the point."

"Oh, if you have no control over him—" Mr. O'Shea was beginning pleasantly, when the Principal suggested:

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"You'd better let us hear what he has to say, Miss Bailey; make him understand that you are master here." And Teacher, with a heartsick laugh at the irony of this advice in the presence of the Associate Superintendent, turned to obey.

But Morris would utter no words but these, dozens of times repeated: "I have a fraid." Miss Bailey coaxed, bribed, threatened and cajoled; shook him surreptitiously, petted him openly. The result was always the same: "Its polite I tells you something out, on'y I had a fraid."

"But, Morris, dear, of what?" said Teacher. "Are you afraid of me? Stop crying now and answer. Are you afraid of Miss Bailey?"

"N-o-o-oh m-a-a-an."

"Are you afraid of the Principal?"

"N-o-o-oh m-a-a-an."

"Are you afraid"—with a slight pause, during which a native hue of honesty was foully done to death—"of the kind gentleman we are all so glad to see?"

"N-o-o-oh m-a-a-an."

"Well. then, what is the matter with you? Are you sick? Don't you think you would like to go home to your mother?"

"N-o-o-oh m-a-a-an; I ain't sick. I tells you 'scuse."

The repeated imitation of a sorrowful goat was too much for the Honorable Tim.

"Bring that boy to me," he commanded. "I'll show you how to manage refractory and rebellious children."

With much difficulty and many assurances that the gentleman was not going to hurt him, Miss Bailey succeeded in untwining Morris' legs from the supports of the desk and in half carrying, half leading him up to the chair of state. An ominous silence had settled over the room. Eva Gonorowsky was weeping softly, and the redoubtable Isidore Applebaum was stiffened in a frozen calm.

"Morris," began the Associate Superintendent in his most awful tones, "will you tell me why you raised your hand? Come here, sir."

Teacher urged him gently, and like dog to heel, he went. He halted within a pace or two of Mr. O'Shea, and lifted a beseeching face towards him.

"I couldn't to tell nothing out," said he. "I tell you 'scuse. I'm got a fraid."

The Honorable Tim lunged quickly and caught the terrified boy preparatory to shaking him, but Morris escaped and fled to his haven of safety—his Teacher's arms. When Miss Bailey felt the quick clasp of the thin little hands, the heavy beating of the over-tried heart, and the deep convulsive sobs, she turned on the Honorable Timothy O'Shea and spoke:

"I must ask you to leave this room at once," announced. The Principal started, and then sat back. Teacher's eyes were dangerous, and the Honorable Tim might profit by a lesson. "You've frightened the child until he can't breathe. I can do nothing with him while you remain. The examination is ended. You may go."

Now Mr. O'Shea saw he had gone a little too far in his effort to create the proper dramatic setting for his clemency. He had not expected the young woman to "rise" quite so far and high. His deprecating half-apology, half-eulogy, gave Morris the opportunity he craved.

"Teacher," he panted; "I wants to whisper mit you in the ear."

With a dexterous movement he knelt upon her lap and tore out his solitary safety-pin. He then clasped her tightly and made his explanation. He began in the softest of whispers, which increased in volume as it did in interest, so that he reached the climax at the full power of his boy soprano voice.

"Teacher, Missis Bailey, I know you know what year stands. On'y its polite I tell you something, und I had a fraid the while the comp'ny mit the whiskers sets und rubbers. But, Teacher, its like this: Your jumper's sticking out und you could to take mine safety-pin."

He had understood so little of all that had passed that he was beyond being surprised by the result of this communication. Miss Bailey had gathered him into her arms and had cried in a queer helpless way. And as she cried she had said over and over again: "Morris, how could you? Oh, how could you, dear? How could you?"

The Principal and "the comp'ny mit whiskers" had looked solemnly at one another for a struggling moment, and had then broken into laughter, long and loud, until the visiting authority was limp and moist. The children waited in polite uncertainty, but when Miss Bailey, after some indecision, had contributed a wan smile, which later grew into a shaky laugh, the First-Reader Class went wild.

Then the Honorable Timothy arose to say goodby. He reiterated his praise of the singing and reading, the blackboard work and the moral tone. An awkward pause ensued, during which the Principal engaged the young Gonorowskys in impromptu conversation. The Honorable Tim crossed over to Miss Bailey's side and steadied himself for a great effort.

"Teacher," he began meekly, "I tells you 'scuse. This sort of thing makes a man feel like a bull in a china shop. Do you think the little fellow will shake hands with me? I was really only joking."

"But surely he will," said Miss Bailey, as she glanced down at the tangle of dark curls resting against her breast. "Morris, dear, aren't you going to say goodby to the gentleman?"

Morris relaxed one hand from its grasp on his lady and bestowed it on Mr. O'Shea.

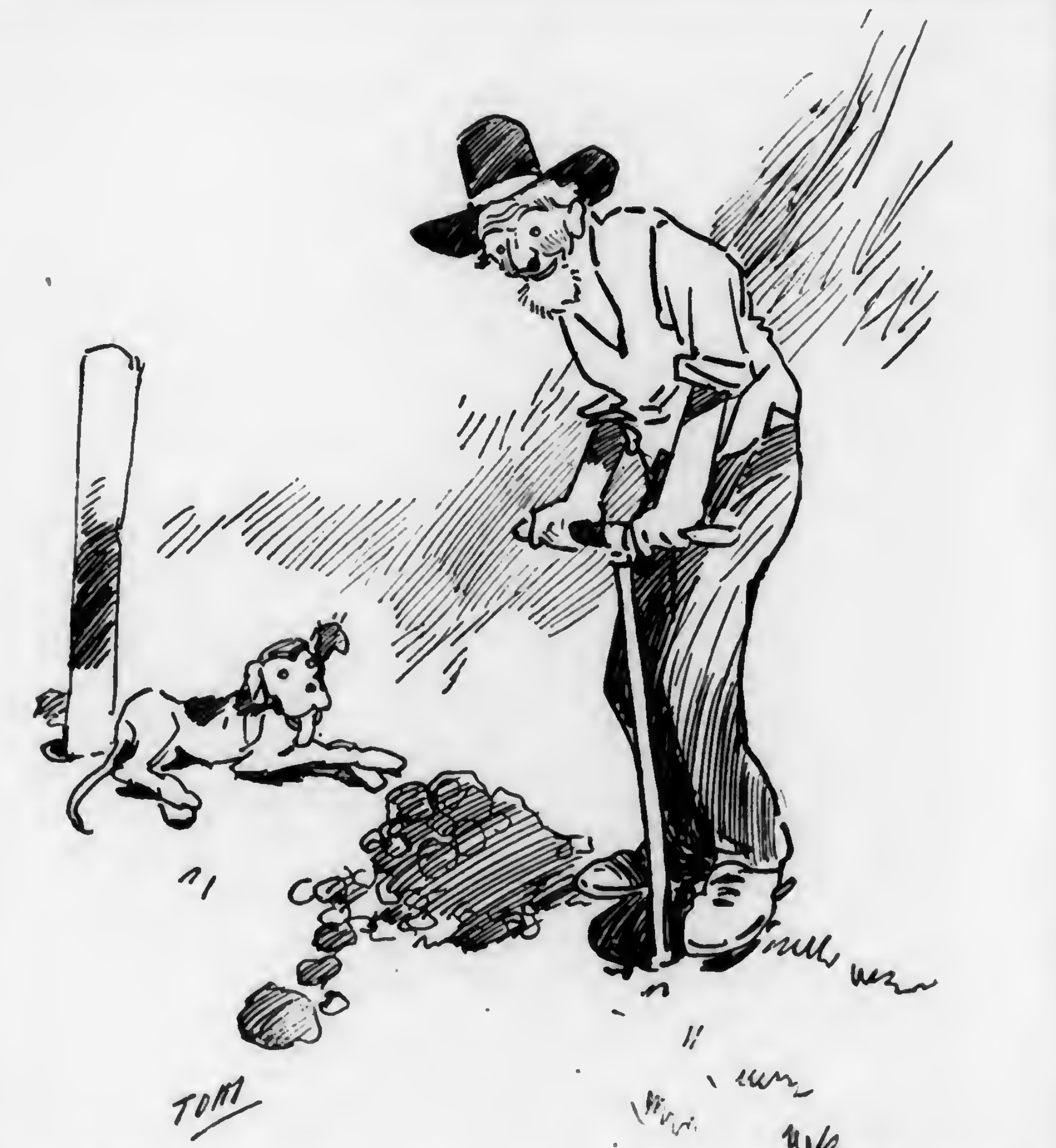
"Goodby," said he gently. "I gives you presents, from gold presents, the while you're friends mit Teacher. I'm loving much mit her too."

At this moment the Principal turned, and Mr. O'Shea, in a desperate attempt to retrieve his dignity, began: "As to class management and discipline—"

But the Principal was not to be deceived.

"Don't you think, Mr. O'Shea," said he, "that you and I had better leave the management of the little ones to the women? You have noticed, perhaps, that this is Nature's method."

THE END



Uncle Amos says: "Remember when we used to have line fences on every side of us, and we used to say that 'good fences made good neighbors'? That was before we learned that our neighbors were just as human as we were, and that property rights were safe among honest people without bein' protected with barbed-wire entanglements. That is about the biggest principle of the big fight 'over there'. There won't be so much need of line fences along the country borders after this war is over. I am buildin' this fence for a hog yard. A ravenous appetite, whether for food, money or power, never had much respect for property lines."

SELLING WHEAT

Any farmers in this state having trouble to sell wheat in their local markets are asked by the State Food Administration to notify their County Food Administrator. If the local representative can not help them, they are asked to communicate with the state representative of the Food Administration Grain Corporation, 272 Bourse Building, Philadelphia, Pa. A market is positively assured.

THE POTATO MOVEMENT

The State Food Administration urges all farmers having potatoes on hand to move them to market before the shipments of southern potatoes start. If satisfactory local market is not found, the State Administration will give the names of reliable commission men who will handle potatoes on a commission of five cents per bushel or $15 per car.

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How to keep your Ford engine running like new

Every car has different lubricating problems. In the Ford the special problem arises from the exclusive and ingenious construction by which the disc clutch and transmission gears are enclosed with the engine.

In other makes of cars, these three parts are separate, and the oiling requirements of each are met by a different lubricant.

In the Ford, one oil must lubricate all three of these parts—the engine, transmission gears and the disc clutch.

Faulty lubrication causes 90% of trouble

A careful analysis of the causes for trouble in the Ford engine shows that improper lubrication is to blame for 90% of them. This is largely due to the sediment formed by ordinary oil which breaks down under the heat of the engine. This sediment crowds the oil with lubricating qualities away from points where it is most needed, causing friction and rapid wear.

The ideal lubricant for your Ford

Ford owners are rapidly learning that Veedol Medium is the ideal lubricant for their cars.

It is heavy enough for the engine and gears, yet light enough so that the clutch does not drag.

Ordinary oil evaporates rapidly under the heat of the engine. Ford owners get 25% to 50% more mileage per gallon with Veedol, because Veedol not only resists destruction by heat and minimizes the consequent formation of sediment, but also reduces evaporation loss to a negligible quantity.

An 80-page book on lubrication for 10c

The most complete book ever published on automobile lubrication, written by a prominent engineer. Contains Veedol Lubrication Chart, showing correct grade of Veedol for every car, winter or summer. Send 10c for a copy. It may save you many dollars.

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Live Stock

MANAGING THE YOUNG PIGS

Feeding and Weaning Require Close Attention and Care

The feeding of the sow that has just farrowed should be light for four or five days, but she should gradually be brought to full feed as the demands of the pigs and the milk flow increase. Some of the coarser feeds will give place to richer concentrates, such as skimmilk, tankage, middlings, oats, barley, peas and oil meal. These may be offered in a watery slop. The feeding of the sow should be liberal as at no other time can the growth of the pigs be pushed so rapidly or economically. The New York College of Agriculture makes the following suggestions:

Feeding the Unweaned Pigs

At two or three weeks of age the pigs will begin to manifest an interest in the food of the sow. At this time, unweaned pigs should have a low-set trough, accessible only to them and they should be encouraged to go to it to satisfy their hunger. The use therein of sweetmilk and a little mill feed such as ground sieved oats and middlings will soon induce them to eat a good deal in this way, thus supplementing the milk of the sow and hastening the growth of the pigs.

When to Wean Pigs

Opinions and practices differ as to how long to leave pigs with the sow. Weaning at four weeks of age usually is not a good practice. If not actually cruel, the change is too sudden for best results. Two litters a year may be had if the pigs are encouraged to eat while still nursing, as already suggested, and if they are not weaned until six to eight weeks of age. This probably is the better practice.

When pigs are left with the sow for a period as long as from ten to twelve weeks she practically weans them herself and two litters are impossible. This may be a desirable plan when fancy or show hogs are desired; but the present emergency calls for two litters, even tho the sow thereby requires closer attention. When weaning takes place, the sow should be returned to the pigs two or three times so that the udders may be milked out.

General Suggestions

The aim in starting a young pig is to secure the right amount of bone and muscle in proportion to the use that is to be made of him; pigs to be fattened should be induced to grow some first; those intended for breeders should not be fattened.

Probably nothing contributes as much thrift and growthiness as exercise; or putting it the other way round, nothing will stunt a pig quicker than lack of exercise. Even young pigs must be induced to exercise altho not too much at first.

A variety of feeds, including succulence and protein, is essential. The feeder should remember that the stomach of the pig is small. Thus, for natural reasons, the pig will eat a small amount at a time but will eat often. Therefore, the feeding of young pigs three or four times a day at first is good business. Small amounts of food that will be cleaned up quickly, and feeding at frequent intervals are highly important.

The pig feeder has a wide choice of feeds after the pigs are started. With roots and forage for succulence and a variety of grains with tankage and mineral matter, they will thrive if kept sanitary. Exclusive corn feeding is not profitable. Feeders should study the value of barley for fattening pigs.

A BOY'S INVESTMENT IN SHEEP

A Sixty-Percent Deal

I recently heard a very interesting and enlightening story as told by a father of how his son came to buy two breeding ewes, and the results obtained. The son, a twelve-year-old, helps with all the farm work, but has a special interest in sheep, having owned one or more for the past six years.

During the winter of 1916, $30 which the boy had accumulated and put on interest was returned to him. After considering for some time whether or not to deposit this money in the bank at 4 percent he finally approached his father as follows: "Pop, I would like to buy two brood ewes with my $30. I know a man who has two good ones he will sell me. They will be almost sure to have two lambs and may raise three or four. You can have the wool for the keep of the sheep and I will take the lambs as interest for my investment. Four percent at the bank is too slow a way to make money."

Fortunately the father could readily carry a few more sheep and he appreciated the importance of encouraging his son, by giving him this additional interest in the business. Moreover the wool would just about pay for the keep, so he was not really giving the boy anything but the privilege of having the sheep. The deal was made and the two brood ewes purchased for $30.

Following this the boy looked his investment over daily and speculated on the number of lambs probable and possible, as well as the likely earnings. The ewes had only single lambs but these received the best of care with the result that they brought in better than $12 each in the fall, which on the $30 investment, amounted to 80 percent interest instead of 4 percent. With a depreciation of $3 per ewe, he still had a 60 percent investment.

How about it, fathers and sons? Is there not room for you to do some business along this same line? If the boy does not have the money, the bank will loan it to him at 6 percent.—M., Washington Co., Pa.

PROFIT IN HOGS

When the Federal Food Administrator requested the farmers to "raise hogs, and more hogs", many objected explaining that there is no profit in pigs, owing to the high cost of feed. Feed is higher but the farmer is also getting more for his products.

Joseph C Graber, of Montgomery County, Pa., had this experience. He purchased three shoats weighing 60 pounds each, paying $16.50 for them. By the time they were fat enough to be butchered his feed bill amounted to $101.22. This expenditure, plus the original cost of the shoats, represented an investment of $117.72.

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Veterinary

Conducted by W. C. Fair, V. S.

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Still-born Pigs—Weak Stomach.—I have had two sows to farrow this spring, and both went nine days over time. When the pigs farrowed some were dead, and the rest too weak to live long. None of the pigs had much hair on them. The sows were fed all winter on corn 5 parts, rye chop 2½ parts, shorts 2½ parts, bran 5 parts, oil meal 1 part, tankage 1 part. They were also given corn stover from the cow stable, which they tore up and I presume ate part. They were kept in pen practically all winter on account of snow and severe cold weather. I also have a pig about 5 months old that is not thriving. He is always ready to eat, but soon after eating, he vomits. This pig is lively, but thin. A. H. C., Newville, Pa.—Had your sows been exercised daily and perhaps not quite so well fed they would have raised their pigs all right. Give your other pig ½ teaspoonful bicarbonate soda and a teaspoonful powdered wood charcoal at dose in feed, three times a day. If you will give him ½ pint of hot black coffee either before or after feeding it will have a good effect. Warming his feed and perhaps changing his food supply will benefit him.

Sore shoulders.—For the past two years I have been troubled to keep my horses at work on account of their having sore shoulders. Can you tell me what to do to toughen them? A. B. T., Sharon, Pa.—First of all, the collar should fit. It should not be too short, neither too wide nor too narrow. Dissolve ¼ lb. acetate of lead, 3 oz. sulphate zinc and 3 oz. tannic acid in one gallon of clean water, and apply to shoulders and back where saddle rests, three times a day. This is also a proper remedy to apply to sores if there are any.

Nasal Catarrh.—Nine weeks ago I bought a nine-year-old mare that seemed to be in good health, but two weeks ago she commenced coughing. Since then she has had one sore eye, also mucus discharge from one nostril. This matter is mixed with blood. She is dull and hangs her head. The right side of her face is all right. I. Y., Spring City, Pa.—Your mare took cold but will be benefited by giving her one dram powdered sulphate iron, two drams ground red cinchona and ½ oz. ground gentian at dose in feed, three times a day. She should be well fed, her stable kept clean and be well supplied with fresh air.

Swollen Pastern—Enlarged Fetlock Joint.—For the past week one of our horses has had swollen pastern, caused by a calk. The wound is now healed but the pastern is thick. This same horse interferes behind and on account of it now has enlarged fetlock joint. He now wears leather pad, but I would like to know how to stop him striking. D. D., Union, N. Y.—Apply equal parts tincture iodine and camphorated oil to pastern daily. Have horse shod by a competent mechanic and perhaps he can prevent him striking. Dissolve ¼ lb. acetate lead in three quarts of water and wet fetlock joint several times a day. The joint will always swell until striking ceases. Be sure the boot fits leg.

Dog Coughs.—We have a rat terrier dog that has been troubled for a long time with a cough. His eyes discharge mucus. I applied pine tar to nose and it helped him. We believe he has had distemper for a long time. I put a teaspoonful salt down his throat, but this caused him much pain and failed to help him. E. L. W., Midway, Del.—Give him five or ten drops Glyco Heroin (Smith) at a dose, five times a day and it will relieve him. This treatment should be kept up until he recovers.

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	Size	Shpg. wt.	Price, each
72A4503	30x3½ inches	16 pounds	$14.50
72A4504	32x3½ inches	17 pounds	17.10
72A4509	34x4 inches	22 pounds	24.50

For complete list of sizes and prices see page 548 of "Your Bargain Book."

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Maintaining Soil Fertility

Lessons From Economical Practices in Use by Truckers

By R. W. DeBAUN, N. J.

Until ten years ago I lived on a large and successful truck farm in northern New Jersey, where there is grown a succession of vegetables and small fruits. The cropping system kept the trucks going to the Newark wholesale market every day from early spring, when asparagus, spinach, sprouts (dwarf spring kale); lettuce and rhubarb were ready to gather, until late the following winter. This was possible because when Thanksgiving came, the storehouse was filled with onions and squash. The root cellar was filled with carrots, beets and potatoes. Cabbage and celery were trenched in the field in which they grew and the turnips were in pits.

To grow these crops successfully a productive soil is essential and when profitable yields of such crops are being harvested it requires large amounts of plant food and organic material to replace that which is used up. Ten years ago the money paid out for fertilizer and manure on this farm was just the same as it costs now, in spite of the fact that the price of fertilizer and manure is twice what it was then. And yet the soil is being maintained in a high state of fertility. The method pursued represents a new development in maintaining soil fertility, which I find, from continually traveling around New Jersey's vegetable sections for three years, is being adopted by the truckers thruout the state. I will try to bring out a few ideas which have been impressed upon me by practical experience and observation as essentials for economical and bountiful production.

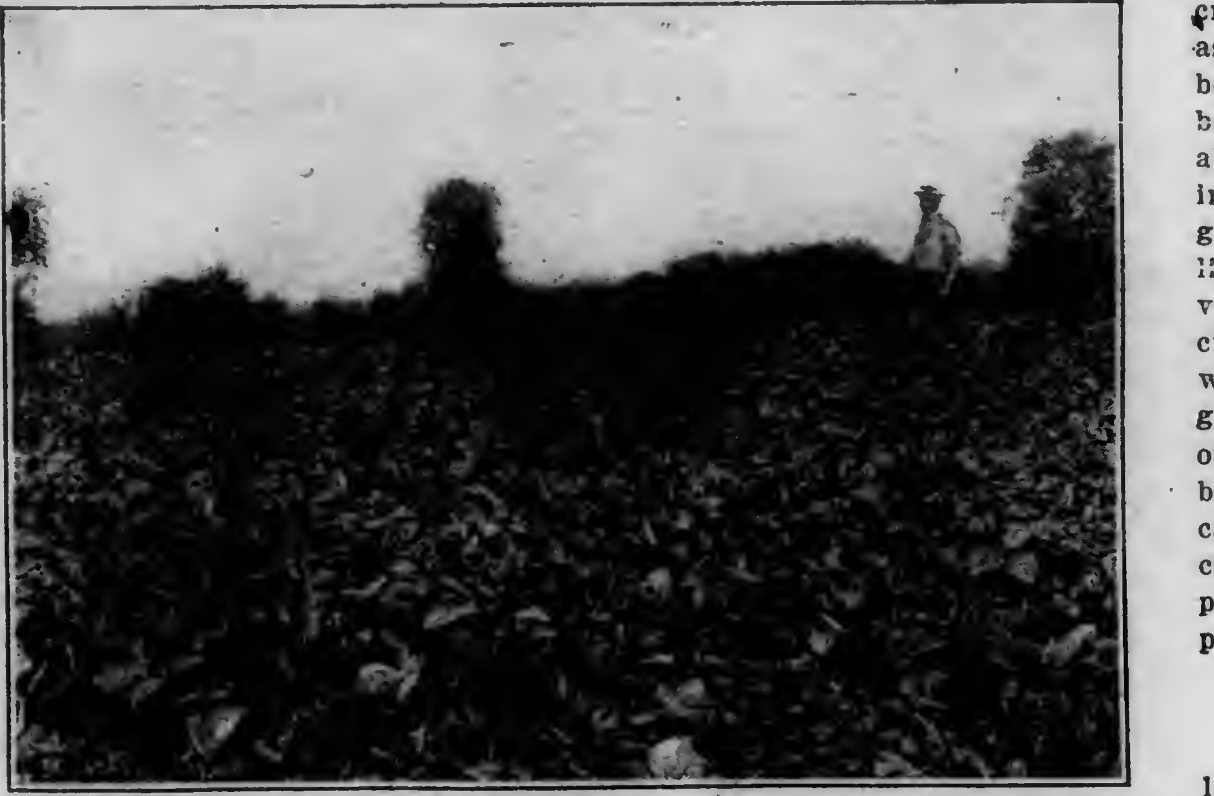


Fig. 1.—Cow Peas Growing for Soil Improvement in Cumberland Co., N. J.

First of all, it is a recognized fact that the man who is running the farm must make his living out of that farm. If his soil is poor, he will be advised to plant soil improvement crops and plow them under. (As in Fig. 1.) While I have faith in this method on impoverished soils, I realize that many must plant their special soil improvement crops before or after they have grown a vegetable crop each season. This vegetable crop offers the only chance for cash returns regardless of the condition of the soil. Some cash crops which frequently do well even on run-down soil are such as beans, sweet corn, peas, peppers, pumpkins, squash and tomatoes. Of course there is some soil which is even too poor to grow sand berries and could never be made good producers. My plea is that such soil will make a rich man poor unless he moves off immediately. There are millions of reasonably fertile acres; why waste one's life on a hopeless proposition?

Use Lime

In preparing poor soil for the less exacting vegetable crops, the very first consideration should be a judicious application of lime. Lime loosens up a worn-out soil and puts it into action. The crops will produce a better yield and more vine growth so that there will be more organic matter to return to the soil. And, if the crop happens to be a legume, such as peas or beans, more nitrogen will be taken from the air, because the bacteria on the roots will be enabled to work better. Illustrated in Fig. 2. Furthermore, another great benefit will be had from the lime when crimson clover, rye and vetch are sowed between the cash crops at the last cultivation for a winter's cover crop. We hear a great lot about the humus content of our soils, but that problem need be no problem if the grower will carefully consider the nature of his cash crops and will sow soil improvement crops wherever the opportunity presents itself.

Fertilizers

After the soil is plowed and lime has been harrowed in, the grower is ready to fertilize and

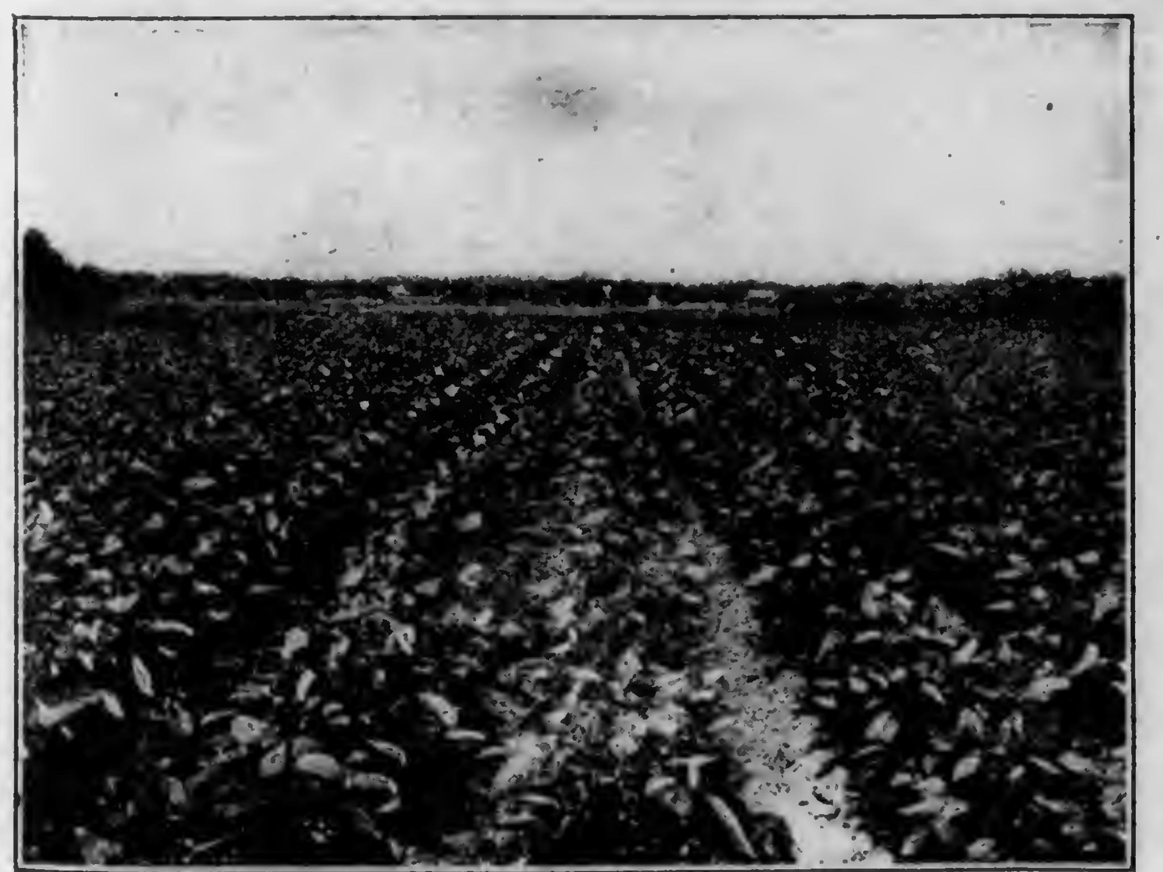


Fig. 2.—Bush Lima Beans, Cape May County, N. J. A Profitable Cash Crop That Improves the Soil

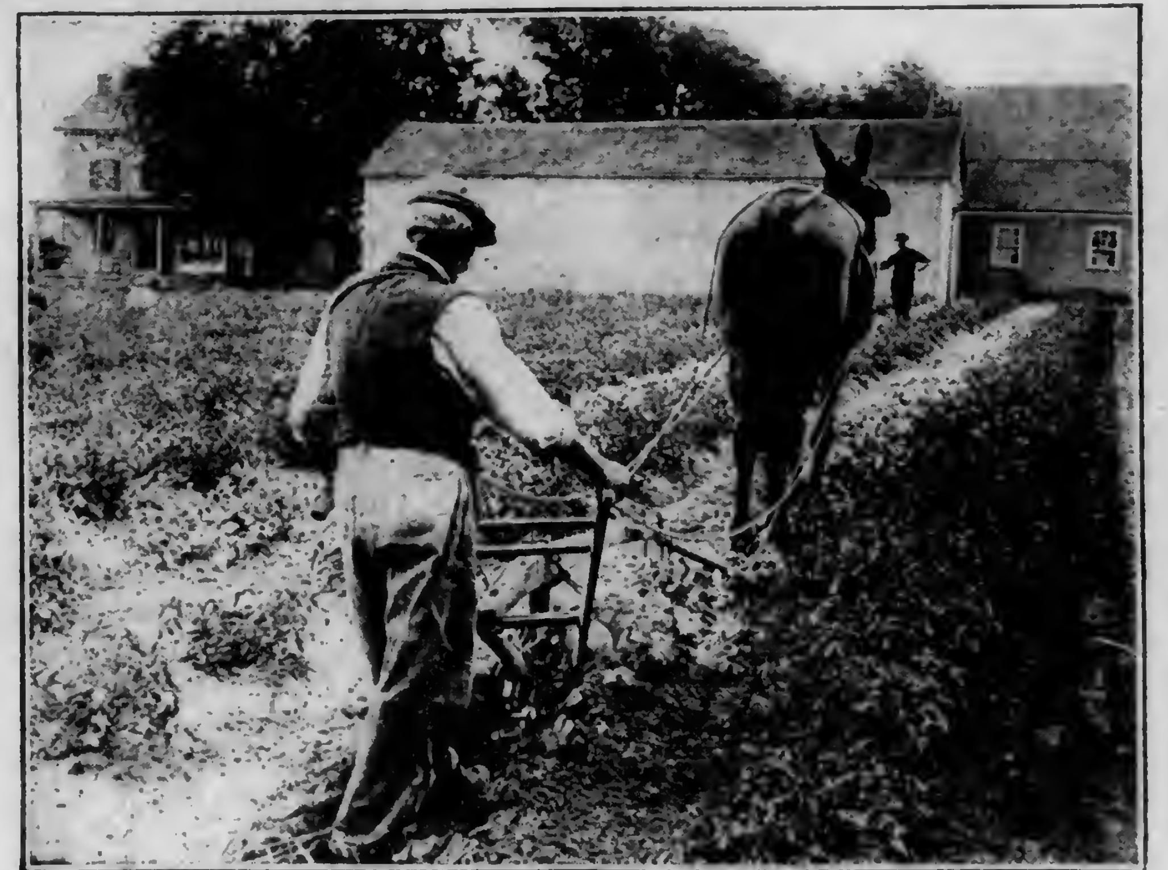


Fig. 3.—Turning Under Early Pea Vines While Cultivating Early Tomatoes, Burlington County, N. J.

plant. Very few struggling beginners are able to procure enough manure to give all their fields a good application. If only a limited quantity is available, use it for the early tomatoes, peppers and squash by opening up quite deep rows and applying a moderate amount along in the row. Then sow about 50 lbs. of nitrate of soda mixed with from 300 to 600 lbs. of acid phosphate per acre. Sow along on top of the manure and cover up the rows with horse power and then quickly shape up the hills to receive the seed. In this way the greatest and quickest benefit will be received from the small amount of manure and fertilizer used.

Fertilizer is recognized as a necessity thruout the East. Somehow or other the vegetable grower who uses the most appears to make the greatest net profit. However, there is a big difference in fertilizers, and the grower should understand it. The nitrogen in blood, tankage, bone, dried garbage and feathers is not more than two-thirds available the first year it is used. Most of the phosphoric acid in acid phosphate is immediately soluble, and this is recognized as one of the very best and cheapest sources of phosphoric acid. Why should a trucker, especially one with little backing, be told that he should use ground bone, tankage, etc., when the ingredients do not give full returns for two or more years? Slow acting materials can not be expected to give profitable returns when applied to quick-growing crops.

The agricultural experiment stations tell us that manures and soils are deficient in phosphoric acid, the one important element that does so much to produce an early, heavy set of large fruit in our vegetables and fruits. Therefore, by using this cheapest of all fertilizing ingredients generously we get fullest benefit from all nitrogen and potash which may be present in the soil. Another advantage of this material is that, if it is applied in excess of the crop's needs, it will not leach away but will be retained for the use of succeeding crops. Therefore, where economy and quick returns are desired, it is advisable to buy most of the fertilizer in the form of nitrate of soda, acid phosphate and some tankage. The latter material is added to prevent the mixture from getting hard if it is to be allowed to stand around for several days before it is to be used.

A mixture containing one part (by weight) of nitrate of soda, one of tankage and six of acid phosphate would analyze about 3 percent nitrogen (equivalent to 3⅔ percent ammonia) and 13 percent phosphoric acid and no potash. This material would be most economical and quick to give excellent returns. If at any time the condition of the growing crops seemed to warrant it, an additional application of nitrate of soda might be applied to complete the growth of the crop, using from 50 to 100 pounds per acre. This method of fertilizing the vegetable crops may not just exactly appeal to some of the well-established truckers, but it certainly brings out an idea worthy of consideration at this time when efficiency, economy and quick returns are necessary.

Building Fertility with Cash Crops

We have discussed a way to get quick cash returns from a run-down soil by the use of lime, a little manure and quickly available fertilizer. Now consider a way to build up the soil's fertility with organic material so that it will become thoroly fertile and productive for the more exacting crops, such as cabbage, celery, cucumbers, lettuce, onions, potatoes, spinach and strawberries. Organic material has got to be obtained at the least possible cost. Crops grown for soil improvement are all right when the ground can be spared for that purpose, and cover crops should always be planted because they help to retain plant food in the soil and provide organic matter. But the time has come when the vegetable grower must also consider the residue organic materials left on his soil by his cash crops. Why not do the way thousands of truckers are doing in Atlantic, Cape May and Cumberland Counties of New Jersey? They are growing string beans, bush limas, pole limas and cranberry beans very extensively. These are profitable cash crops and soil improvement crops as well. (See again Figure 2.)

In Burlington County the early garden peas are planted in rows about 4½ feet apart. Just as soon as the weather will permit, a row of early tomato plants is set between every two rows of peas, or else can-house tomato plants are set between the rows a little later. By the time the tomato plants are beginning to spread out, the green peas are picked for market. Then the farmer with a one-horse plow throws up a furrow towards each side of the tomato row. This provides a furrow along side of the pea vines. A man goes along the pea row with a hay fork, pulls the vines into the furrow and walks on them. Then the one horse and the little plow come along again and completely bury the spent pea vines. See Figure 3.) The result is that in about three weeks the soft pea vines will have completely decomposed in the warm soil and the tomatoes will soon find the decaying leguminous vegetable matter and will be greatly benefitted.

If it happens to be early tomatoes, the old vines will be disc-harrowed to pieces along in August to stop the summer twitch grass, and a cover crop will probably be sown at the last cultivation. The intercrop of peas costs practically no more to plant than Canada field peas, cows peas or soybeans, yet they offer an excellent opportunity for immediate cash returns and soil improvement. This same idea is worked in a multitude of ways. For instance, early string beans or garden peas are planted between the rows of new strawberry fields, between asparagus rows and between the wide rows for cucumbers, cantaloupes, egg-plants, squash and watermelons.

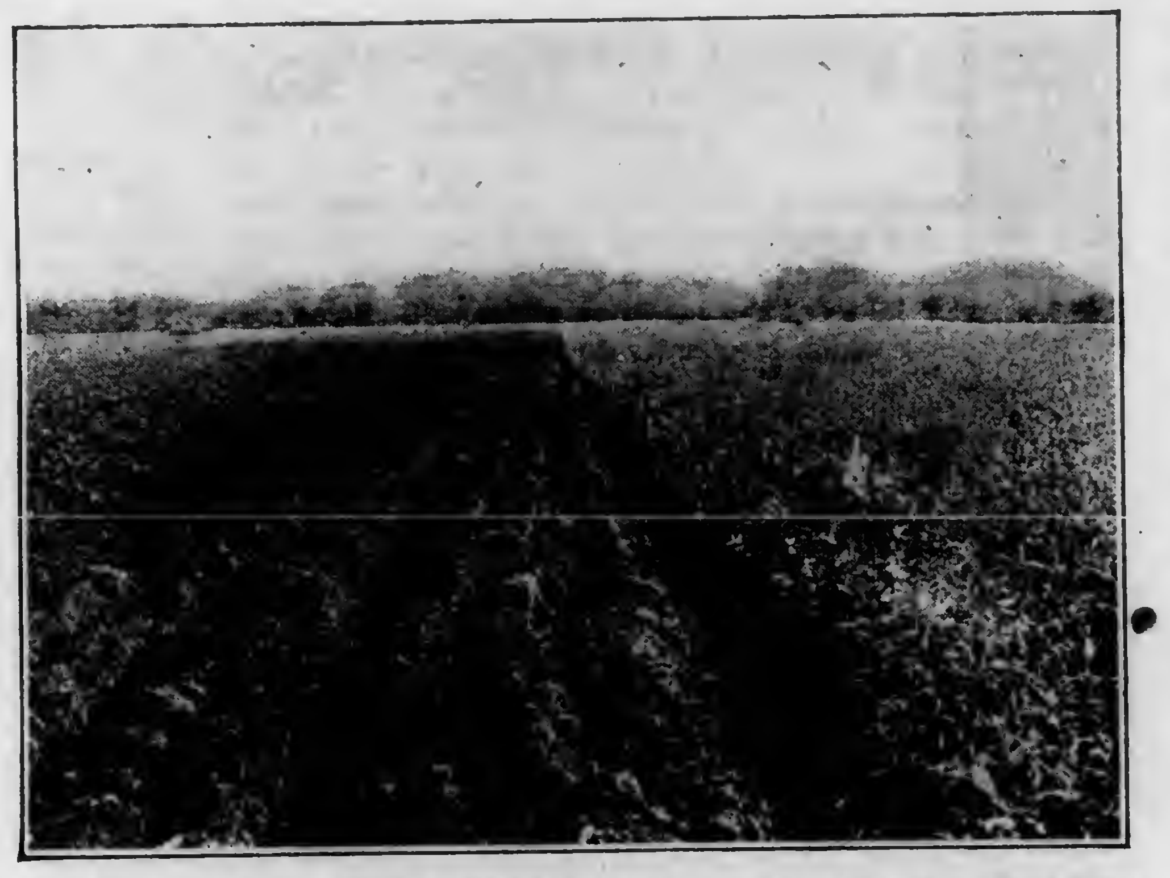


Fig. 4.—Turning Under Excessively Heavy Growth of Canada Field Peas Injured the Soil

Sweet Corn Improvement

Hundreds of truckers thruout New Jersey are giving sweet corn (and field corn) a place on their farms. This crop is proving to be a profitable cash crop and a soil improver as well. It grows nicely if it is well fertilized even on soil of moderate fertility. After the green corn is picked, the stalks of the early crop may be plowed under at once. In southern Jersey, string beans are frequently planted on the early corn ground and of course this further improves the soil. In northern Jersey, the season is shorter and the only money crops which would have time to develop after sweet corn would be lettuce, turnips or spinach without a chance for soil improvement other than the corn stalks, unless the turnips were sowed broadcast with clover or clover, rye and winter vetch.

The second early plantings of sweet corn do not come off until two or three weeks later, therefore another method is being developed. During July, just as the corn is coming into tassel, five pecks of cowpeas are broadcasted per acre and harrowed in deeply. When the green corn is ready to be pulled for market, the cowpeas are just nicely starting, but they will not have taken any moisture from the developing corn. A few weeks later, when frost comes, the entire growth of corn stalks and cowpeas is disc-harrowed and while the harrowing continues, rye is sown broadcast at the rate of a bushel and a half per acre to develop into the winter cover crop. The following spring there will be a partly decomposed mass of stalks and cowpeas and a cover crop of rye to plow under for those crops that require a good soil.

Objections

These paragraphs have shown how great quantities of soil-improving, organic material may be obtained while profitable crops are being produced. I do not expect that all who read this article will agree with the ideas, because their particular soil and farm conditions may not permit them to suit their vegetable and berry crops to these methods. Perhaps the first thing that will arouse objection is the plowing under of the sweet corn stalks. Why not save them for fodder? They are excellent for horses and cattle during the winter. All very true, but if we try to cut early sweet corn stalks and tie them up properly it will require a lot of time right in the last part of summer when there are hundreds of more important things to do. These early stalks are very small anyway and they are hard to cure properly during the hot weather. Furthermore, if they are fed to the cattle during the winter, the amount of manure and organic matter returned to the field equals about three-fifths of the material formerly contained in the stalks. Thus, there is a loss in fertility and labor when early sweet corn stalks are saved. This is often necessary, but meadow land is an asset to any farm, because it makes it less necessary for the farmer to take every bit of organic material from his truck fields for feeding. An acre of (field corn) stalks contains approximately 26 pounds of nitrogen, 4 pounds phosphoric acid and 42 pounds of potash; 200 bushels of potatoes remove from the soil 41 pounds nitrogen, 19 pounds of phosphoric acid and 69 pounds of potash. Therefore, when a farmer plows under the stalks which have produced his crop of corn he is adding much to his soil for the next year's crop.

The manure produced on the farm is of far greater value than we are likely to suppose. If we allow the barnyard manure to lie in a heap behind our stable doors, perhaps under the drip of the roof, more than half of its value will be washed away. Mr. Dicky, of the New Jersey State Agricultural College, estimates that this loss alone in this state is equal to $2,500,000 worth of plant food per year. The remedy is to provide shelter for the manure and to save the liquids At all times, remove the manure to the field for immediate use as soon as it is possible.

The vegetable grower must expect to use much more fertilizer than a general farmer, because his crops require more and are worth more per acre. Fertilizer makes possible a good yield of market crops and the production of much soil improvement material for the soil. Thus, the soil can be built up and maintained, while at the same time the grower is making a good living.

Over-doing the Job

Rich soil should never be given over to the exclusive use of soil improvement crops for an entire season. Plant something that offers the best opportunity for cash returns. I am reminded of my own experience five years ago, when we had a very fertile field on which fall spinach was to be planted in August. Spinach thrives according to the fertility of the soil. Therefore we sowed Canada field peas early that spring to further improve the soil. The result was that the peas grew enormously. They lodged and rotted underneath but continued to grow on top. In June the entire mass was plowed under (Figure 4) but the heavy rank growth did more harm than good. It would have been much more profitable to the grower and far better for the late spinach if an early cash crop had been harvested from the ground.

I would never again plow under such a heavy green growth, because it sours the soil. If it had been thoroly disc-harrowed a week before plowing it under, some of the material would have dried out a little and much of it would have been mixed thru the soil to decompose gradually.

The Fundamentals of Successful Corn Growing

Maintaining a Balance Between Heat and Moisture

There are certain fundamental requirements in moisture, heat, and fertility, which everywhere govern corn yields. A change in the supply of one may make a change in another advisable. Thus, the moisture requirement varies with the amount of heat available. In addition to water and heat, soil fertility and seed also must be regarded among the chief essentials. No one of these can be said to be more important than another. Where all are abundant except one (as water, for example), this one becomes the limiting factor and methods of supplying it become the important means of increasing the yield. In short, the secret of successful corn culture is to maintain a proper balance of moisture, heat, and fertility.

Corn possesses characteristics which appear to make it adapted to drouth conditions, and, on the other hand, has qualities which limit its possibilities as a crop for semi-arid regions and call for special adjustments. In producing a given weight of feed or dry matter, corn uses less water than certain other crops, as oats, clover, and alfalfa. It is deep rooted and can, if necessary, draw water from a depth of 5 or 6 feet. In hot, dry weather the rolling of the blades reduces the loss of water. On the other hand, the heat requirements and peculiar flowering habits of this crop make it less adapted to semi-arid regions than other grain or forage crops.

Corn makes its entire growth during the season of highest temperature, growing best when the thermometer registers 80 to 100 degrees F. It can not grow in early spring or late fall and its growth is retarded during the summer by cold nights or cool weather. It needs its greatest supply of moisture during the summer weeks when drouths are most likely and when rains are less effective because of losses from evaporation. In other words, the heat requirement of corn prevents growth at times when moisture conditions are likely to be most favorable, while lack of moisture frequently retards growth when heat conditions are most favorable. The problem, therefore, where heat is great and moisture deficient, is to store up moisture; and, where moisture is plentiful and heat deficient, so to handle the soil as to prevent moisture from lessening unduly such heat as may be available.

In the case of corn, which differs in this respect from perfect flowering plants, the setting of seed and the filling of the ears are seriously interfered with by summer drouths. Corn has two kinds of flowers: The tassel, or pollen bearer; and the seed-forming, or silk-bearing flowers. The pollen from one falling on the silk of the other is necessary to the development of grain. Drouthy conditions often hasten the shedding of pollen, but delay the appearance of silks, with the result that the pollen is mostly wasted. If fertilization is prevented in this way, no amount of later rain can cause kernels to form or make a good grain yield. The corn crop is sometimes injured by hot winds that do less damage to such crops as alfalfa and the grain sorghums. The problem here is by the choice of planting time and the selection of early-maturing or late-maturing varieties to bring about the double flowering of the corn at times when drouth is least liable to interfere with fertilization.

Everything corn gets from the soil is in liquid form, and the crop can not grow unless the soil contains moisture to spare.

In our semi-arid regions the soils for the most part are fertile, and the limiting factor is either water or heat. Raising corn may be likened to raising steam in an engine. Too much water lowers the temperature, whereas too little water is dangerous. Growth can take place only while there is a proper balance between heat and water. The two must be in the soil at the same time. Water falling as snow or rain before heat is present should be stored in the soil. The boiler should be filled before the fire is started.

In northern sections and at high altitudes the lack of heat limits corn yields, while in southern sections it is the lack of moisture. Far north a soil with a wet surface is usually a cold soil. Here the conservation of heat is more important than the conservation of moisture. Evaporation keeps the soil cool. Soil moisture rises to the surface to replace that which evaporates. Cultivation checks the rise of soil moisture to the surface, enabling the surface to dry more rapidly. The dry surface then becomes warm by taking in heat, which otherwise would have been wasted in evaporating water from below. Corn cultivated late in the afternoon may be frosted that night, while adjoining uncultivated rows escape the frost. The more rapid evaporation caused by recent cultivation first cools the surface, but as soon as the surface dries, the soil becomes warm quicker and the crop grows more rapidly than it would have done without the cultivation.

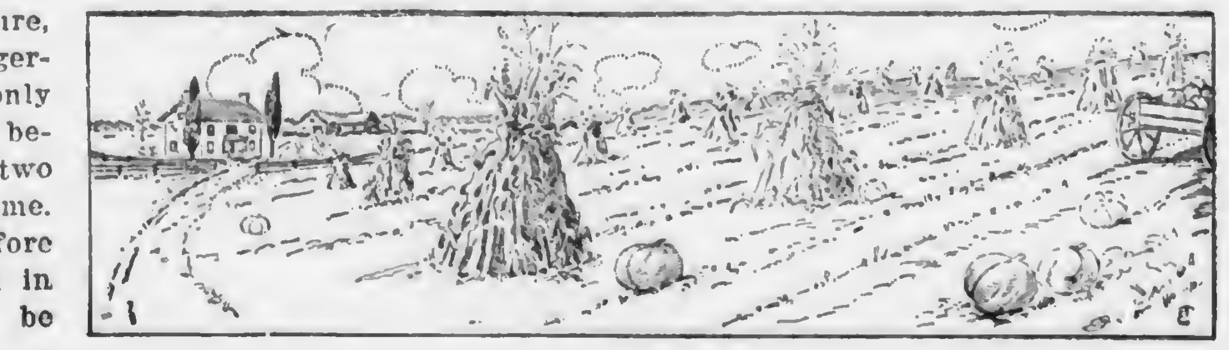
In northern localities, where lack of heat is a factor limiting corn yields, summer fallowing and moisture conservation tend to keep the soil cold and seldom give increased yields of corn. In southern localities, where lack of moisture is the limiting factor, summer fallowing and practices which increase soil moisture give increased yields of corn.

Oil or Gasoline Pump for Under-Ground Tank

In the southern part of the Great Plains, lack of moisture is the chief limiting factor. Ignoring special instances and speaking generally, every operation should be conducted in such manner and at such time as to enable the soil to take in and retain water. But just how and when is this to be done? Should the land be plowed deep or shallow, in the fall or in the spring? On what date should corn be planted, and how many times should it be cultivated?

These questions can not be answered correctly by rule or by averages. Each field of corn presents a combination of conditions which demand consideration in answering these questions. Time-of-planting tests conducted yearly for 100 years at a particular station might show that the highest average yield had been obtained from corn planted on May 10, and the next spring might be so unusually warm and forward as to warrant planting in April.

The next article will deal with getting moisture into the soil and preparing corn for planting.



Some Figures on Soybeans

The more the farmers experiment with and try to grow soybeans the better they come to appreciate their value in feeding live stock. I have read occasionally of very wonderful claims made for soybeans, and while I have no occasion to doubt them the three years' experience we have had with them inclines me to believe that if a farmer begins growing them he will learn to utilize them with live stock and discover new and valuable possibilities in them.

As an instance of this I will give an interesting experience we had last year. In a part of one field of soybeans there was about one and one-half acres that was rather thin and too weedy to cut for seed, and being pushed with other work at the time of cutting we let this patch stand expecting to cut it later, but after threshing out the soybeans the weather turned bad and the patch was not cut.

The field was closed up until early in December when we turned a herd of cattle we are fattening into the field to eat up the large stack of soybean vines left after threshing the beans. The first evening when the cattle came up, having been in the field about three hours, they ate about half as much corn and soybean silage as usual and munched over their feed of broken corn. The next day I watched them in the field, and understood the reason of the short appetites the previous evening.

A few of them were feeding about the stack, but most of them were out where the soys had not been cut, biting the pods off the standing vines. The snow was about four inches deep at the time. On examining the vines I found practically all the pods still filled with beans, but a small proportion of the pods having split open. The beans were pretty dry, tho some were swollen a little and dark in color, but not moldy or rotten.

We were going to buy some more cotton seed meal for the cattle, but since the beans are about equal in feeding value decided to utilize those on the vines which might have gone to waste. The cattle foraged on this patch for about two weeks until the icy condition prevented turning them out for fear they might injure themselves, and there are still beans there for them.

Before turning them into the beans they were consuming fourteen silage cartfuls of silage and four cartfuls of broken corn a day. When turned on the beans they ate only six cartfuls of silage a day, less than half before, but still continued to consume their four cartfuls of corn. In other words, the beans the cattle got each day were equal in value to the difference between fourteen and six cartfuls of silage, or eight cartfuls.

Our silage cart holds seventy-eight pounds of silage, and if we figure the value of the silage at $7.25 a ton the 624 pounds saved each day has a value of $2.25. It seems, therefore, that the feeding of the beans on the vines would be equal to $2.25 a day when they replaced $7.25 silage. If the value of the silage is $6 a ton then the beans would be equivalent to $1.87 a day. At this rate for twelve days the beans had a total value of $27.06, or $18.04 an acre for the 1½ acres. Of course all the credit cannot be placed to the beans for they ate quite a good deal from the stack of vines, but it nevertheless goes to prove the value of both vines and beans. One steer had a little bowel trouble the second day, having gotten an overfeed of beans, but otherwise the whole herd slickened up and improved in fine fashion.—J. L. Justice, Ind.

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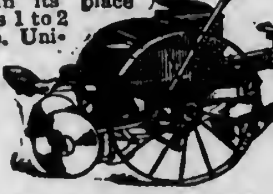

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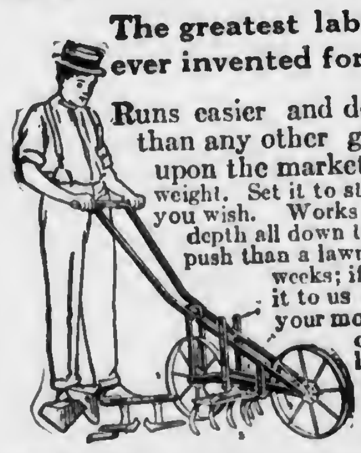

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Some Lessons in Pruning and Fertilizing Grapes

Some years ago, the various crops we were then producing were being discussed, among which was: The grape as a commercial proposition. One man said he thought the future for commercial grape culture was assured because the industry was at a low ebb so far as production was concerned. Prices were advancing, showing that production was not keeping pace with demand. Thinking the situation looked good I prepared to set a small vineyard. I had good grape soil and flattered myself that I could produce better and in larger amounts per given area than many vineyards I had seen growing. I had my own ideas about doing this, and that idea was, as had always been my practice, to feed the crop and feed it sufficiently to produce a full crop. I started out with that intention. The old saying, that an open confession is good for the soul, is what I propose to give you. We farmers, when we view things from the proper angle and make the right deductions, frequently learn as much from our mistakes as we do from our successes, and I often think we learn more, because when a man has several successes he is likely to think he knows it all, hence, gets a "swelled head". Lack of a full measure of success makes one use some gray matter to overcome his failures. That was my case in trying to grow larger yields of grapes than my neighbors.

I set an acre as a starter. My first mistake was in planting them too close together for the post and wire system; but that was not my fault. The nurseryman from whom I purchased the plants insisted that 8x9 feet was too far apart, but I planted them out that distance; that is, 9 feet between rows and 8 feet apart in the row. The vines when long enough were to be trained on two wires attached to posts which were set 16 ft. apart, one between every two vines. My idea was to train one vine each way on each wire, making four leaders. I planned to take one of these out each year, thus renewing my vineyard every four years. The first year after planting, the vines were thinned out to two or three of the most promising and tied to stakes driven in the ground. They were left thus for one year. When the vineyard was two years old, the posts were set and wires stretched. The first or lower wire was made fast 3 feet above the ground; the second 18 inches higher. Then the vines were trained in both directions on the wires, so far as I had vines to do it. Some had four long enough to reach; others had only three and some had only two that would reach the bottom wire, and perhaps one or two more that had to be tied to the top wire with twine and then wait for them to grow long enough to train along the wire.

I was quite proud of my young vineyard when it was all fixed up. Now I thought I would manure it and did, then I applied a moderate dressing of fertilizer during the growing season. Did I have any fruit? I cut four tons of fine grapes. But, oh my! the wood; some of the young wood was 16 feet long, and lots of it. Now I planned to do without manure, so I sowed the ground with crimson clover and got a good catch. I plowed that under when about four inches high and applied acid phosphate, figuring that my crimson clover would furnish nitrogen enough. It furnished far too much.

By this time, I had vines trained in all directions on each wire and as yet had not cut out any old wood, only trimming the new wood back to two buds. The nitrogen furnished by that clover, together with what had been left over from the season before, stimulated a wood growth beyond all imagination. I had a crow's nest. What about fruit? Well, the crop was reduced one-third and twice as hard to gather. What is the lesson? Too much food, and the wrong method of pruning; too much old wood and not enough new. Since that time I have pruned differently, experimenting to learn what is best, and have now gotten back to where I should have stayed. Whether my conditions are the same as it would be in other localities I am unable to say, but I imagine there is not much difference.

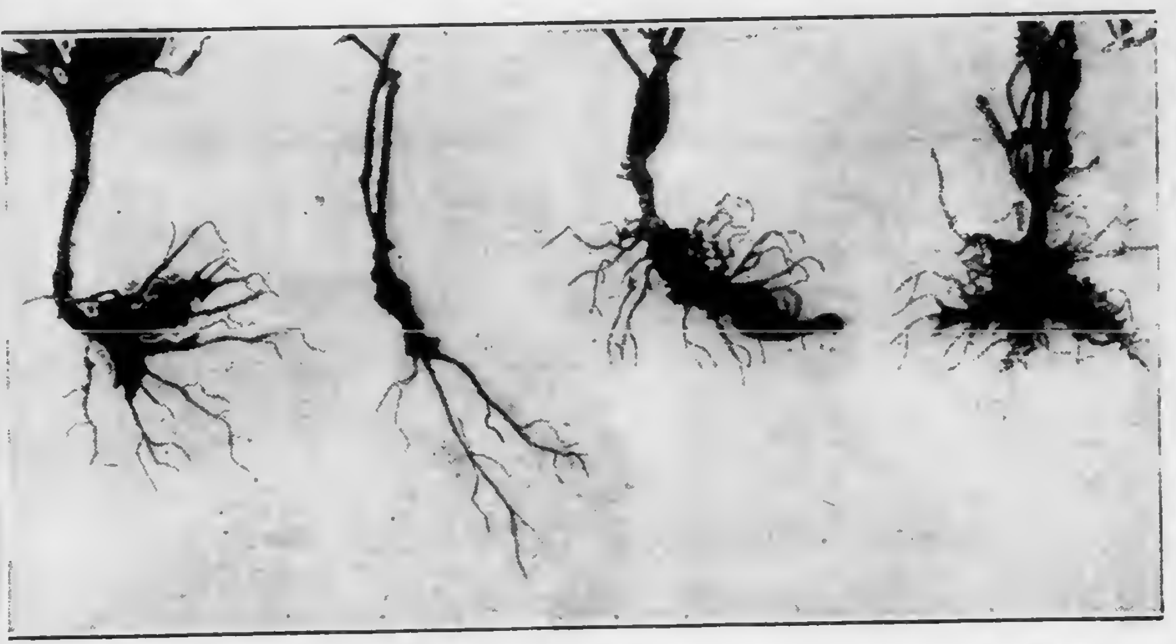
The lesson learned by partial failure is this: First, do not feed the grape vine too heavily. Don't plant it on strong, rich soil. Second, prune for fruit and not for wood. My method now is to cut out as much of the old wood as I have new canes to take their places; further than that, there are always places where young wood grows from that in time become a veritable knot, or a cluster of stubs and buds. That should not be allowed to occur; each pruning should take out all previous growth except one cane, and that one cut back to two buds.

If the vineyard makes a normal growth is it quite possible that some summer pruning will be beneficial. It is essential in a humid climate to have the vines so that the dews and moisture after rains dry off as quickly as possible to prevent the fungus which causes the brown rot to get any chance to start and multiply. That is the main reason why we place our first wire three feet or more from the ground. This allows a free circulation of air under each row of vines, helping to dry them off readily.—C. C. Hulsart, N. J.

RESULT OF INOCULATING PEAS

Last year I tried inoculation on garden peas and beans as an experiment with very successful results.

The accompanying illustration shows the roots of pea vines. The first root at left was inoculated and grown where peas were grown before. The root was very full of nodules. The second root was uninoculated and grown where peas were grown before. This root was very full of nodules, but not nearly so large or strong a root as No. 1. Root No. 3 was not inoculated and was grown where peas were never grown before. The root is without nodules and has very slender plant stems and few peas. Root No. 4 was inoculated and grown where peas were never grown before. It shows quite a lot of nodules and a strong root and stems. The peas which were inoculated were much more thrifty vines and bore more peas than those not inoculated.



No. 4 No. 3 No. 2 No. 1
Effects of Inoculation on Pea Vine Roots

The illustration of a plate of peas shows how well they were filled out and size of peas. Experiments like this make gardening more interesting and increase the crop and fertility of the soil at the same time.

From 6 single rows each 75 feet long, enough shelled peas were picked to can 24 quarts and supply the immediate needs of a family of eight and from 2 rows each 75 feet long 12 quarts were canned and quite a few used from the vines. Seed for next summer crop was also saved. —Mary A. Kintigh, Westmoreland County, Pa.

WINTER KILLS MANY PEACH TREES

Necessitates Severe Pruning and Good Care

From the many reports reaching the Maryland Experiment Station on the condition of peach trees in the western sections, it appears that not only have practically all the fruit buds been killed but that severe damage is very likely to be done to the entire tree.

This condition will necessitate severe pruning, according to those in charge of orchard work at the Maryland Experiment Station, if the trees are to be saved. The following directions are given those whose orchards are seriously injured:

"Where the wood has been browned but there is still a thin layer of live tissue next the bark, or the young twigs are killed, prune back to the second or third year's growth on young trees and to one or two-inch wood on older trees.

"For split bark due to freezing, trim the loose bark back to where it is attached to the wood and paint the exposed wood with carbolinium, creosote oil, or linseed oil and white lead, leaving a strip of untreated wood next to the line of cambium. Or the live parts might safely be treated with a mixture of tallow and rosin dissolved in alcohol as a protection until growth can start and cover the exposed portions.

"There is considerable danger of cutting weakened old trees back too much but it all depends on how badly they are injured. If there is very little live wood or cambium left under the bark the trees will probably die in any case. Sometimes they are killed only near the base and will even put out leaves and then die later in the year.

"But where the tree can still be saved, in addition to the cutting back they should have the best conditions for growth that fertilizing and culture will give them."

PERSONAL EXPERIENCES IN FRUIT GROWING

Getting the right trees and selling the apples is but a small part of apple-production. We may have these requisites, yet lacking the patience of Job, and sticking qualities of the yellow jacket, we will make a financial failure—in fact, never get a paying crop. Getting after the pests of the apple tree is one of the jobs we must follow under the ground, on the ground, and above the ground, spring, summer and fall and winter —and then some. After hanging on to the job like this for eight or ten years a man may be excused for feeling that he has done his part. To get a little encouragement, as is frequently necessary, for the money and labor put in the orchard, you tramp out thru the snow and look up and down the rows of beautiful symmetrical trees, reaching their hanging arms out to you; arms covered with buds ready to burst forth in bloom, and later, bend low with their load of beautiful, rich, juicy fruit. Trees upon which you have spent your very best energy, in fact they seem almost like children as you watch their growth and development, and now they are going to give you rich returns for their care. Then you look down and see something odd about the trunks. Smash go your dreams of returns for years of labor. The mice and rabbits have been at them during the deep snows and have written "finis" to more than one tree.

Of course, we understand we should have protected the trunks and then shoveled the deep snows away. But labor could not be had and winter came before we were ready. During the winter, we had other places in which to make our ten to fifteen hours a day without shoveling snow in the orchards. Of 1,500 apple trees there are about one-fourth seriously damaged. Many of them we will re-plant. Many of the smaller ones we will graft as they are girdled above the ground. Of the older trees, we will try to save most of them by bridge-grafting. It is a slow and tedious job, but a 10-year Stayman tree is worth money. We rather had the blues when we saw the extent of the damage, but we will not give up, remembering that "eternal vigilance is the price of success." So we will plant and dig and spray this year again, and try to do our bit. From the many reports over the country, we believe many thousands of trees have been destroyed. Further, many who expected to plant will not do so now. Spraying is also a vital question this year. More than one grower at the fruit meeting said that the orchard must take care of itself this year. We all know this spells destruction. The work of ten, twenty, or thirty years may be lost by two or three years of neglect. Spraying is no longer an experiment but an established fact. It is either spray and care properly for your orchard or go out of the business. In speaking with a neighbor the other day who has some nice Stayman trees coming on, I asked if he would spray this spring. He said: "No, it does not pay as apples can hardly be given away." "Yes, they have been low and slow sale at that, but you know we are getting from $1.50 to $3 for all ours by the bushel," I replied. "Oh, yes, but you have fine apples." That is the point. Get a product worth something and it can usually be sold for its full value. So let us give the trees even better care than last year and our labor will be rewarded.—Clayton F. Weaver, York Co., Pa.

VEGETABLE GROWERS USING LIME

An outstanding feature of the preparations now being made for vegetable production is the more general use of lime. This material is especially beneficial when it is applied broadcast in moderate amounts on plowed soil. By harrowing it into the soil at once, the dustlike particles will not have an opportunity to collect and form small lumps which would be slow to act. Some quick-growing vegetables are especially responsive to applications of lime on sour soil. Under such conditions, a quick-acting lime would be of the greatest benefit. The application of lime is recommended on sour soil when the following lime-loving vegetables are to be planted: Beets, cabbage, cantaloupes, celery, cucumbers, eggplants, lettuce, onions, peppers, spinach, sweet corn, sweet potatoes and swiss chard. Many other vegetables are helped by lime, but these are considered to be the most responsive.

GERMINATION TEST OF SEED CORN

Extension Circular No. 71, of the Pennsylvania State College, describes in detail the most simple and efficient methods of making germination tests of seed corn. The circular is fully illustrated and the direction are given in simple language easily understood and as easily followed. Every farmer wanting to test his seed corn, an dthat means every farmer this year, should send for the circular at once. It is mailed free upon request addressed to State College, Pa.

LICENSE FOR EXPLOSIVES

There is a federal law requiring all users and dealers in explosives to take out a government license. The purpose is to keep dangerous explosives out of the hands of plotters. A user must have a license before he can buy explosives either from a dealer or a manufacturer. The license costs only twenty-five cents and can be secured thru licensing agents located in every county. County clerks are usually the proper officials to issue licenses. Full information may be secured by addressing the Bureau of Mines, Explosives Division, Washington, D. C.

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PHILADELPHIA, PA., APRIL 20, 1918.

Furloughed Labor

Arrangements have been completed whereby enlisted men may be furloughed to help on the farms during the time of greatest need. Regulations are carefully drawn to insure against abuse or misuse of the privilege. It must be shown that the help is actually needed, that the men asked for are willing to accept furlough and do the work designated. No enlisted man above the grade of first sergeant can be furloughed and men will not be permitted to leave if in the judgment of the commanding officer their absence will interfere with the progress of military training and preparation. Furloughs will be granted for short periods only, lagely for seeding and harvest time. Full information and application blanks may be secured from county agents or from government appeal agents of the local draft boards. This measure was passed in response to the appeals for more labor on the farm. It may be expected, however, that the recent urgency for men to be sent abroad will interfere somewhat with the full operation of the law.

* * *

Buy Bonds

If one of your best friends, in whom you had the utmost confidence, came to you and asked you to loan him money at a rate better than the savings bank paid, you would do it, wouldn't you? That is what the Federal government is asking in the third Liberty Loan drive. It does not ask anyone to give it the money. It merely asks for the loan of such money as you have to put out at interest. It offers the best security possible to put back of a loan. The value of every bank, every manufacturing plant and every farm in the country stands back of the bond. So long as the country stands, the bonds are good for their full face value. And they pay 4¼ percent interest, beginning May 9, 1918, and interest is paid semi-annually thereafter. The bonds are exempt from all taxes except inheritance tax under the state government and superincome and excess profits taxes under the federal government. They offer you an absolutely safe investment for your money and an opportunity to assist in the most critical undertaking your country has ever engaged in.

We know that many, and perhaps most, farmers feel that they need all of their available money in taking care of their obligation to raise all of the food materials necessary in the conduct of the war. It would not be wise for such to invest money that is actually needed in the farm work of the year. But the bonds may be taken on the installment plan, and payments made each week. This gives opportunity to make the bond account a savings account, and encourages small savings—a thing that has been greatly needed in this country. The fact that the bonds may be sold at any time adds to their utility as savings. And there are many farmers that have money to invest. These should subscribe to the loan. The safety of the investment is assured, and the recent events on the fighting front in France are but an indication of the kind of fighting we have got to do if we are to make our future safe. Help now with your money.

* * *

Wheat Famine

Will we have a wheat famine between now and August first? The answer is almost certain to be yes unless we in the United States can manage to get along with an average of 1¾ pounds of bread and one-half pound of flour for our other baking per week until the new wheat comes on the market. It is doubtful if the people generally realize just how serious the situation is. Read the article on page 17 of this issue. It outlines the wheat situation of the country and tells what we have got to do for our Allies. With the events of the past two weeks on the fighting front, there is no question as to our duty to send all of the supplies we can to help those who are fighting for us. It is not a duty but a privilege which every red-blooded American will be glad to sacrifice for. And unless we make the necessary sacrifice we may expect the Food Administration to enforce regulations that will reach all of us. It is said on good authority that unless we obey the Food Administration requests faithfully there will not be a pound of wheat flour in the stores by July 1.

This need not happen if we will each do our part—observe not only wheatless Mondays and wheatless Wednesdays all day, every meal in every particular, but at every meal eat not more than one slice of war bread (75 percent wheat flour). We must eat instead the various substitutes. There is such a wide variety of good substitutes that we will find it no hardship. There are besides corn meal and oat meal, the corn grits, corn flour, hominy, rolled oats, barley, barley meal and flour, tapioca, buckwheat, potatoes and other starchy vegetables, rice and rice flour, etc. Remember that in wheat is included not only wheat flour but the various wheat breakfast cereals, graham, bran, macaroni, spaghetti, noodles and pastries. Pie crusts and other uses of flour must be watched if we are to keep within that half pound of wheat flour per week that has been set as the limit.

Remember also that children and old people cannot depend so much on the coarser cereals as more rugged adults can; so, we adults should stint ourselves still more on wheat products in order that the children and old people may have the wheat bread.

* * *

Pencil Farming

There is a peculiar fascination in farming on paper with a good, well-sharpened pencil. It is much more comfortable than getting out and doing the actual work, and the results are limited only by one's imagination and ability to "figger". This is fully demonstrated in the following quotation from our state Department of Agriculture, explaining its master stroke in buying farm tractors to rent to farmers. It says:

> "It is estimated that the tractors will average twelve acres of plowing a day or 480 acres for the forty tractors. It is also figured that there will be sixty full working days in which work can be done in preparing the soil for the season's crops and that in that time 28,800 acres will be prepared. Most of the work will be done in counties where there are big corn yields and it is estimated that the fields prepared by the tractors will yield at least a million and a half bushels of corn with a value at present prices of $2,750,000.
>
> "To accomplish the same amount of work that the forty tractors and eighty operators will do it is estimated that it would take three hundred and twenty farmers using nine hundred and sixty horses steadily for sixty days."

Accepting the estimate of $2,750,000 as the value of a crop made possible by these machines, there would be $68,750 returned for each tractor. Deducting $2,000 as the purchase price, each machine should return $66,750 to be turned into the state treasury or used for promotion purposes. Some mathematician has missed his calling. He should be a tractor salesman.

Unwelcome Advice

There has come to our notice a letter and a pamphlet which is being sent out, presumably to granges generally, by N. J. Bachelder, of New Hampshire, Past Master of the National Grange. In the letter he states his purpose as being "to call to your attention a certain movement which lately has become a serious menace to the welfare and prosperity of our country, and which, if not checked, may involve our National Grange . . . . I am anxious to have your advice before taking further steps to prevent the growth of this un-American and unpatriotic activity. . . . . I want to know that I am right in believing that the farmers of this country . . . are opposed to any such effort to involve them either with labor unions or the Non-Partisan League."

The pamphlet starts out with a strong patriotic appeal as to the duty of farmers at this time and warns them against being led "into some suspicious trap baited with one kind of politics or another and eventually suffer accordingly." The author then proceeds to show the grave dangers which threaten the nation from a spread of the doctrines advocated by the Non-Partisan League, admitting, however, that the league was "formed with an honest purpose and designed to rectify certain things which were inimical to the farmers of the Dakotas." But at this time, Mr. Bachelder says, "No farmer can afford to sully his patriotism and associate himself actively with a propaganda such as that advocated by the Non-Partisan League."

Regarding recent activities of some leading grangers of Pennsylvania, moves made by direction of state grange, together with other active, public-spirited men, the writer says: "In the state of Pennsylvania and in some other states an effort is being made to form a coalition between the labor unionists and the farmers. . . . . Stop for a moment and think who are the promoters of this alliance." He then proceeds to point out that the "Non-Partisan League is a political organization and it is striving to succeed for politics and other legislation"; that the farmer would be infinitely worse off under Government regulation and Government control than he is today and that with government control of business the farmer would be limited in everything. Mr. Bachelder seems, by his references, to be especially exercised over the independent activities of farmers in Pennsylvania and New York.

We have no interest in defending or promoting the activities of the Non-Partisan League or any other organization as such, but we have an interest in promoting the present tendency among farmers to independent political thought and action. In the Northwest the League has been the means of obtaining for the farmers some of their just rights by the overthrow of political bosses. This is what is needed in the East also, and it is what is promised by the recent activities in New York and Pennsylvania — activities which Mr. Bachelder criticises and deplores. If, to be politically independent; to unite for the promotion of justice and the overthrow of evil is unpatriotic, then we do not know what patriotism is.

We would ask Mr. Bachelder why he opposes the joining of farmers for political purposes, and why he desires that they continue to be the dupes of unscrupulous politicians? Is it because the indications at this time point to more real democracy as a result of the World War? Has he a fear that special privilege may suffer in the rebuilding? Mr. Bachelder's record as master of the National Grange places him with the reactionaries of the country, since he helped to stultify the grange by failure to make it a virile, active representative of the farmers' needs. He belongs to that class of so-called farmer leaders who have been more interested in keeping the farmer trailing along in the wake of existing political machines than in developing co-operation for the promotion of political and economic justice. In view of the fact that we have received pamphlets containing similar doctrine from other sources—bankers, manufacturers, business leagues, etc.—we would be interested to know who pays the expense of sending out the pamphlet bearing the name of Nahum J. Bachelder.

Finally, we believe that the grangers and other farmers of Pennsylvania and New York, as well as of all the eastern States, are intelligent enough to manage their own political affairs and patriotic enough not to need the caution and advice of the Ex-Master from New Hampshire.

HARRISBURG NOTES

Whole New Plan Likely.—While Auditor General Snyder seems to have been able to effect some sort of arrangement between those in charge of the field work of the State Department of Agriculture and State College so as to avoid duplication and overlapping in experiment, advisory and educational work at various points in the state it is generally recognized that the next legislature will be called upon to clearly define the spheres of the two bodies. This conflict in work with consequent lack of economy has been apparent to everyone about the Capitol for years, but nothing has been done except talk about it. Early in the Brumbaugh administration attention was called to it, but beyond some gubernatorial verbiage little was done to correct the anomalous situation. Meanwhile the auditor general has taken the practical step and refused to make payments unless the field duplication ceases and has called the men in charge to see that a co-operative plan is worked out. The studies make by the Economy and Efficiency Commission, whose continuance the governor stopped with his veto last summer, are still available for an auditor general or any one else wishing to study them.

Storm Damage.—Reports coming to the State Department of Agriculture indicate that in some sections of the state cherry, apricot and plum trees whose buds had opened were damaged by the snow storm of the last week and that in some districts peach trees were also affected. The greatest damage seems to have come from breaking of branches of trees, while in many sections robins, bluebirds and other insect eaters were killed thru cold and starvation, the birds having migrated and started nesting. In some counties farmers fed the birds as was done with quail last winter. The storm upset agricultural work generally and has caused considerable difficulty in regard to roads.

To Handle the Blanks.—The State Commission of Agriculture, which is moving to see that seed corn conditions have been met, has arranged to handle blanks for the farm furloughs which it is proposed to grant to men in the army. The commission will distribute blanks to applicants who must then send them to the local draft boards in charge. Many inquiries have come to the Capitol about these farm furloughs, but beyond the information that the blanks must be filled out by the soldier and attested by qualified persons before going to local boards nothing is known. The men to start moving to camps next week are not to include any engaged in agricultural pursuits.

Road Building Going On.—In conjunction with counties and townships the state highway department, which has let contracts for over a million and a half dollars' worth of work since the first of the year, is asking for bids for about twenty miles of new work. This last week bids were asked for sixteen miles. In every instance county authorities are joining in the requests for construction.

Three Millions.—Income from automobile licenses for 1918 alone will pass the $3,000,000 mark this week which will make that great sum and what is left from the 1917 revenue available for road repairs and maintenance in addition to the half million dollars voted to help out, if necessary, by the State Defense Commission. Repair work is under way generally and will be speeded up between now and June 1. It is interesting to note that of the cars registered 252,000 are pneumatic tired and 21,106 solid tired.

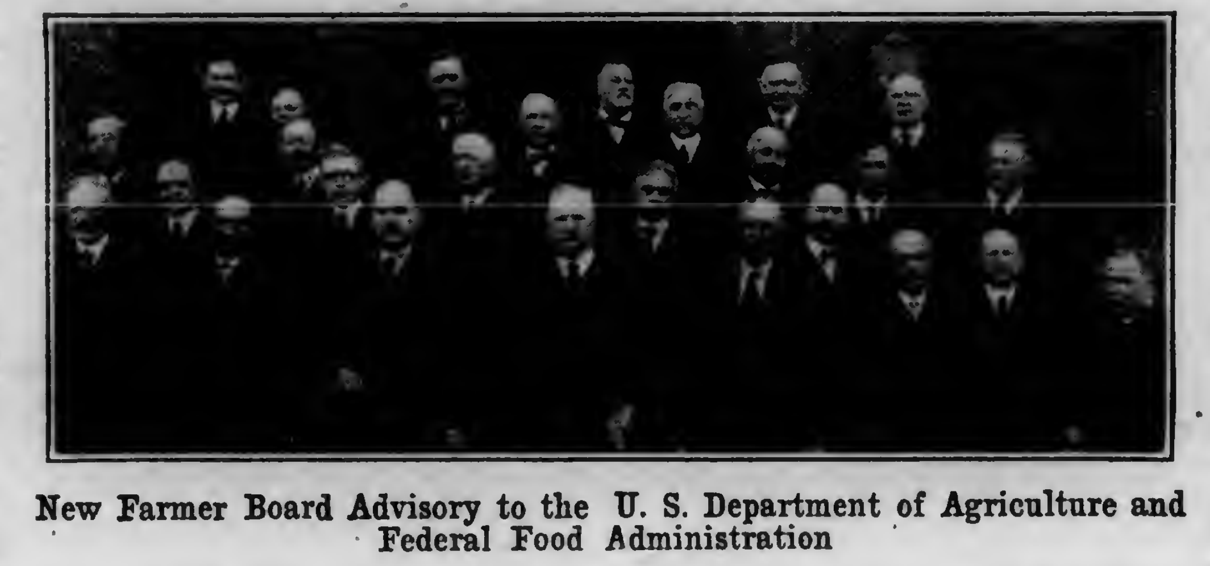
More Buckwheat and Rye. — Reports from counties indicate that while the acreage to be devoted to potatoes and wheat this year will not be as great as that of 1917 there will be more buckwheat and rye planted. Some counties will have record corn areas.

Toll Road Closing.—The statement of the activities of the state in buying up toll roads shows that since September 1 there have been acquired by the state 138 miles of turnpike and that probably twenty-five more miles will soon be taken over. The prices paid have been steep, but counties have shared with the state. One twelve-mile stretch in Lancaster County cost the state and county $90,000. Turnpikes bought are in twelve counties with negotiations on for more in three others. The money is about used up as far as the state is concerned.—Hamilton, Harrisburg, April 15.

NEW JERSEY FARM NOTES

Poultry Program.—The Executive Committee of the New Jersey Poultry Association, in session at Trenton, has outlined a war program for its coming year's work. This program is divided into two parts: First, to keep thoroly informed of existing conditions by studying thru every means the constant and ever-changing factors affecting the industry and to determine the reaction of such conditions upon poultry production. Second, to stimulate in every possible way a greater activity and efficiency in poultry production.

Few Farms Idle.—According to Alva Agee, Secretary of the State Department of Agriculture, with the exception of Connecticut, there is hardly another state in the union that has been hit as New Jersey in the matter of loss of agricultural help, which has been attracted to the munition and other manufacturing plants because of the greatly increased salaries offered there. Yet, Mr. Agee optimistically declared that practically few farms in this commonwealth will remain idle for lack of hands to till and cultivate them this year, when the need for farming activities is greater than ever in the history of the country and the winning of a world war depends to a large extent upon the successful prosecution of such activities. Mr. Agee stated frankly that the total acreage to be found under cultivation on each farm this season will not be as large as usual, due to the lack of help.



New Farmer Board Advisory to the U. S. Department of Agriculture and Federal Food Administration

Member of Advisory Board.—New Jersey agricultural interests have been honored by the National Government thru Secretary H. W. Jeffers, Vice President of the New Jersey State Board of Agriculture, who has been named as a member of the advisory board, consisting of 24 of the leading agriculturists in the country, which has been formed to be called into conference by the Federal authorities from time to time on farm problems. Mr. Jeffers is president of the Walker-Gordon Farms, and is a heavy producer of milk and cream. He also produced several thousand tons of alfalfa annually and is expected to be of value to the National Department of Agriculture.—L.

NEW YORK LETTER

Ratification Not Dead in State Legislature.—The prohibition issue has again come to the fore in Albany. Senator Emerson has deserted the ranks of the "wets". He, as chairman of the Taxation and Retrenchment Committee, will send the bill back to the Senate, eliminating the referendum clause and strengthening the preambles, making it a patriotic measure. At a recent test vote the ratification bill only lacked two votes, and it is hoped that if a full attendance of the upper house can be secured the measure will pass. The Assembly will undoubtedly pass the ratification amendment if the Senate does.

Phenomenal Registration. — The wet element in the State Legislature is doing its level best to expedite business so that the session may close before the special election, April 16, 37 cities of the state to determine the liquor question. The women are coming out very strongly in this, their first election, and they are registering in these cities in phenomenal numbers preparatory to voting on the local license question. A particularly heavy registration has been received in Syracuse, and it is interesting to note how many of the registrants are women of many years and wide knowledge of franchise matters. In many wards it has been found there are more women voters than men. Women of foreign birth show surprising interest in the liquor question.

Sunday Motion Pictures.—A bill to permit the showing of motion pictures on Sundays thruout the state has been referred to a committee of the Senate on the objection of a member to its advancement.

Women to be Jurors. — Poughkeepsie, the home of Vassar College, will hereafter see that as many women as men are called to serve as Jurors, as being only fair in war time when there is such a drain on man power. Women solicitors for the third Liberty loan have made good, so that more of them will be chosen for the next loan.

Farm Cadets from New York City. —Cortland and Tompkins Counties last year had 27 farm cadets from New York City, boys from 17 to 20 years of age, in charge of their teacher, a former farmer lad of McLean, who brought these boys to the farms of his home town and supervised their work thruout the season. Almost every boy made good and the farmers were well pleased, owing largely to the right spirit inculcated in each by a supervisor of the boys who understood the point of view of both boys and employers. This year the same teacher will supervise 50 of his boys in the same locality. The beginner's wages last year were $12 the first month and as much more later as the farmers felt that the boys earned—none getting less than $20 after the first month, and some getting $30 before the season was over. The boys all gained noticeably in weight and muscular development, and many of them will return to the same work again this year.

Egg Distributors Appeal. — The New York Food Administrator recommended that two leading distributors of eggs have their licenses suspended for profiteering. The companies have appealed to the federal administration, and will place a report before the President.

New Dairy League Organized. — King's Ferry has organized a new branch of the Dairymen's League, altho prominent dairymen opposed such action a year ago. W. N. Depew, president of the Throop League, the largest in the county, advised co-ordination of the new league with the new federation of agriculture. A women's meeting was held in connection with the dairymen's meeting and interesting programs were carried out at both meetings.

Mass Meetings of Farmers.—Continuing the policy of the New State Federation of Agriculture to interest and enlist all the rural organizations of the state in the one great body which shall represent and act for them all, a great mass meeting of farmers was held in Ulster County recently. A remarkable attendance from that and neighboring counties was present, representing largely fruit and dairy farms. Addresses were made by officers of the new federation and other prominent rural experts, and included S. L. Strivings, the president, Mr. Vail, Mr. Burkett, Mr. Dillon, Mr. Fraser, and Mr. Burt. A resolution was passed that favored organizing local units of the body in communities where there was no grange, dairymen's league or other rural organization, so that all parts of the state may be directly united with the leading body. Another mass meeting was held at Walden, on April 6. As the people have time to consider the new organization and its workings they strongly favor the wise ruling that any official of the federation who accepts office or a position on any state commission, automatically severs his connection with the federation. In the case of Mr. Giles' opportunity to become Secretary of the Council of Farms and Markets approval of his refusal is general, not that he would not make an ideal man for the work, but that at present the farmers do not swing or influence the Council or the Legislature and his name and his connection with the state grange would be used to give color to acts the farmers do not approve. It becomes daily more and more clear that the first work of the Federation and of the people of the state is to put "Fifty Farmers in the State Legislature". —F.

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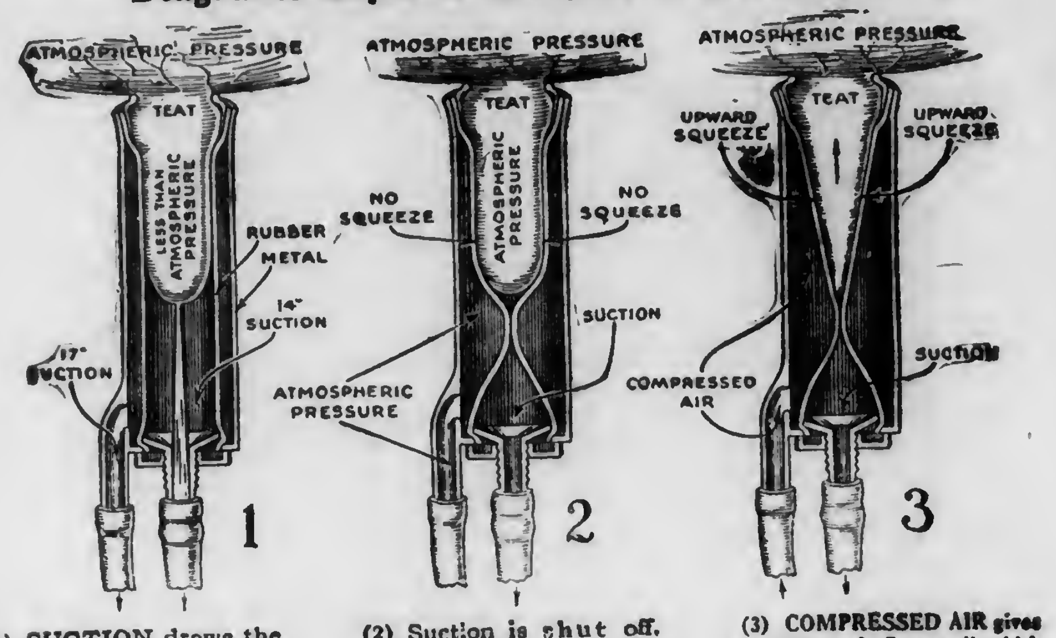

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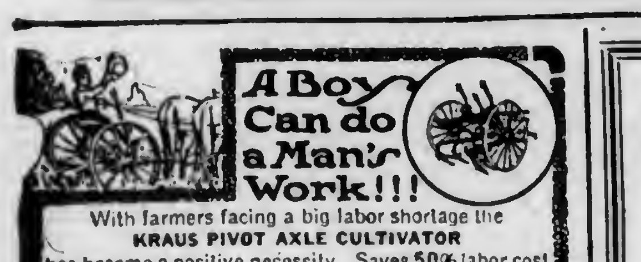

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Handling Contagious Abortion

Timely Suggestions on Prevention and Cure

I. D. WILSON, D. V. M., Pennsylvania

A prominent dairyman recently remarked that the greatest handicaps to the dairy industry today are contagious abortion and tuberculosis. Whether or not dairymen agree with this depends largely upon their personal experience in dealing with these two insidious diseases. Certain it is that contagious abortion and tuberculosis constitute a serious menace, not only to the dairy industry, but are rapidly spreading to beef cattle as well. Any one who has attempted to eradicate either disease from his herd knows that they stand alone in losses produced and in difficulty of control. Of the two diseases, contagious abortion doubtless produces the greater direct loss to the farmer.

Symptoms

Until recently, little was definitely known of contagious abortion and many points are still not definitely settled in the minds of our authorities and specialists on the disease. Much, however, has been learned in the last few years and much valuable experimental work is now in progress. Contagious abortion manifests itself in three ways: First by abortion of the fetus; second, by retention of the placenta (afterbirth) and third, by sterility or failure of the affected animals to breed. It is also believed by many that white scours in calves is in part at least caused by the same organism that causes contagious abortion. The affected animal may show any one, any combination, or all of the above mentioned symptoms, or the infection may be so mild that no symptoms whatever are shown, and yet the animal's blood will react to bacteriological tests and the germ that causes the disease can be found in the afterbirth and in the discharges for a time after calving. Such an animal is often a spreader of the disease.

The symptom most frequently associated with contagious abortion is the expulsion of the immature fetus. This may occur at any time in the period of gestation. When it occurs when the fetus is less than three months along, it generally passes unnoticed, as at that time the fetus and membranes are very small. If the abortion does not occur until towards the close of the period of pregnancy, the calf may be born abortion can be found in a calf suffering from white scours. Altho alive but generally is so weak that it dies in a few hours. Very few cows abort their calves more than once, and still fewer more than twice or three times.

The symptom that causes the greatest financial loss to the owner of a herd affected with contagious abortion is the resulting sterility. Until a few years ago we had little idea as to the causes of sterility in cows, but we have learned that by far the most of it is caused by contagious abortion. It is quite generally admitted that the losses from sterility exceed those produced by the actual abortion of the calves.

The retention of the placenta (afterbirth) is a symptom not usually associated with contagious abortion, yet we now know that such is the case. This symptom is not only very annoying but generally means lessened milk flow, for a time at least, and occasionally the loss of a cow. Unless properly handled, it often leads to sterility.

It has been noticed that white scours in calves occur most frequently in herds where contagious abortion exists. Also in many cases the germ which produces contagious there is no conclusive evidence to prove that such is the case, there is ground for suspicion.

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How Transmitted

The disease is probably most often transmitted from animal to animal by way of the digestive tract. This is brought about by the feed becoming contaminated with the discharges from the genital organs of an affected animal. The bull probably acts only as a mechanical carrier of the disease from cow to cow. The milk from aborting cows is known to contain the germ which is responsible for the disease but just what effect this milk has upon transmitting the disease to calves, is not clearly understood.

In controlling contagious abortion, the symptoms of the disease and the ways by which it is spread from animal to animal must be kept clearly in mind. In the first place, let it be clearly understood that at the present time there is no cure in the way of drugs or vaccines. In the past, various drugs, serums, vaccines, etc., have been hailed as specifics for

the disease but, at the present time, there is nothing of proven value. The irregularly intermittent character of the disease and its tendency to limit itself makes it easy to be mistaken in the results obtained from various so-called cures.

Eradication

It is possible, however, by proper management to reduce the losses to a minimum and to finally eradicate the disease from the herd completely. Eradication of the disease is accomplished largely by sanitary measures. This means isolation of all cows that abort and keeping them in isolation until all discharge has stopped. Also the fetus and its membranes should be burned or buried deeply and the stall thoroly disinfected. The aborting cows should not be sold; first, because that is a means of spreading the disease to other herds and second, because a cow that has aborted once is not likely to abort the second time. If the aborting cows are continually sold, it means that new cows will have to be purchased which in turn, if not already affected, will become so and abort. If too many new animals are not added and if reasonable sanitary precautions are observed, the infection will generally die out in the course of from one to three years so that, after that time, little trouble will be experienced from the disease unless new infection is brought in by the addition of new animals to the herd. It is not clearly understood just why the infection dies out in the manner that it does, but it is generally believed that the germs causing the disease become less and less virulent and the cows more and more immune to their action. Of course, it goes without saying that great care should be taken not to bring animals known to be actively affected with the disease into the herd.

Treatment for Sterility

Regarding the treatment for the sterility, great progress has been made in the last two or three years. The treatment for sterility should only be attempted by a man who has had special training along the line. It is sufficient to say that under proper treatment from 75 to 90 percent of the cows that were formerly regarded as hopelessly sterile can now be made to breed. For the past two years, the Pennsylvania Live Stock Sanitary Board in co-operation with the local veterinarians, has been carrying on this work thruout the state with remarkably good results.

A few years ago it was considered proper to manually remove the placent (afterbirth) a few hours after the birth of the fetus. But best authorities are now well agreed that the placenta should not be removed until it loosens, even tho this may require several days. In some cases, of course, where the cow shows signs of going off feed, fever, etc., the placenta must be removed at once and the cow properly treated. These cases should be handled by a competent veterinarian. Fewer sterile cows result from this method of treatment than under the old method.

As has already been mentioned, the bull is now considered to be only a mechanical spreader of the disease. Accordingly, all that is necessary to prevent him from carrying the germs from infected to healthy cows is to flush the sheath with a mild antiseptic solution both before and after breeding; also keep the

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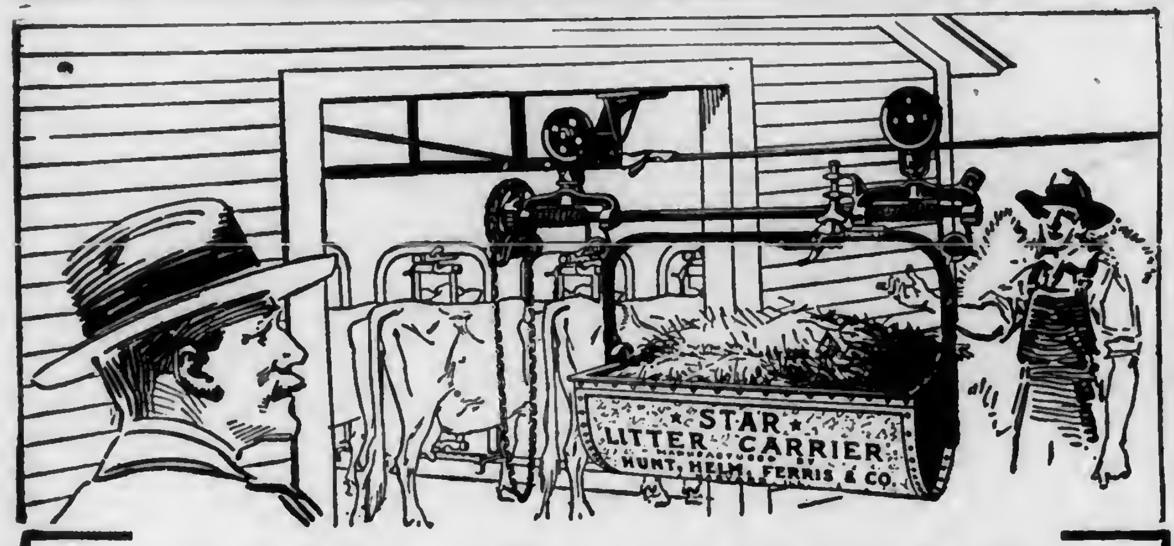

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long hairs around the sheath clipped off. A good antiseptic to use for this purpose is one-fourth to one-half of one percent of liquor cresolis compound which can be purchased at any drug store. The antiseptic fluid should be allowed to gravitate into the sheath from a height of four or five feet, thru a funnel and small rubber tube. The end of the sheath should be held closed after the tube has been inserted so that the fluid will not run out of the sheath immediately but will dilate it thoroly. A bull thus treated both before and after breeding stands little or no chance of spreading the germs of contagious abortion.

Sanitation in the most minute detail is the best prevention of white scours in calves. Of course that means also plenty of sun light, exercise and pure food. In the early stages, if the calf is still strong and vigorous, teaspoonful doses of bismuth and salol, equal parts, four times a day, or formalin in 10 to 20 drop doses, diluted in two ounces of milk, every three or four hours will often effect a cure.

Some Things to Remember

A few things to be remembered about contagious abortion are: Regard all abortions as contagious; accidental abortions are very rare. Do not sell cows because they have aborted; from 50 to 80 percent only abort once. You cannot sell the disease off your place and adding new animals only adds fuel to the fire. If you have sterile cows, get in touch with your local veterinarian or your state Live Stock Sanitary Board. They will probably be able to help you out. Remember that when you have contagious abortion in your herd that not infrequently cows will continue to come in heat regularly even after they are with calf for several months. Remember also that the sooner after calving a cow is bred the easier it will be to get her with calf. It should be borne in mind, however, that a cow should not be bred as long as she is discharging, as it will do no good and it adds to the danger of spreading infection.

DAIRYMEN'S LEAGUE HAS FIGHT

By March 25 we were assured from League headquarters that the dealers and condensors of milk had come back from their withdrawal from the Federal Commission and were ready to buy milk. The price had been suggested by the League at $2.50 for 3 percent milk, and the Commission set that price and the dealers agreed. That was the price for 150 miles from the city. Some days later we have not heard that contracts have been made and this causes uneasiness among farmers. Were not the assurances so firm we would be doubtful, but it hardly seems possible that there can be any fall-down now. Farmers feel that with milk at $50 a ton and feed at $60, there is little encouragement in the business. Some say they will sell cows, and the League advises the sale of all low-producers.

We are in the war, all of us farmers, and we want to do our best to help win even if we do not get as good treatment as big business and labor organizations get. We feel that such is the case, but we want no milk strike now even if we take a good deal less than we ought to have for our milk. That is what we do if we accept the price named, and we are going to do it if the dealers do not back down. If the dealers either now or later withdraw from the Federal Commission, it is pretty hard to say what will happen. Should the dealers get high-headed and demand that we sacrifice too much and give the Commission the discharge, it may mean that we will have to fight. We are hoping that the Commission will continue and that they will deal honorably with both sides for the present. Some time we will have to fight the dealers. That seems to be a foregone conclusion, but one war at a time is enough. We will avoid a break if possible so long as the war lasts. The "if possible" is on the list, however.

Better Organization

Many matters are on the list just now. We have the agricultural federation that is likely to be a force to be dealt with before the summer is over. The governor is inclined to try to placate the farmers now that they are organized somewhat better, but there is a pretty firm resolve among working farmers that there will be no compromise with the present political combinations. The Federation is out for a repeal of the Farms' and Markets' law and the state food control law. The Governor tried to compromise by appointing a different board for the former, but that does not remove the real objection and probably will not settle the matter. Our state government and the Department of Agriculture disapproved the League and that has not helped to keep farmers quiet. It looks as tho farmers will be more difficult to put down than they have been in the past. However, it is certain that the farmers have not yet won a decisive victory and there is much ahead for them to do.

There has been introduced into the legislature a bill to permit farmers, dairymen, gardeners and the like to combine and sell collectively, without violating the law. A hearing has been held relating to the bill and only the milk dealers appeared to object to its passage. It is fast coming to the surface that the milk dealers are the one element back of the prosecutions of the League. They, of course, are violating the law every day, but they cover up their doings while the League proceeded in the open. This bill ought to pass and dairymen are ready to assist in any way possible. We want fairness to the dealers, but we want them made to be fair also, for experience determines that they will not be fair unless compelled to be. That is the case with most business. Feed dealers for example appear to be better organized than ever and will exact larger profits than before so far as market prices are concerned. They may not be able to make as much as formerly, but this may not be any help to farmers.—L.

CHICAGO MILK PRICES

The disputed Chicago milk prices were readjusted for the early summer months. The dealers refused to pay $3.10 for March, the price fixed by the U. S. Food Administrator, so the price was lowered to $2.90. The April price is $2.65, and the May price will be $2.05, and June $1.80. The commission's prices for these months were $2.49, $2.04 and $1.80. Another conference will be held June 10 to fix prices for July, August and September.

Our Wheat Supply in 1918

Conditions Call For Extreme Conservation

By CHARLES W. HOLMAN

The ending of America's first year of participation in the world war was fraught with a peculiar significance. Just ahead of the German drive on the west front came the U. S. Food Administration's warning on March 24 that wheat stocks of the nation are low. It appealed to every citizen to cut his consumption of wheat flour by one-half and to limit himself to not more than six pounds of flour every 30 days. It asked us to limit our eating of wheat products from now until harvest to a maximum of 21,000,000 bushels per month.

This appeal came somewhat as a shock, and with it realization of the grim developments of the war. It was known that we had fulfilled our original promise to the Allies, having exported by the end of March 95,000,000 bushels of wheat. To extract so large a quantity from the nation's 1917 crop was an almost phenomenal undertaking made possible only by the general co-operation of the American public.

Change in Allies' Shipping Plans

The Allies had depended on securing great supplies from South America. They had purchased enormous quantities of wheat in Argentina where there is an available, exportable surplus of 133,000,000 bushels. If they could get that wheat across the water their bread problem would be solved. But there are not enough ships to go around just now. Every available vessel is pressed into service, carrying men, munitions, food and war supplies. The service of a ship is limited by the distance it traverses and it will require more than twice the ship tonnage to move wheat from Argentina than from our Atlantic ports. If North America could not furnish the wheat the Allies' cause would be handicapped to the extent that it would require ships to be withdrawn from their present assignments.

How Much Wheat Is In Sight?

Lifting the curtain on the food supply disclosed the fact that on March 1, the stocks of wheat on farms amounted to approximately 111,272,000 bushels. From this about 33,120,000 bushels must be set aside for seeding of spring wheat, leaving an available balance for marketing in farmers' hands of 78,152,000 bushels. On the same date the stocks of wheat in commercial hands were 69,693,000 bushels. This gave a total supply of wheat available for food purposes of 147,845,000 bushels.

Flour stocks at mills totaled 10,202,000 bushels. In addition there was a visible supply of flour at terminal elevators of 18,364,500 bushels. This gave a total of wheat and flour stocks on March 1, of 176,411,500 bushels. From this supply the United States must feed itself and share with the Allies, who require of us 75,000,000 bushels between March 1 and harvest. During the same period this nation normally consumes 200,000,000 bushels of wheat. To send to the Allies their requirements is viewed as a military necessity at Washington. This will leave available for home consumption 101,411,500 bushels, or about one-half of what is normally used.

Difficulties of Shipping Increase

With shipping the limiting factor, it falls upon the American people to choose whether they will require allied ships to move wheat from South American ports at the expense of the needed movement of troops, munitions and necessaries, thus endangering the military program, or to release ships by reducing our consumption of wheat. The Food Administration officials believe that this cut will be brought about by a voluntary action of the people.

There is a plentiful supply of wheat in Australia. The better part of two crops is banked up and storage is becoming a serious problem in the Australian commonwealth. Their exportable surplus is estimated at 180,000,000 bushels, but it is not thought that more than 5,000,000 bushels of this can be moved from Australia to the United States, as sailing vessels are about the only available transports that can be used.

Drive for Great Wheat Acreage

Simultaneously, a great drive is on to increase the 1918 crop to a sufficient yield to meet domestic consumption and the Allied needs next year. It is estimated that domestic needs for all purposes for the year beginning July, 1918, on the basis of normal consumption, will be about 600,000,000 bushels. This will include the reservation of certain stocks for seeding purposes. The Allies' import needs from the United States for that period will be about 300,000,000 bushels. Our total necessary production will then be 900,000,000 bushels. The winter wheat crop based upon the condition as reported December 1, which may change greatly before harvest, is estimated at 540,000,000 bushels. This will necessitate a spring wheat production of at least 360,000,000 bushels, or an increase of about 66 percent over the 1917 spring wheat crop, which was 232,758,000 bushels.

Farmers Urged to Market Wheat

The success of the whole conservation plan undoubtedly rests upon the free flow of wheat from farms to market. If the flow should be continuous and of sufficient volume, then the government's program will be achieved; for the distributive interests can be controlled and the supply of wheat allowed to go into circulation will be regulated according to the schedule. But if farmers do not move the wheat now on farms with sufficient rapidity the plan will either break down or force the government to requisition wheat to meet the general need.

In some districts pro-German influences have been at work. Recently the Food Administration found it necessary to authorize requisition of a large quantity of wheat from two German farmers in New Mexico. Seizure was unnecessary, as the wheat was given up and placed on circulation by the Food Administration. This slack movement and discovery of enemy influences has led to an announcement by the Food Administration that it will take steps to requisition wheat wherever there is evidence to show that hoarding has been wilful.

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The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than May 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.
For particulars as to routes and places where employment may be had, apply to

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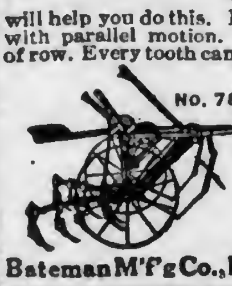

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Live Stock

THE YOUNG PIGS

Feed, sunshine and exercise are the three essentials given by L. A. Weaver of the Missouri College of Agriculture for success with young pigs. The fastest and cheapest gains are made on a pig before weaning time, so that ordinarily it will pay to keep the small pig growing as rapidly as possible. The sow should, of course, get some good milk-producing feed and she should be fed to her full capacity as soon as the pigs are old enough to take all the milk she will give. It will not pay to limit the feed fed thru the sow. When the pigs are about a month old, they will be able to use more feed than that obtained from the sow even tho the sow is properly fed and a good milker.

As soon as the pigs will eat, which is usually at four or five weeks of age, they should be fed separately from their dam. A creep should be made so that they may have access to a small pen where the sow cannot get their feed. Skimmilk fed in a shallow pan is very good for them. The pigs may also be taught to run into the creep for feed by allowing them some shelled or ear corn. As soon as they begin to eat well, a slop made of milk, some shorts, a little bran and some linseed oil meal or tankage fed along with the corn will make a ration which with proper exercise will not cause thumps or scours.

A good ration for young pigs is 4 parts corn, 4 parts shorts, one part bran and one part tankage. These proportions should be by weight. As the pigs become older the corn in the ration may be gradually increased until the amount has been doubled.

Perhaps the most common trouble caused by improper feeding and care of young pigs is scours and thumps. Scours are usually caused by changing the feed of the sow, by over-feeding, by dirty pens and troughs, or by exposure of either the sow or pigs to cold rain or to cold weather. Changing from sweet to sour milk, or feeding too much high protein feeds, such as tankage or linseed oil meal when the animals are not accustomed to it, may cause the trouble. If the sow is fed too much her milk flow will be greatly stimulated and the young pigs will receive more than they can utilize, thus causing scours.

The first treatment in the case of scours is to cut down the sow's feed and clean her quarters. A tablespoon of sulphur in her feed for two days will also be beneficial. Scalded milk or a good physic, such as Epsom salts, is helpful. A teaspoon of castor oil or Epsom salts should be given to the pigs. Charcoal is sometimes used. White scours, which is contagious, may be treated by cleaning and disinfecting the pens and by giving a good physic.

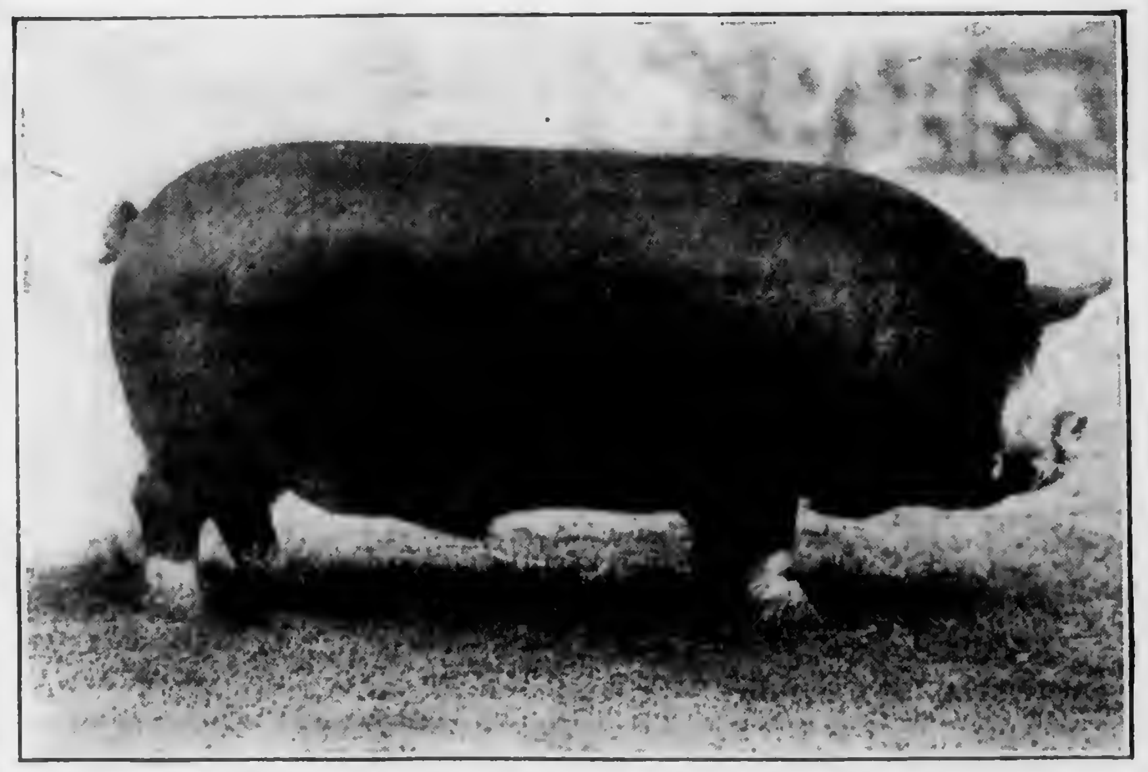
Lack of sunshine and exercise, together with excess feeding, cause thumps. A remedy is to cut down the mother's feed and force the pigs to take exercise in the sunshine. Thumps in large pigs which have been weaned is usually caused by some affection of the lungs or of the bronchial tubes.

WELL-FED FOALS DEVELOP QUICKEST

Present conditions demand that no time be lost between the birth of a foal and its maturity. Early maturity is necessary for quickest returns, whether the animal is sold or retained on the farm where it was raised. For the best development of horse stock, the foal should be well fed. It should be encouraged to eat early, and when it begins to nibble at the mare's feed, a low feed box should be erected out of the reach of the mother, where the young animal can be fed regularly. A mixture of ground oats and bran, or a mixture of ground oats, ground corn and bran or oil meal, is a good feed during the summer and early fall.

The young colt must be encouraged to eat, exercise, rest and grow. If the mare and foal are turned to pasture, exercise and rest are provided naturally. Altho grass is provided, the foal should receive grain (a mixture of crushed oats and bran or crushed oats, corn and bran) once or twice daily, either in a creep in the pasture, or to be fed in the barn, unless the mare is a heavy suckler. If the mare must work, keep the foal in a well-fenced lot or paddock, or in a good box stall that is ventilated and well lighted. The colt should not follow the mare at work. Careful management of the mare is essential while she is suckling her foal. She should not be given too rich feed, turned too suddenly to pasture or brought in too hot and tired to her hungry colt. An evenly regulated supply of milk, uniform in quantity and quality, is needed. To secure such a flow of milk the mare's feed should be regulated. Avoid sudden changes of any kind and shield her from too exhausting work. Probably the best feeds for the mare are corn, oats, bran, mixed clover and timothy or alfalfa hay. The mare and her foal should have access to water and salt whenever possible.

By weaning time the colt should be eating grain and grass or hay. Under careful management there will be little trouble in weaning the foal. The mare and colt should be separated, and the mare milked by hand to prevent caking of the udder. In the meantime the colt should receive plenty of feed and water, and should be kept in a well-fenced lot, paddock, pasture, or a good box stall where there is plenty of fresh air and where exercise comes naturally. —E. H. Hughes, in Mo. Circular.



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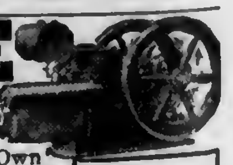

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CARE OF THE BROOD SOW

Before and After Farrowing

In the present emergency, calling for increased pork production, it may be assumed that every available sow has been bred for spring farrowing. The winter care and treatment of brood sows, says the New York State College of Agriculture, determines largely the number and quality of pigs to be raised. Overfatness does not lead to numbers, or to strength, or to vigor of the pigs. A gilt should be growthy, in medium condition, and should be kept gaining. A mature sow coming to winter quarters in medium condition should tend to gain during pregnancy. This may call for a small grain ration, including one-third to one-fifth of a pound of meat meal tankage or its equivalent, in addition to the roughage or succulence that the sow may regularly receive.

Suitable Feeds

Regular habits and laxative, nutritious feeds are essential in the maintenance of tractable, contented sows and the production of numerous, vigorous pigs. Water and feed the sows at regular intervals. One of the advantages of swine husbandry is the low cost of wintering sows. Yet this should not blind one to the essentials of sufficient food, both as to amount and variety. The aim is to produce good, husky pigs that will lose no time in reaching the market. Properly feeding them, thru the sow, both before and after birth, is a large factor in shortening the time required to bring them to market size and in reducing the cost of their gains in weight.

The young sow that has to complete her growth as well as develop her litter requires a somewhat narrower ration than older ones. Mineral foods and tankage or buttermilk and skimmilk should be used with these young sows. Corn has long been the basis of swine rations when used in conjunction with other materials, yet its price for feeding is now nearly prohibitive. A formula for grain feeds for brood sows need hardly be ironclad. Suitable farm grains, if available, should be used. Crushed barley, oats or peas may be used with hominy, middlings, oil meal, or tankage. Where feeds have to be purchased, a mixture of hominy and middlings in about equal quantities together with 5 to 10 percent of tankage or its equivalent in skimmilk will probably make an ideal grain mixture to feed as slop.

Alfalfa or clover hay fed in such manner that the leaves will be consumed, together with roots or other succulence, should be provided. In the absence of roots, corn silage may be used in very limited amounts. It carries too much fiber, however, to be of much use to swine.

Care at Farrowing

A week or two before the pigs arrive the sow should be given quarters by herself. A moderate allowance of a laxative ration is now essential. The use of 40 percent hominy, 35 percent middlings, 15 percent bran, and 10 percent oil meal by weight, is recommended for this period. Allow only a small amount of bedding. It is less dangerous to the pigs. Keep an eye on the sow but do not disturb her unless assistance is needed.

Newborn pigs should not be allowed to become chilled. If the sow is gentle the pigs may be removed as fast as born and if the weather is cold place them in a box or barrel with artificial heat. When they become lively, they may be returned to the sow. The sow's milk flow should not be stimulated the first few days. Feed lightly, giving warm water the first day if the weather is cold, followed later by a thin slop. In two weeks' time, get the sow on a good laxative, milk-producing ration. Allow the pigs exercise and keep them growing by feeding the sow generously.

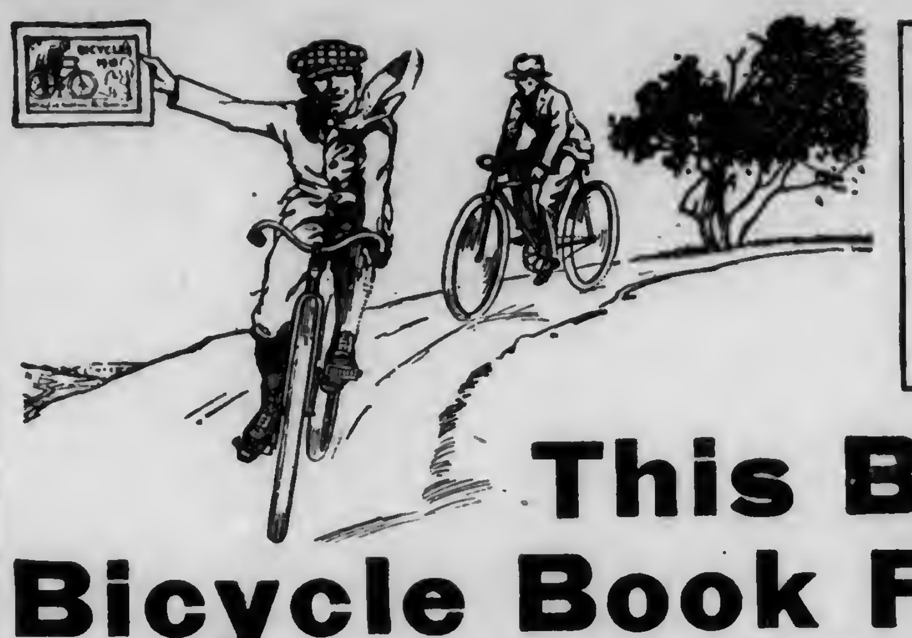
TREATMENT FOR WORMS IN HOGS

The popular opinion that soda lye possesses preventive and remedial properties against worms and other intestinal parasites has, by a recent experiment carried out by the U. S. Department of Agriculture been proven false. Hogs were fed soda lye for a period of two and one-half months and according to the report the extent of infestations increased during the course of the experiment. The Department further points out that since soda lye has no effect on parasites in the comparatively simple digestive tract of hogs, in the complex alimentary canal of cattle and sheep its opportunity to influence parasites is further lessened.

A safe and effective hog tonic and worm remedy offered by the Missouri College of Agriculture is sal soda, 3 pounds; Glauber's salts, 3 pounds; copperas, 3 pounds; sulphur, 1 pound; charcoal, 4 pounds; and common salt, 3 pounds. Mix thoroly and keep in a trough in a conveniently dry place. When the herd is seriously infested with worms it is well to use santonin 6 grains and calomel 4 grains, per hundred pounds weight of hog. Feed in a thin slop after hogs have had no food for a day or two.

In the event that santonin can not be obtained, satisfactory results may be expected from finely powdered copper sulphate, at the rate of a level teaspoonful to the hundred pounds weight of hogs, given in the manner recommended for the use of the santonin and calomel. It is advisable to confine the hogs for a period of two days following the administration of the drug, in rather limited quarters apart from the regular hog lots. After the hogs are released from the pen the live worms and eggs expelled by the treatment may be destroyed by a strong stock dip solution or a coating of freshly slacked lime to prevent reinfestation.

It is a good practice to plow the hog lots and sow to rape or other forage crops, at least once during the season. An abundance of wholesome forage is thus procured and the fresh soil surface furnishes conditions almost equal in cleanliness to that of a new hog lot.



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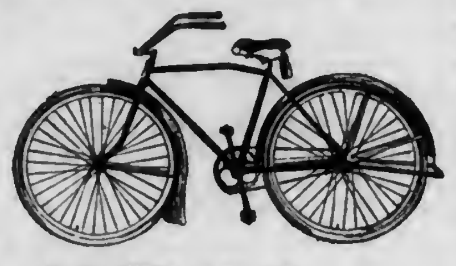

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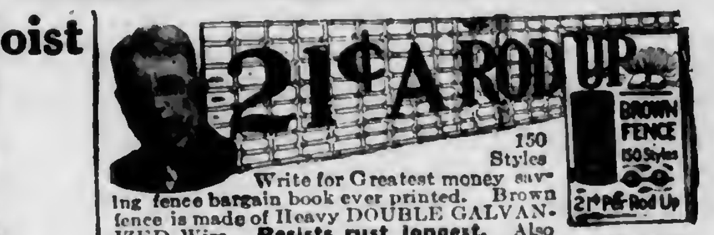

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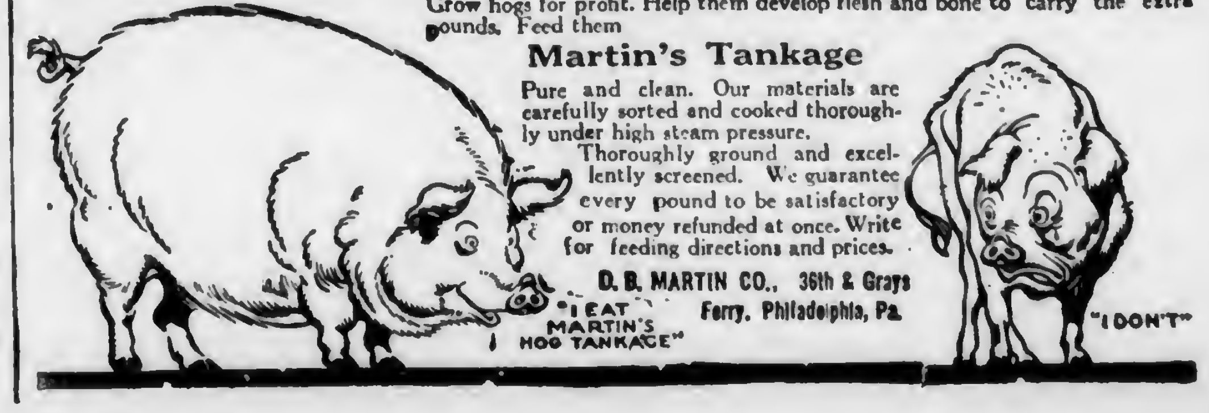
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Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Potato Market Weak

Old potatoes still present a generally weak feeling both at primary markets and consuming centers, more particularly the latter. Northern growers showed a tendency to cling to last week's prices in spite of a discouraging demand. No. 1 bulk, white stock, trackside, held steadily at $1.10@1.25 per 100 lbs. at Rochester, N. Y., with light shipments. Grand Rapids, Mich., dropped early in the week but recovered quickly to 60 to 70 cents. Jobbing markets now range $1.20@1.50 in the east with the exception of New York, which has shown an upward tendency with a range of $1.60@2.25 on white stock from all points.

Texas Onions Starting

The movement of the Texas Bermuda crop is just starting with 62 cars reported moved to date. Supplies have not appeared on the market yet and some fear is felt as to the result of their competition with the plentiful supply of old stock, which is moving slowly. The Bureau of Crop Estimates reports that owing to ravages of thrips and the light attack of Pink Root the maximum production of merchantable onions of standard grades will be about 5,781 cars. Old yellow onions still range weakly at 50 cents to $1 in Northern markets. Old stock moved at the rate of 79 cars, as compared with last week's total of 120 cars.

Cabbage Markets Irregular

Old cabbage remained in a fairly steady position. Prices to growers in western New York narrowed to $10@12 from the former wide range of $10@16 per ton, while sales by shippers ended a trifle weaker at $20@22 per ton f.o.b. Rochester, N. Y. Wisconsin and New York stock held last week's range of $25@50. Chicago market weakened abruptly to $35, while New York advanced sharply to $35@40 on best stock. New stock in producing sections ranged fairly steady.

Tomato Values Weakened

Prices have settled in Florida shipping sections to $2.50 per fancy crate. Consuming centers show a weakening of $3@4.25 for fancy stock, Philadelphia, however, holding steady at $3.50@3.75.

Strawberry Market Firm

Hammond prices fell off during the middle of the week but strengthened quickly to $3.10. Northern markets show also a stronger tendency for good stock, 24-pint cases bringing $3.50@3.75. Carlot shipments were reported of 189 cars, compared with last week's total of 176 cars.

Other Fruits and Vegetables

Practically all southern vegetables showed a weak tendency. Louisiana barreled spinach ranged $3.50@4 in Chicago while Texas bushels sold at 40@90 cents in northern markets. Shipments were 294 cars against last week's 262 cars. Louisiana shallots brought $4.50@9 per barrel and 10@40 cents per dozen. Parsley sold mainly at $2.50@4, while carrots and beets brought $4@5 per barrel. Radishes ranged around $5 per barrel in Chicago. Florida eggplant and peppers were weak at $2.75@4 per crate, respectively. Green stringbeans also weakened, ranging $2@3.50 per hamper. South Carolina asparagus tended lower, with colossal stock bringing $4@6 per crate.

THE POTATO OUTLOOK FOR 1918

When a rule has held without a break for over 30 years it ought to be safe enough to follow; and there is just such a rule which tells the small producer of potatoes when to plant and when not to plant to get profitable prices for his crop. The rule is this: "High seed in the spring, low prices in the fall; low seed in the spring, high prices in the fall." And there are very good reasons for it.

With seed potatoes at $3.50 to $4 a bushel in 1917 it looked like an almighty good chance to make some money. The trouble is that too many people had an eye on that chance, too many people took it. With potatoes at from 75 cents to $1 a bushel this spring it looks as if there was nothing much in it—and it looks that way to too many people.

Of course, the professional potato grower handles about the same acreage year after year and depends on the average price to make his profit. But the rise and fall in prices has nothing to do with him; it is brought about by the smaller producers who always increase their acreage when their eyes are glued on high seed prices, and cut down their acreage when seed is low and every condition really promising.

There was another element which entered into the 1917 situation. Consumers had been compelled to pay from $4 to $6 a bushel for potatoes at retail; and they were not pleased with that state of affairs. So the war gardens and the home gardens were planted largely to potatoes as a matter of home economy; and this extra crop helped to knock the bottom out of prices.

As a gambler the farmer is an average poor guesser. It is because of his bad guessing that the thirty-year rule has become a rule; it is because he goes with the crowd instead of doing his own thinking that the small producer finds potatoes unsatisfactory as a money crop.

What are the real facts for 1918? What is the outlook for prices next fall and next spring? Should the small producer plant potatoes this year or should he plant something else? The fact is being reported from all over that there is going to be a short planting of potatoes this year. With the same traditional habit of thinking in groups, and not looking far enough ahead, thousands of farmers this year are not going to plant potatoes and thousands are going to largely increase their corn acres. Whole districts report a probable 60 percent potato acreage as compared with 1917 and an immense increase in corn. Emphatically this is the year for the wise farmer to get into the potato business and not to abandon it for corn. And the reasons, the major reasons, are easily understood. Here are a few of them:

The present high price of corn is going to result in an abnormal corn acreage and in the biggest crop in our history. Now, as we all know, only a small percentage of the corn crop is used as human food; and the 1918 extra crop bids fair to be out of all proportion to the extra amount of corn we can use to replace wheat and other grains in the family dietary. That means a drop in the price of corn, which is not an international or a shipping crop to any great extent.

Potatoes, on the other hand, are exceptionally low. Whereas the seed alone cost the grower from $52.50 to $60 an acre for his 1917 plantings, this year as good seed will cost only from $12.50 to $15 an acre, reducing the cost of his potatoes from $40 to $45 per acre, which, at the average rate of Pennsylvania production—100 bushels per acre—will make his potatoes actually cost him from 40 to 45 cents a bushel less than last year.

The United States is being forced to a potato diet; and with this fact outstanding thousands of farmers are neglecting the best opportunity they have had for years because prices now are low and because they don't look far enough ahead or have not studied the 30-year history of the potato market.—A. B. Ross. Agriculturist.

MARKET THE POTATOES

The Food Administration has sent out the following letter on the subject of potatoes:

"With the approach of warmer weather and on account of the increasing supply of new southern potatoes, there can be no question as to the urgent desirability of marketing promptly the remainder of the old crop of potatoes. On account of the scarcity of cars in many shipping districts, the supply on the market at the present time is not excessive and the prices are probably better than will prevail later, taking shrinkage into consideration. In fact, there is a chance of potatoes selling at considerably lower prices.

"We are making a state-wide campaign and, beginning April eighth, there will be a nation-wide campaign to increase the consumption of potatoes. Farmers should recognize in the present market conditions their opportunity to unload surplus stocks.

"Our policy has always been to recommend the sale of potatoes f. o.b. shipping point, but under existing conditions, with buyers in the country comparatively scarce, we call attention to the fact that under the present license system of the U. S. Food Administration and the splendid services of the Bureau of Markets of the U. S. Department of Agriculture, shippers who wish to consign their potatoes to the regular dealers in the markets for sale after arrival are absolutely sure of a square deal. Any dealer guilty of unfair practices will have his license withdrawn.

"All shippers can, on application, receive daily from the United States Department of Markets, Philadelphia and Pittsburgh, 'the prices prevailing all over the country for potatoes.'

"Many of the principal potato handlers in the big markets have agreed to handle carload lots of potatoes at a special commission rate of five (5) cents per bushel. Many potato brokers in the principal markets are willing to sell potatoes at fifteen (15) dollars per car, brokerage, some for less. . . . ."

HOG RECEIPTS AT STOCKYARDS INCREASE

Increased receipts of hogs at stockyards during February, 1918, over receipts for February, 1917, are shown by the monthly report on live stock just issued by the Bureau of Markets, U. S. Department of Agriculture. The figures cover 58 cities and show hog receipts for February, 1918, of 4,295,930 compared with 3,873,730 received in February, 1917. This increase, amounting to 422,200 head, is the first increase recorded since August, 1917, when the bureau began issuing monthly stockyards reports.

Cattle receipts at the same 58 cities in February, 1918, were 1,440,067 compared with 1,284,584 in February, 1917. Sheep receipts showed a decrease, the figures being for February, 1918, 981,973 head against 1,342,175 in February, 1917.

Total Shipments

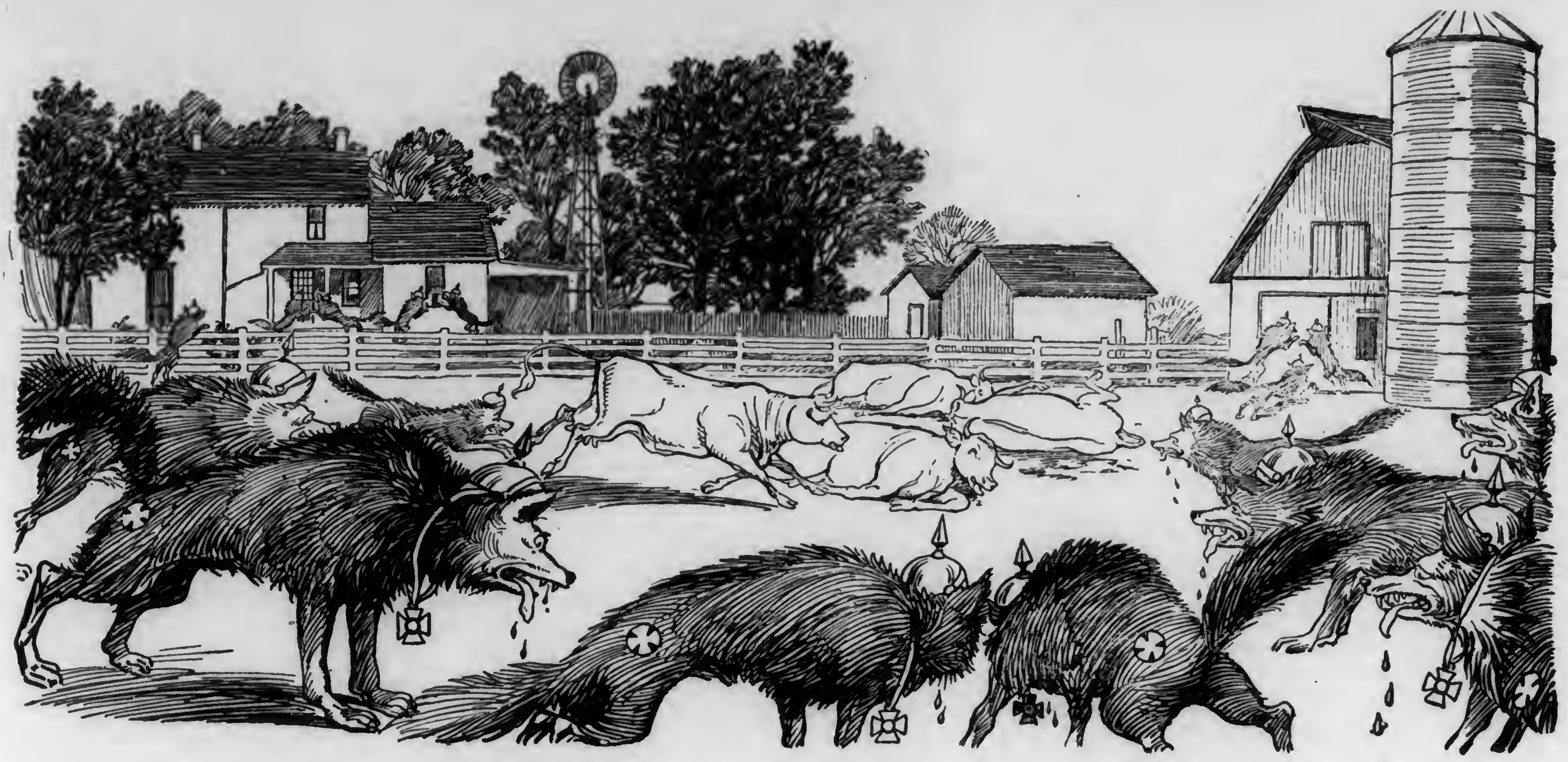
Shipments of live stock from 48 cities, including stockers and feeders, for February, 1918, were: Cattle, 456,000; hogs, 1,249,240; and sheep, 421,279. Comparative figures for February, 1917, were: Cattle, 418,736; hogs, 1,341,199; and sheep, 547,585. Animals slaughtered at 45 cities in February, 1918, and February, 1917, the figures for 1918 being given first, were: Cattle, 921,830—806,335; hogs, 2,935,988—2,464,588; and sheep, 559,827—778,143.

SELL CHICKENS GRADUALLY

Don't glut the market with chickens, live or dressed, soon after May first when the Federal "closed season" on hens ends. This advice to farmers is given by the United States Department of Agriculture.

"Too many fowls on the market may result in food losses" says the department. Poultry stock should be sold gradually. Farmers will have better markets if they avoid glutting them.

Exports of wheat from the United States to the Allies between July 1, 1914, and January 1, 1918, totaled more than 389,000,000 bushels. Wheat flour exports exceeded 24,600,000 barrels. The total in terms of wheat shows that the United States has sent the Allies nearly five bushels of wheat for every person in this country. Until the next harvest the great need is for wheat from the United States.



The Wolves of the World

THIS is a world war! No human being in this world can escape its responsibilities. You, with all others, may share in its glory. The fighter, the financier and the farmer must put this War over. Put in two words, it is *duty* and *"dough."*

If Germany wins this War, there will be a permanent mortgage upon all the muscle, all the money and all the manhood in America. In that event the value of the money, which you may think you can save by not buying Liberty Bonds, will be cut in two.

Thousands who read this have sent their boys across the sea. We cannot say that our dollars are more precious than our boys. We must show the world that the farm dollar is a fighter. We cannot offer our flesh and blood to *The Wolves of the World*, and yet keep our money hidden in the ground.

Of all farmers on earth, the French farmer is most respected, and has the best chance in the market. That is because the French farmers saved France. At the end of the Prussian War, Bismarck demanded a ransom which he thought France never could pay. The bankers and large moneyed men would not have taken that debt, but Bismarck did not know the soul of the French farmers. They brought out their last dollar and laid it upon the altar of their country. *France has never forgotten, and her farmers dominate the Nation.*

Whoever finances America in this War will rule America for the next quarter century. Every farm dollar invested in Liberty Bonds is a nail in the coffin of German autocracy, and brings the world a step nearer pure democracy, by making our farmers, as they should be, the financial creditors of this country.

As an investment, the Liberty Bond is the surest thing on earth. Every dollar of the Nation's more than 125 billions of wealth is pledged to redeem your bond. After the Civil War there were times when the railroad bond, the bank stock, and other securities were in danger, but the Government bond always stood, as it always will, *like the shadow of a rock in a weary land.*

Make the future of your wife and children as "safe as a Government Bond." Protect their future with your money. That is what you do when you

Buy U. S. Government Bonds—Third Liberty Loan

—the safest investment in the world

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Pennsylvania Farmer

Redeeming a Kitchen

With a Little Money and a Little Gumption

By MRS. ELSIE RINEHART

Often I had heard the woman who worked in the kitchen diagrammed in Fig. 1, sigh and tell how tired she got doing her kitchen work. After I had taken a few meals with her, and helped her do her kitchen work, I appreciated the depth of her moan. It seemed to take us an interminable time to do most of the tasks. Convenient kitchens being my hobby, we set about some simple, inexpensive replanning, and today this woman is loud in her praise of the new arrangement.

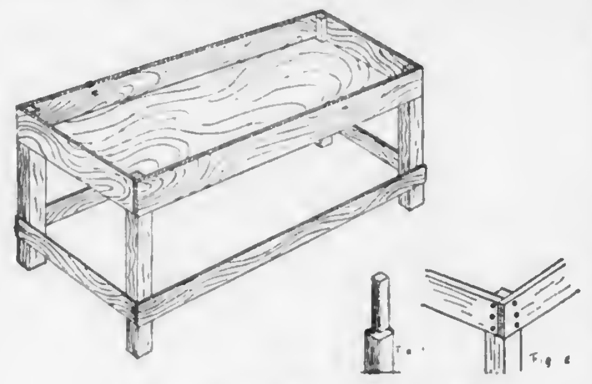

Fig. 4.—The Silent Butler

In the first place, the work table was at one end of nowhere, while the sink, the pantry, and the cupboard were at the other. It was a case of walk, walk, pause a moment at the far end of the room, turn, and tramp, tramp, back again. Over and over were these same steps taken countless times in the preparation of one meal. At the work table end of the room there was not so much as a drawer to hold stirring spoon or paring knife. Anything and everything you might want was at the far side of the room. So we picked up that far-distant table and moved it over near the center of activities, and placed it beside the sink.

Then we made a wall pantry. We tacked a large sheet of oilcloth above the work table. Because the plaster would not hold nails at all points, strips of paneling bridged the spaces from studding to studding for us, and made a neat finish for the edges of the oilcloth. Where this idea is copied, and there is no paneling available, smooth some laths with the plane, and stain them to match the woodwork, and you will get just as good an effect. Then, horizontally, as shown in the kitchen cabinet diagram, we nailed several more strips of this same paneling, into which we drove thin, headless wire nails, and these afforded a place to hang the cooking utensils used daily. We hung the saucepans all in a row, graduating them from smallest to largest; the baking pans had a place all their own; all such little articles as the egg beater, stirring spoon, pancake turner, etc., had another row to themselves.

We secured a pair of shelf brackets for 15 cents, and put up one narrow shelf for such things as spices and little cooking accessories. Then after covering the table with oilcloth it harmonized with the wall. The whole effect was good, and we had made the common old table into a kitchen cabinet with its conveniences at trifling cost.

Then we purchased a high office stool for 85 cents. This I set before the work table, and bade my friend use it. I remember, in this connection, trying to break a dear old lady of doing her work in the hardest way possible. During the whole process of dressing a couple of chickens she would stand up. When I would rearrange her crocks and install her comfortably on a chair, she would acknowledge that it was more restful to do it that way, but protested that she had grown so accustomed to standing while doing all her work, she did not feel right sitting down to dress a chicken. But the high stool has come into the modern kitchen to stay.

Then here's to you, Oh, high stool!
We use you every day,
Whene'er we pare potatoes,
Or trim the radish gay;
Whene'er we wash the lettuce,
E'en when we clean the knives,
Here's blessing on you, high stool,
From all us farmers' wives!

Nay, folks may deem us lazy,
And swear we seem to shirk
When we sit on you, high stool,
To do our kitchen work.
But we can smile good natured,
For now we're feeling prime,
Our tasks speed 'neath deft fingers,
While we're resting all the time.

Oh, and this lady's pantry! There were four shelves, each about 30 inches wide. Surely, there seemed ample room for storing everything. But, irony! Aside from the first shelf, normal arms could not reach back across them. Consequently they were in perpetual disorder, and a despair to anyone who tried to keep things in place. In the remodeling they were cut in two, as in Fig. 2, and, with really less surface, they now afford twice as much available space as before; everything on them is readily accessible, and they are easily kept in order. We also set a little work table, covered with oilcloth, in the pantry for general convenience.

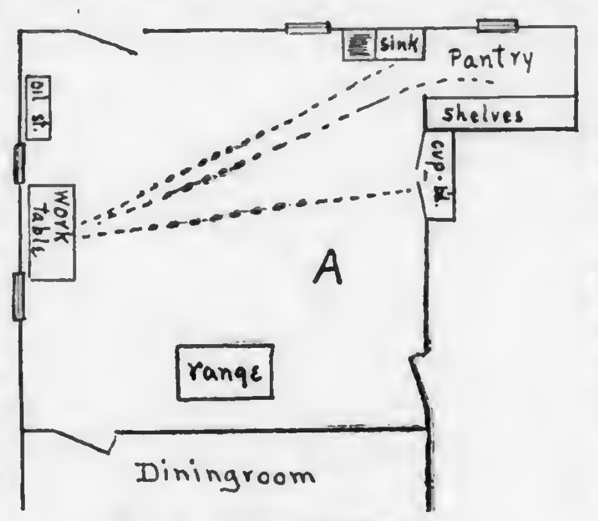

Fig. 1.—The Old Plan

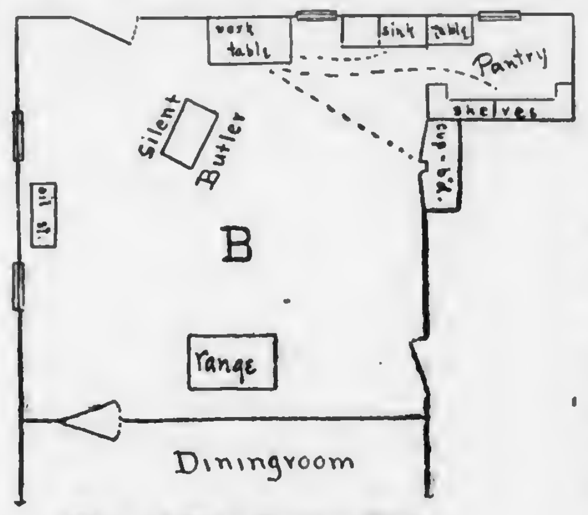

Fig.—2 The Better Way

Last, but invaluable, came the "silent wooden butler". In Fig. 2 I have it standing out in the middle of the kitchen floor. But it is often pushed about, here and there, wherever it chances to be wanted. As a labor-saving device in the home, it certainly takes a ribbon. As the meal is prepared, instead of carrying the separate dishes into the dining room, they are all placed on this butler, and then, with one trip, the whole meal is rolled into the dining room. The table is then set, and the patient butler remains standing beside mother's chair, receiving any dishes that are to be removed during the meal. And when the meal is over, the dishes are scraped and piled up ready for washing, and again with one trip the whole dining table is cleared. Now the butler stands beside the sink while the dishes are being washed. As they are wiped, they are again stacked on the butler, and by this means delivered, with few steps, just where they belong. Resetting the table immediately upon washing dishes is, by the way, much appreciated when the time for the next meal arrives. Plates and silver can be set around, and the whole table covered with a light cloth.

The construction of the "silent butler" is simple. The aspiring young carpenter son who wishes to delight his mother has here a worthy object for his tools and skill. For the legs, use pine 28 inches long and 2 inches square. Cut one end away, as shown at the right side of Fig. 4, leaving a 4-inch extension 1½x1½ inches. Use for the sides two pieces of clear pine ½-inch thick, 4 inches wide, and a little shorter than your dining room doorway is wide; and two pieces of the same width and thickness but about 45 inches long. Join them to the legs with screws. To the under edge of the sides fasten the bottom boards, ½ inch thick. Screw another set of boards to the lower part of the legs to act as braces. Then, in order to have it truly a "silent" butler, and one that can be readily guided, fasten on some easy running, rubber-tired casters like those used by undertakers. Get large ones, about 3½ inches in diameter, for they will make your wagon easier to push. Then paint or stain the wagon to harmonize with the rest of the furniture in the dining room.

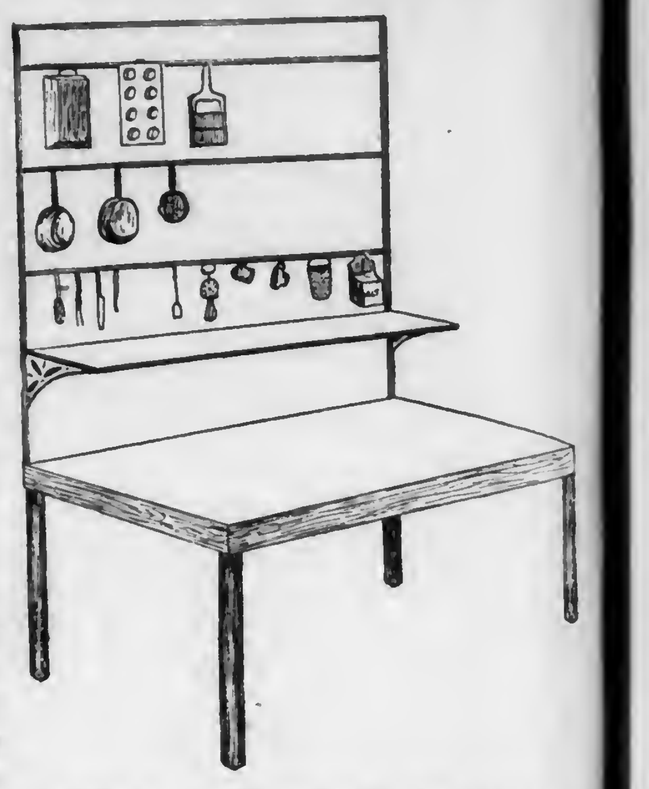

Fig. 3.—The Handy Work Table

There was one thing about redeeming this kitchen that pleased me very much, and that was the attitude of the husband toward these changes and innovations. He seemed so thoroly gratified. For years his wife had been sighing over her heavy lot, and had been physically wearing out 'neath her burden. Not having had the experience of getting and clearing away the meals, he did not note the poor arrangement. The wife had just gone on feeling sorry for herself in a general way, but had not seemed to know how to remedy matters. Now, when something concrete came to hubby to do, like sawing out the pantry shelves, and having the silent butler made, he was ready and glad to co-operate. And I do believe that the majority of men are of this type. They are usually glad to readjust the burden on their wives' shoulders for them if the wives can but tell them definitely just where it is uncomfortable, and how they would like to have it shifted.

This Kitchen Looks Out on the Public Road

DRIED FRUIT RECIPES

In preparing dried fruits and vegetables for the table, they must first be soaked for several hours, usually over night, to replace the water lost by evaporation, and then cooked slowly until tender. They should be cooked in the same water in which they were soaked.

One of the important values of fruits and vegetables is the mineral salts which they contain. These mineral substances are used in the body to assist in regulating the body processes, such as the processes of digestion and absorption of foods, and in helping to keep the blood and other secretions normal.

Some of the salts naturally come out into the water in which the dried product is soaked. If this water is discarded valuable material is lost.

Extention Circular 61 of the Pennsylvania State College gives the following general recipe for the preparation of dried fruits:

Wash and pick over fruit. Put in saucepan, cover with cold water, and soak over night. Cook slowly until tender in the same water in which the fruit has been soaked. When nearly cooked, add sugar to sweeten—from one-eighth to one-quarter pound (that is one-fourth to one-half cup) of sugar to one pound of fruit, according to the kind of fruit.

Raisins or dates cooked with cereals are likely to make them more attractive to children, and will help to save sugar.

Grange

DOMESTIC SCIENCE DEMONSTRATION

A very succesful food and clothing demonstration was held in the Richland Grange Hall, on Thursday and Friday, April 4 and 5. Miss Grace Bacon, of State College, was the speaker and handled her subjects in a very able manner. She explained the food values of the various foods and told how they should be combined and used to keep our bodies in good health. She also spoke about the substitutes we are to use at this time, telling how much and in what way they could be used so as to save the wheat and meat and still be nourished. The oat meal bread, bean-loaf and various other dishes which she mixed and baked, and the audience tested, were very nice. The recipes she presented are all recipes that have been well tested.

Her talk on the testing of material and the demonstration showing how to measure and arrange the patterns to one's various needs, was very interesting and instructive. The only regret is that there were not more present to receive the benefit. These meetings are all free and very carefully arranged by the county agent, the state bearing the expense. While there was a good and appreciative audience, the room should have been filled with eager listeners and if each one only learned one new and good point they would be well paid for attending. At this time we need to learn how to make the best of everything.—M. J.

A TIMELY CAUTION

State Master McSparran gives a very pertinent word of warning in the following editorial in Grange News:

"Any student of political affairs thoroly understands that the predatory interests in this country are now laying their plans to have control of this government when the war is over. They will not use any particular party, but will elect a Governor one place, a Senator another, a Legislator another, and so on. The coming primary therefore becomes awfully important. Every candidate should be catechised, and where he has a record, it should be honestly publicized. In Pennsylvania, the foremost issue will likely be the liquor question. But that one plank is not enough. Candidates from the Governorship down should ring clear on several important measures that would pretty accurately indicate their position and viewpoint on all legislation. For instance, an eleventh-hour convert to prohibition is a poor person to trust to ratify the amendment to the constitution and support war-time prohibition.

"A person who will not unequivocally stand for the removal of the exemption that manufacturing has enjoyed in this state very unjustly, is not safe to be trusted to equalize taxation. A person who demands that we have good roads and let our children pay for them, is either ignorant of the fact that we can build our roads and pay for them as we go without undue burden of taxation, or he is a legislative coward and afraid to stand up against the interests that have been and are escaping taxation.

"If we neglect the Primary, selfish interests will put up the candidates and then we are left, no matter how the election goes."

WORLD'S PRODUCTION OF BEER

The liquor advocates have continuously held up Germany as a great beer-drinking country and a land of efficient fighters.

It has been difficult to secure accurate figures from Germany concerning the amount of liquor they are making. At last the cat is out of the bag. The Brewers' Journal of New York has issued a supplement showing the amount of beer brewed in the year 1916-17 by the different nations. Here are the facts. They are taken from Tovey's Official Brewers' and Malsters' Directory of North and South America for 1918. It is used as a supplement to Brewers' Journal:

Production for the Year 1916-17

	American bbls.
United States	60,817,379
Great Britain	36,942,620
France	11,000,000
Germany	7,700,000
Belgium	4,000,000
Austria-Hungary	2,360,000
Sweden	2,000,000
Australia	1,600,000
Switzerland	1,500,000
Netherlands	1,400,000
Denmark	1,200,000
Argentine Republic	1,150,000
Canada	1,127,400
Russia	1,000,000

The above table will show that Germany last year made only one gallon of beer for every eight made in the United States. When Germany prohibits beer to save food, fuel and man-power, the United States ought to be ashamed if we cannot do as well.—W. B. Wheeler, for Board of Temperance. M. E. Church.

WOMAN'S RIGHT ATTAINED

A precedent has been set in the matter of allowing women to handle rural routes, and a farmer's daughter claimed a double victory.

A route was being carried in Illinois by a young man who before the draft enlisted in the army. Thereupon a sister assumed the duties of the mail delivery to a big district of prosperous farmers.

The civil-service commission, however, refused to permit the girl to have the route permanently, and it was given to a man. The woman or rather her friends carried the matter clear up to President Wilson who ordered the place restored to the soldier's sister.

That did not seem to end the controversy. The civil service people chafed under what they considered a humiliating reversal, and it remained for a Pennsylvania young man to step in and settle the matter for all time, which he did by marrying her.

The young lady in the case is Miss Edith Strand and her future protector is John Groy, formerly of Lebanon County, Pa. The two were married in Chicago and are now keeping house in Bureau County, Ill., where Mr. Groy is engaged in business.—J. L. Graff.

Nothing would please the kaiser more than to have many American acres planted with seed which will not grow. Fool him by, testing all seed, especially corn.

Loose-cut Blue Buckle coat with comfortable raglan sleeves.

A solid denim fly is cut into Blue Buckles—not sewed on!

Get into Blue Buckles!

For work comfort and for clothes economy, Blue Buckle Union Made OverAlls meet the severest service demand! That's because Blue Buckles are manufactured in an exceptional way—with the hardiest wear-weight blue denims and seams that are *guaranteed to last the life of the garment!* They must give you unusual service!

Blue Buckle Union Made OverAlls

"strong for work"

have many fine features to commend them besides the *solid reinforced backband* that does away with the old style V-shaped vent and buckle. The fly, for instance, is *cut into* the overall, not separate and sewed on! Blue Buckle Coats have the comfortable raglan sleeves.

Real brass buttons and buckles and wear proof clasps and loops make Blue Buckles additionally desirable to men who wear them hardest. *They're built to do you a regular job!*

TRADE MARK UNION MADE

Jobbers OverAll Company, Lynchburg, Va.

Largest Manufacturers of Union Made Overalls in the World.

Big Special Subscription Offer

Look at the yellow label on your paper which gives the month and year in which your subscription expires, and if your subscription has expired or is about to expire, it will pay you to take advantage of our special offer.

Here Is The Offer

Send us only 25 cents and we will send you Pennsylvania Farmer every week from May 1, 1918 to Jan. 1, 1919; or better still send us $1.00 and we will renew your subscription to Jan. 1, 1920.

Send Thrift Stamps For Your Remittance

We will accept Thrift Stamps in payment for subscriptions. This will be a convenient way to send your remittance as Thrift Stamps may be purchased from your mail carrier, or at any postoffice.

Three for the Price of Two

See your neighbors and send their orders along with your own. In this way you can earn your own subscription. Send us two subscriptions to Jan 1, 1920 at $1.00 each and we will renew your subscription for the same period of time as a reward. You will find elsewhere in this paper a subscription blank for your convenience in forwarding orders.

Pennsylvania Farmer, 261 S. 3rd St. Phila., Pa.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 15, 1918.

With supplies of old potatoes fully ample for all requirements, there being at this writing 86 cars on track in the delivery yards, and with a slow demand and movement, the market on old potatoes is again weaker following the decline as reported in these columns last week. Pennsylvania potatoes are now selling generally at $1.40@1.65 per cwt., with an occasional car of extra fancy at $1.75 to 1.90. New York state potatoes are selling generally at $1.40 to $1.60, mostly at $1.50. There is some western stock here that has been selling at $1.30 to $1.40, with some from Delaware drawing about $1.35. Jersey potatoes in ⅝-bushel baskets are selling at 40 to 60 cents, while Eastern Shore barreled stock draws $1.75 to $2.40 as to quality. New potatoes from Florida are gradually increasing in supply. No. 1 new potatoes are now selling around $8, with No. 2's at $7 and No. 3's $5 per barrel. Hampers bring $2.25 to $2.50.

Sweet potatoes are in lighter supply and the market shows some improvement. Best New Jerseys are selling at $1.25 to $1.50 per ⅝-bushel basket, with medinm grades at 75c to $1.10, and seconds from 50 to 60 cents. Eastern Shore sweets are selling generally from $1.50 to $2 per bushel hamper, with medium at $1 to $1.25.

Vegetables

Dried beans are moving slowly with prices somewhat easier. Marrows are now selling at $14.75 to $15 per cwt; pea and medium, $13.50 to $14; and red kidneys, $13.75 to 14. Supplies of asparagus are much lighter this week and the market is firm and higher. South Carolina stock selling at $2.75 to $6 per dozen bunches; Georgia, $3 to $6.50; California, $3 to $8, as to size and quality, the market in general being fully 50 cents higher than last week. Southern beans are now quite plentiful and prices show a decline of about 25 cents per hamper from last week. Green are selling generally from $1.50 to $2.50; wax, $2 to $3, with movement good at these lower prices. New beets are a little more plentiful and a trifle easier, selling mostly at 6 cents per bunch. The season on old cabbage is winding up with stock left on hand mostly poor and must be trimmed more or less before sales can be negotiated at $18 to $20 per ton. This is about $10 less than quoted in these columns last week. New cabbage is now coming quite freely from the South, there being 16 cars sold here on Monday of this week, at prices ranging from $1 to $1.50 per hamper and $2.50 to $3 per crate. Old carrots, when showing good quality, are selling readily at $2.50 per barrel, but most of the stock is poor and selling much lower and at irregular prices. Celery is in light supply and higher on fancy stock which is selling at $3 per crate. There is still some poor arriving, however, which is selling from $1.25 to $2 per crate.

Cucumbers were in fairly liberal supply this week and prices are from 50 to 75 cents per bushel lower than last week, best now selling at $2.25 to $2.75 per hamper, and choice at $1.50 to $2. Endive and escarol are in fair demand at from $3 to $4.50 per barrel. Horse radish continues in liberal supply and prices are unchanged at $3 to $6 as to quality. Kale has taken a sharp advance under the light supplies and is now selling at $2 to $2.25 per barrel. Lettuce continues in light supply and firm on fancy stock. Florida hampers are now selling from $1.50 to $3.50; South Carolina, $2.75 to $4.25; California Iceberg, $1.50 to $3.50 per box. With supplies of old onions gradually cleaning up, the market is beginning to show a little improvement. Fancy stock brings $1.50 per cwt., with poor and sprouted irregular and low in price. Onion sets are mostly poor and small and again lower; ranging from $2 to $4 as to quality. Parsnips are in light supply, but unless are in light supply and firm at $2.50 to $3.25 per barrel, are not wanted. Parsley is not quite so plentiful. The market is a little firmer, altho prices are showing practically no change at $2 to $2.50 per barrel. Peas are in light supply and firm at $2.50 to $3.25 per hamper. Peppers are increasing in supply and the market is easier, best now selling at $3 to $3.25 per crate and choice at $1.75 to $2.50. Radishes are selling mostly at $1.75 to $2 per hamper, for both red and white. Nearby rhubarb from Pennsylvania and New Jersey points is more plentiful and lower, selling generally from $3 to $4.50 per hundred bunches. Romaine continues steady at $1.75 to $2.25 per hamper. Scullions are in fair supply and selling all the way from $1 to $1.75 per 100 bunches, as to size and quality. Shallots are drawing from $3.50 to $4 per barrel. Spinach is in light supply and high prices are prevailing; the market ranging from $2.25 to $2.75 per barrel, but prices undoubtedly have to go lower. The tomato market is ranging all the way from $2 to $3.50 per crate, according to size and quality. Most sales range from $2.75 to $3.25. Watercress continues in fair supply and prices are steady at $1.50 to $2.50 per 100 bunches.

Fruits

Receipts of apples while not heavy are ample for the prices prevailing. Baldwins, Ben Davis, Ganos, and Winesaps are about the only varieties now arriving in barrels and these are selling about as follows: Baldwins, $3.50 to $6.25; Ben Davis, $3 to $4.50; Ganos, $4 to $4.75; Winesaps, $4 to $6. Box apples are bringing very high prices when showing fancy quality. Ben Davis sell from $2 to $2|50; Ganos, $2 to $2.50; Ark. Blacks, $2.50 to $3.50; Winesaps, $2.25 to $3.50. Strawberries while still in light supply are gradually showing up more plentiful and the high prices now prevailing can not be expected to be long maintained. North Carolina berries sold on Monday of this week at 35 to 38 cents per quart and Alabamas at 35 to 37 cents.

Poultry

The Food Administration has announced that the embargo against killing fowls and pullets would be lifted on April 20th. Farmers are warned, however, against rushing their birds to market and glutting the same. Prices are already showing a tendency to ease off on the stock that had been arriving this week. Soft meated roosters are now selling at 35 to 38 cents; staggy young roosters, 30 to 32 cents; old roosters, 25 to 28 cents; ducks, 32 to 40 cents; geese, 30 to 32 cents; guineas, $1.50 to $1.65 per pair, and pigeans, 35 to 45 cents per pair.

Eggs

The egg market is showing very little change from last week. Supplies have not been heavy and under a steady demand offerings have been cleaning up daily. Nearby current receipts are now selling at 36 cents; firsts, 37 cents; westerns, 36 to 37 cents; southern, 34 to 35 cents.

PITTSBURGH PRODUCE

Pittsburgh, Pa., April 15, 1918.

While the current demand for country produce has swelled, it continues irregular, due to railroad conditions and uncertainty of the new crops. Old white potatoes continue weak and gradually sagging to lower levels. New Florida spuds are on the market, but too high for liberal use. Lower prices are expected on tomatoes, beans, celery, cabbage and onions. In the fruit section strawberries, apples and oranges are in fair to good demand.

Potatoes, car lots, $1@1.10 cwt; sweets, $1.75@1.90 hamper. Onions yellow, 98c@$1.25 per 100-lb. bag; do., white, 75@90c. Cabbage, $18@20 ton. Parsnips, 50@60c bu. Carrots, 50@60c bu. Lettuce, $1@1.25 hamper. Celery, $1.50@1.75 crate. Tomatoes, $2.75@3.50 crate. Radishes, 15@18c bch. Beets, 40@45c doz. bunches; asparagus, $2@3.75 box; cucumbers, $1.40@1.75 doz; rhubarb, 35@50c bdl. Apples, $4@6 bbl; $1.50@3 box. Strawberries, 20@25c qt.

Poultry.—Poultry continues quiet and the market is not expected to make much of a showing until April 20 when dealers will be permitted to resume buying hens and pullets from farmers and shippers. At present sales are confined chiefly to frozen stocks, which a large percentage of consumers will not buy.

Hens, 34@40c lb; springers, 35@40c; broilers, 42c; roosters, 32c; ducks, 38@40c; turkeys, 38@43c.

Dairy Products.—Creamery butter was advanced 1½ cents a pound Saturday at Chicago and a like advance was made here, effective today. There is a decided shortage of first-class butter while undergrades are in oversupply. Receipts of eggs continue on a large scale and are larger than the current demand will take care of. The overplus must either be placed in cold storage or disposed of at concessions.

Elgin prints, 46½@47c; Elgin tubs, 46@46½c; Ohio and Pennsylvania dairy, 41@42c; cooking butter, 33@34½c. New York cheese, 28@29c; do., Ohio, 26½@27c. Sected eggs, 37@38c; eggs at mark, 35@36c. Goose eggs, $1@1.10 doz; duck eggs, 40@46c.

Grain and Hay.—No. 2 yellow ear corn, $2@2.05 bu; No. 3 yellow shelled, $1.70@1.72; No. 2 white oats, $1.01@1.01½; No. 3 do., 99½c@$1 bu; standard oats, $1.00½@1.01 bu; No. 1 timothy hay, $29@29.50 ton; No. 2 do., $25.50@26. No. 1 light mixed, $25.50@26. Rye straw, $18@18.50. Oat straw, $17.50@18. Wheat straw, $17.50@18.

BALTIMORE PRODUCE

Baltimore, Md., April 15, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1@1.25 cwt; do., New York, $1@1.25 cwt; Eastern Shore, 75c@$1 cwt. Sweet potatoes, yellow, $3.50@4 bbl; $1.40@1.65 hamper. Asparagus, $3.50@4.50 crate. Beets, 3@5c bch. Cabbage, Danish, $20@25 ton. Celery, Florida, $2@2.75 crate; do., native, 5@6c bch. Cucumbers, $4@5 crate. Lettuce, $2.50@4 basket. Onions, yellow, $1@1.50 per cwt; red, $1@1.25 per cwt. Radishes, $1@1.50 basket. Tomatoes, $2.50@3.50 crate.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5; New York State, $4@6; do., No. 2, $3.50. Strawberries, 15@35c qt.

Butter.—Creamery, western, extras, 43@44c; firsts, 42@43c; pound prints, 40@41c; do., firsts, 43@44c. Nearby creamery, 40@41c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 33@34c; Eastern Shore and Virginia, 33@34c; Southerns, 33c. Duck eggs, 37c dozen.

Live Poultry. — Chickens 38@40c; do., rough, 28@30c; old roosters, 28@30c; ducks, 29@33c; turkeys, 30@35c.

Hay and Straw.—No. 1 timothy, $32.50; standard timothy, $31.50@32; No. 2 timothy, $31; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover, $30.50@31.50; No. 2 31.50. No. 1 clover, $33@34; No. 2 clover, $31@32. No. 3 do., $28@29. No. 1 straight rye straw, $22; No. 1 tangled, $20@21; wheat straw, $18@18.50; oats straw, $17@20.

Grains.—Wheat, bag lots, $2.10@2.15 bu. Corn, bag lots, white, $1.85 bu. No. 2 white, $1.95; ear corn, $7.75@8 bbl. Standard white oats, 97½c; No. 3 white, 97c. Rye, No. 2 western, $2.60; bag lots, $2@2.12.

YORK PRODUCE MARKET

York, Pa., April 15, 1918.

There was little change in market quotations last week. In fact, there was little activity in the different city markets. The weather was so disagreeable that the attendance of both farmers and buyers was light.

Eggs.—32@35c per dozen.

Butter.—Country, 45@48c lb; separator, 50@52c lb. Milk, 10c qt.

Poultry.—Roosters, 22@26c lb; dressed, 75c@$2 each.

Vegetables.—Potatoes, 7@16c ½ pk; 50@90c bu; cabbage, 5@10c hd; lettuce, 5@8c hd; beets, 5c bch; radishes, 5@6c bch; onions, 3@5c bch; lima beans, 35@40c qt; soup beans, 15@18c pt; celery, 5@10c stalk; turnips, 20@25c ½ pk; corn meal, 5@7c qt.

Fruit.—Apples, 10@40c ½ pk.

Country Butchering.—Lard, 30@33c lb; sausage, 34@40c lb; dried beef, 60c lb; bologna, 60c lb; shoulder, 32c; whole, 32@45c lb; ham, 40@64c sliced; whole, 40@45c lb; bacon, 60c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, $1; rye, $1.90; bran, $2.40 cwt; middlings, $3 per cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.72; oats, 95c; rye, $1.60; bran, $45 ton; middlings, $55 ton.

LANCASTER PRODUCE

Lancaster, Pa., April 15, 1918.

So great was the offering of potatoes on the market this morning, that many of the farmers made house to house canvasses for business after the market closed. Despite the weather, the attendance of farmers was large, and the supply of produce was abundant. Eggs dropped to thirty-two cents a dozen.

Butter and Eggs.—Creamery butter, 55@60c per lb; country butter, 55@58c; fresh eggs, 32@34c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables.—Asparagus, two bunches for 25c; spinach, 30c per ½ pk; potatoes, 12@15c ½ pk; do., 90c@$1 bu; sweet potatoes, 25@30c ½ pk; new beans, 60c ½ pk; lima beans, 15c pt; apples, 35c ½ pk.

Grain Market.—Milling wheat, $2.05 per bu; new ear corn, $1.60 per bu; rye, $1.90 bu; oats, 80c bu; No. 1 Timothy hay, $28 ton; clover hay, $25; wheat straw, $17; oat straw, $10.

NEW YORK PRODUCE

New York City, April 15, 1918.

Butter advances and supplies are short. Cheese steady and firm. Little change in eggs. Food Administration lifts ban on sale of hens, effective April 20. Potatoes sell steadily.

Butter. — Creamery, extras (92 score), per pound, 45c; higher score, 45½@46c; thirds to firsts, 38@44c; state dairy, 36@43c; ladles, 32@35c.

Cheese. — Colored specials, 25@25½c. Daisies, 25@26c.

Eggs. — Fresh gathered extras, 38½c; extra firsts, 37@38c; nearby white, fine to fancy, 39@40c; ordinary to good, 37@38c; browns, 37@38c.

Vegetables and Greens. — Beets, per bbl. $1.@2. Onions, per 100-lb. bag, 50c@$2.25. Potatoes, Jersey, $1@1.75 per 100 lbs.; state and western, $1.60@2 per 100 lbs. Carrots, 75c@$2.25 per barrel.

Apples.—Winesap, $4@6; York Imperial, $3.50@5.50; King, $4@6; Baldwin, $3@6; Greening, $4@6; Northern Spy, $4@7.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 15, 1918.

Beef Cattle.—There was an advance in the market for steers, bulls and cows, due to a good demand. Offerings were only moderate. Calves were a shade firmer, with supplies pretty well cleaned up.

Steers, choice, $13.50@15; common to fair, $12@13.50; bulls, $9@11.50; extras, higher; cows, fat, per lb., choice, $9@10.40; fair to good, per lb., 7@9c; bologna cattle, choice, 5½@7c; common, 4@5c; calves, extra choice, $18@18.50; fair to good, $16.50@17.50; common, $13@15; Tennessee and southern, $9@16.

Sheep and Lambs.—There was a fairly active demand for sheep and values were well sustained under light offerings. Lambs were pretty well cleaned up at full figures.

Sheep, wethers, extra, $14@14.50; good to choice, $12@13.50; medium, $10@11.50; common, $8@9.50; ewes, heavy, fat, $13@14. Lambs, choice, $20@20.50; do., medium, $7@18; inferior, $15@16.50.

Hogs.—Buyers were operating only in a small way, but prices were steadily maintained under moderate offerings. Quotations for best western, $20.

City Dressed Stock.—The market for steers, heifers and cows ruled firm and higher under a good demand, which kept supplies pretty well under control. Sheep and lambs were a shade firmer, with demand fairly active. Hogs were firmly held.

Steers, 20@25c; heifers, 21@23c; cows, 16@22c; calves, 27@28c; southern and barnyards, 20@22c; country dressed, 23@25c; sheep choice, 27@29c; do., extra, 30c; lambs, 30@32c; hogs, 25¾@26c.

BUFFALO LIVE STOCK

Buffalo, N. Y., April 15, 1918.

Cattle.—Receipts, 3,300; active; prime steers, $15.50@16; shipping steers, $15@15.25; butchers, $11@14.50; yearlings, $12.50@14; heifers, $9.50@13; cows, $6.50@13; bulls, $7@12; stockers and feeders, steady to strong. $65@140.

Calves.—Receipts, 2,300; active and steady, $7@16.50.

Hogs.—Receipts, 12,000; active; pigs 10c higher, others 10@15c lower; heavy, $18.25@18.50; mixed, $18.60@18.65; yorkers, $18.60@18.65; light yorkers and pigs, $18.50@18.60; roughs, $16.25@16.50; stags, $13@14.

Sheep and Lambs.—Receipts, 6,000; active; wools, 25c lower, others steady; wool lambs, $16@21.75; clipped lambs, $13@18.50; yearlings, $14.50@15.50; wethers, $14.50@15; ewes, $7@14; mixed sheep, $14.25@14.50.

LANCASTER LIVE STOCK

Lancaster, Pa., April 15, 1918.

Cattle.—Receipts, 720 head, against 1,110 head last Monday; market active; prices 25c higher; yards cleared; good to choice steers, $12@14; common to medium, $9.25@9.75; good to choice heifers, $10.25@11.75; common to medium heifers, $8.75@9.75; good to choice cows, $9.75@10.90; common to medium cows, $5.75@6.75; bologna and fair flesh cows, $7.25@8.75; good to choice bulls, $10.50@11.50; common to medium bulls, $8.25@8.50; bologna bulls, $8.75@9.75; good to choice stock bulls, $9.25@10.25; common to medium stock bulls, $8.25@8.50.

Hogs.—Receipts, 328 head; market active; prices steady; best, $18@18.50; roughs, $13@14.50.

NEW YORK LIVE STOCK

New York City, April 15, 1918.

Beeves.—Receipts 2,900; firm; steers, $12@15.35; bulls, $8@13; cows, $4.50@10.75.

Calves.—Receipts, 5,440; firm; veals, $12@17.50; culls, $10@11.75.

Sheep and Lambs.—Receipts, 4,650; steady; sheep, $9@14; unshorn lambs, $20@21; clipped, $17@18.

Hogs.—Receipts, 7,390; steady at $18.50@18.75; roughs, $17.25.

BALTIMORE LIVE STOCK

Baltimore, Md., April 15, 1918.

Calves.—Choice handy weight veals, pound, 17c; do., heavy, fat veals, 16@16½c; good veals, 16@16½c; heavy, smooth, fat calves, head, $18@22; heavy or rough calves, $14@16; small, thin calves, $8@10.

Beef Cattle.—Young, fat steers, in prime condition, 11@12c pound; steers, under 1,000 pounds, 9@10c; oxen, 7@9c; bulls, 8@9c; large, young cows, 7@8c; cows, poor to medium, 4@5c; fresh cows with calf, $40@65; poor, thin, meadow stock, 4@5c lb.

Lambs and Sheep.—Choice, fat sheep, pound, 10@12c; fair, 6@8c; inferior, rough, head, $2.50@4; old bucks, 8@10c; spring lambs, fat, 20@22c lb.

Live Pigs.—Pigs, as to size and condition, apiece, $3@4.50; shoats, as to size, apiece, $6@7.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., April 15, 1918.

Baled Hay and Straw.—Receipts, 374 tons of hay. The hay market was quiet and unchanged, with fairly liberal offerings, most of which was of unattractive quality. Straw was pretty well cleaned up and ruled firm.

Timothy hay, according to location—No. 1 large bales, $29@30; No. 1, small bales, $29@30; No. 2, $27@28; No. 3, $23@25; sample, $19@20; no grade, $14@18; clover-mixed hay, light mixed, $27@28; No. 1, do., $25.50@26.50; No. 2, do. $24@25.

Straw. — No. 1 straight rye, $21@22; No. 2 do., $20@20.50; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1, wheat straw, $19@19.50; No. 2 do., $18@18.50; No. 1 oat straw, $19@19.50; No. 2 do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $1.80@1.85.

Oats.—No. 2 white, $1.01½@1.02

NEW YORK HAY AND GRAIN

New York City, April 15, 1918.

Feed.—The demand in the spot market was quiet for all qualities of feed on Saturday and prices were nominally unchanged. Western mills were not offering to any extent and the main idea seemed to be to try and force shipments, long overdue, thru to consuming centers. City mills are also out of the market, as far as new business is concerned, they working on old contracts. The reports from Washington indicate that the Administration is against any change being made in the present minimum price for wheat and this should end much of the uncertainty now prevailing. Quotations (prompt Western shipment): Rye middlings, $54.65 per ton; oat feed, $30 per ton. Barley feed, $45.75; linseed meal, per ton, $58.50.

Hay and Straw.—The market is still unsatisfactory on medium and low grades of hay, especially at Brooklyn points. High grades not plenty, but trade quiet. Probably strictly No. 1 if unloaded at 33d street shed would find some buyers above our tou quotations.

Hay.—No. 1, prime, $29@31; No. 2, $25@29; fancy clover mixed, $25@27.

Straw.—No. 1 rye, $18.

Corn.—No. 3, $1.90½.

Oats.—No. 2 white, $1.01@1.02.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., April 15, 1918.

Butter.—Receipts of solid-packed creamery as well as of prints, were exceedingly small and demand promptly cleaned up all offerings. Prices were very firm at the late advance.

Western, fresh, solid-packed creamery, extra, 44c; higher-scoring goods, 45@46c; extra firsts, 43@43½c; firsts, 42@42½c; seconds, 41@41½c; sweet creamery, extra, 45c; under grades, 42@44c; nearby prints, fancy, 48c; do., average, extra, 45@47c; firsts, 43@44c; seconds, 41@42c; special brands jobbing, 49@51c.

Receipts as compiled by the Bureau of Markets, 754 tubs of butter and 3681 cases of eggs.

Cheese was quiet and steady.

New York, whole-milk, fancy, 24@24½c; specials higher; New York, whole-milk, fair to good, 22@23c.

NEW YORK MILK MARKET

New York City, April 15, 1918.

The demand last week was not what it should be owing in part to the cool weather. This means that the surplus was a serious burden. The Federal Commission rate to the producer of Grade B in first district is $2.50 a hundred for 3 percent milk; $2.74, or approximately 5.8 cents a quart for 3.6 percent, and $2.90 for 4 percent.

Receipts of milk and cream in 40-quart cans for the week ending April 12 were as follows:

Railroad	Milk	Cream
Erie	88,833	1,797
Susquehanna	5,813	38
West Shore	10,375	1,030
Lackawanna	63,490	1,806
N. Y. Central (long haul)	111,466	2,697
Ontario	38,666	3,457
Lehigh Valley	44,439	874
New Haven	5,890	
Pennsylvania	10,890	225
Other sources	6,910	205
Totals	336,772	12,329
Same week last year	380,481	15,128

The Despatcher's Story

The Last Order

By Frank H. Spearman

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In order to meet objection on the score of the impossible, and to anticipate inquiry as to whether "The Despatcher's Story" is true, it may be well to state frankly at the outset that this tale, in its inexplicable psychological features, is a transcript from the queer things in the railroad life. It is based on an extraordinary happening that fell within the experience of the president of a large Western railway system. Whether the story, suggestive from any point of view of mystery, can be regarded as a demonstration of the efficacy of prayer may be a disputable question. In passing, however, it is only fair to say that the circumstance on which the tale is based was so regarded by the despatcher himself, and by those familiar with the circumstance.

A hundred times if once the thing had been, on appeals for betterment, before the board of directors. It was the one piece of track on the Mountain Division that trainmen shook their heads over—the Peace River stretch. To run any sort of a line thru that canyon would take the breath of an engineer. Give him all the money he could ask and it would stagger Wetmore himself. Brodie in his day said there was nothing worse in the Andes, and Brodie, before he drifted in the Rockies, had seen, first and last, pretty much all of the Chilian work.

But our men had the job to do with one half the money they needed. The lines to run, the grades to figure, the culverts to put in, the fills to make, the blasting to do, the tunnel to bore, the bridge to build—in a limit; that was the curse of it—the limit. And they did the best they could. But I will be candid: If a section and elevation of Rosamond's bower and a section and elevation of our Peace River work were put up to stand for a prize at a civil engineers' cake-walk the decision would go, and quick, to the Peace River track. There are only eight miles of it; but our men would back it against any eighty on earth for whipping curves, tough grades, villainous approaches, and railroad tangle generally.

The directors always have promised to improve it; and they are promising yet. Thanks to what Hailey taught them, there's a good bridge there now—pneumatic caissons sunk to the bed. Its the more pity they haven't eliminated the dread main line curves that approach it, thru a valley which I brief as a canyon and the Mauvaises Terres rolled into one single proposition.

Yet, we do lots of business along that stretch. Our engineers thread the cuts and are glad to get safely thru them. Our roadmasters keep up the elevations, hoping some night the blooming right of way will tumble into perdition. Our despatchers, studying under shaded lamps, think of it with their teeth clinched and hope there never will be any trouble on that stretch. Trouble is our portion and trouble we must get; but not there. Let it come; but let it come anywhere except on the Peace.

It was in the golden days of the battered old Wickiup that the story opens; when Blackburn sat in the night chair. The days when the Old Guard were still there; before Death and Fame and Circumstance had stolen our first commanders and left only us little fellows, forgotten by every better fate, to tell their greater stories.

Hailey had the bridges then, and Wetmore the locating, and Neighbor the roundhouses, and Bucks the superintendency, and Callahan, so he claimed, the work, and Blackburn had the night trick.

I

When Blackburn came from the plains he brought a record clean as the book of life. Four years on a station key; then eight years at Omaha despatching, with never a blunder or a break to the eight years. But it was at Omaha that Blackburn lost the wife whose face he carried in his watch. I never heard the story, only some rumor of how young she was and how pretty, and how he buried her and the wee baby together. It was all Blackburn brought to the West End mountains, his record and the little face in the watch. They said he had no kith or kin on earth, besides the wife and the baby back on the bluffs of the Missouri; and so he came on the night trick to us.

I was just a boy around the Wickiup then, but I remember the crowd; who could forget them? They were jolly good fellows; sometimes there were very high jinks. I don't mean anybody drunk or that sort; but good tobacco smoke and good songs to sing and good stories to tell—and Lord! how they could tell them. And when the pins slipped, as they would, and things went wrong, as they will, there were clear heads and pretty wits and stout hearts to put things right.

Blackburn, as much as I can remember, always enjoyed it; but in a different way. He had such times a manner like nobody else's—a silent, beaming manner. When Bucks would roll a great white Pan-Handle yarn over his fresh linen shirt-front and down his cool clean white arms, one of them always bared to the elbow—sanding his points with the ash of a San Francisco cigar—and would begin to heave from the middle up like a hippopotamus, and Callahan would laugh his whiskers full of dew, and Hailey would yell with delight, and the slaves in the next room would double up on the dead at the story, Blackburn would sit with his laugh all in a smile, but never a noise or a word. He enjoyed it all; not a doubt of that; only it was all tempered, I reckon, by something that had gone before. At least, that's the way it now strikes me, and I watched those big fellows pretty close—the fellows who were to turn, while I was growing up among them, into managers and presidents and magnates; and some of them from every day catch-as-catch-can men with the common alkali flecking their boots into dead men for whom marble never rose white enough or high enough.

Blackburn was four years at the Wickiup on the night trick; it would not have seemed natural to see him there in daylight. It needed the yellow gloom of the old kerosene lamp in the room; the specked, knotted, warped, smoky pine ceiling losing itself in black and cobwebbed corners; the smoldering murk of the soft-coal fire brooding in the shabby old salamander, and, outside in the darkness, the wind screwing down the gorge and rattling the shrunken casements, to raise Blackburn in the despatcher's chair. Blackburn and the lamp and the stove and the ceiling and the gloom—in a word, Blackburn and the night trick—they went together.

Before the Short line was opened the Number One and Number Five trains caught practically all the coast passenger business. They were immensely heavy trains; month after month we sent out two and three sections of them each way, and they always ran into our division on the night trick. Blackburn handled all that main line business with a mileage of eight hundred and five, besides the mountain branches, say four hundred more; and the passenger connections came off them, mostly at night, for One and Five.

Now, three men wrestle with Blackburn's mileage; but that was before they found out that despatchers, altho something tougher than steel, do wear out. Moreover, we were then a good way from civilization and extra men. If a despatcher took sick there was no handy way of filling in; it was just double up and do the best you could.

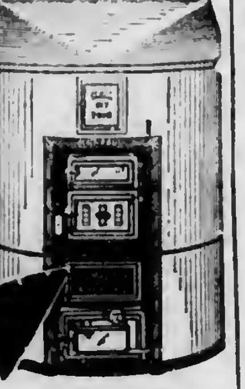
One lad in the office those days everybody loved: Fred Norman. He was off the Burlington. A kid of a fellow who looked more like a choir boy than a train despatcher. But he was all lightning—a laughing, restless, artless boy, open as a book and quick as a current. There was a better reason still, tho, why they loved Fred: The boy had consumption; that's why he was out in the mountains, and his mother in Detroit used to write Bucks asking about him, and she used to send us all things in Fred's box. His flesh was as white and as pink as mountain snow, and he had brown eyes; he was a good boy, and I called him handsome. I reckon they all did. Fred brought out a tennis set with him, the first we ever saw in Medicine Bend, and before he had been playing an hour he had Neighbor, big as a grizzly, and Callahan, with a pipe in one hand and a tennis guide in the other, chasing all over the yard after balls; and Hailey trying to figure forty love, while Fred taught Bucks the Lawford drive. I don't say what he was to me; only that he taught me all I ever knew or ever will know about handling trains; and, tho I was carrying messages then, and he was signing orders, we were really like kids together.

Fred for a long time had the early trick. He came on at four in the morning and caught most of the thru freights that got away from the River behind the passenger trains. There was no use trying to move them in the night trick. Between the stock trains eastbound and the both-way passenger trains, if a westbound freight got caught in the mountains at night the engine might as well be standing in the house saving fuel—there wasn't time to get from one siding to another. So Fred Norman took the freights as they came and he handled them like a ringmaster. When Fred's whip cracked, by Joe! a train had to dance right along, grade or no grade. Fred gave them the rights and they had the rest to do—or business to do with the superintendent or with Doubleday, Neighbor's assistant in the motive power.

There was only one tendency in Fred Norman's despatching that anybody could criticise: He never seemed, after handling trains on the plains, to appreciate what our mountain grades really meant, and when they pushed him he sent his trains out pretty close together. It never bothered him to handle a heavy traffic; he would get the business thru the mountains just as fast as they could put it at the Division; but occasionally there were some hair-curling experiences among the freights on Norman's trick trying to keep off each other's coat-tails. One night in July there was a great press moving eight or nine trains of Montana grassers over the main line on some kind of a time contract—we were giving stockmen the earth then. Everybody was prodding the Mountain Division, and part of the stuff came in late on Blackburn and part of it early on Fred, who was almost coughing his head off about that time, getting up at 3.30 every morning. Fred at four o'clock took the steers and sent them train after train thru the Rat River country like bullets out of a Maxim gun. It was hot work, and before he had sat in an hour there was a stumble. The engineer of a big ten-wheeler pulling twenty-five cars of steers had been pushing hard and, at the entrance of the canyon, set his air so quick he sprung one of the driver shoes and the main rod hit it. The great steel bar doubled up like a man with a cramp. It was showing daylight; they made a stop, and, quick as men could do it, flagged both ways. But the last section was crowding into the canyon right behind; they were too close together, that was all there was to it. The hind section split into the standing train like a butcher knife into a sandwich. It made a mean wreck—and, worse, it made a lot of hard feeling at the Wickiup.

When the investigation came it was pretty near up to Fred Norman right from the start, and he knew it. But Blackburn, who shielded him when he could, just as all the despatchers did, because he was a boy—and a sick one among men—tried to take part of the blame himself. He could afford it, Blackburn; his shoulders were broad and he hadn't so much as a fly-speck on his book. Bucks looked pretty grave when the evidence was all in, and around the second floor they guessed that meant something for Norman. Fred himself couldn't sleep over it, and to complicate things the engineer of the stalled train, who hated Doubleday, hinted quietly that the trouble came in the first place from Doubleday's new-fangled idea of putting the driver shoes behind instead of in front of the wheels. Then the fat was in the fire. Fred got hold of it, and, boy-like—sore over his own share in the trouble and exasperated by something Doubleday was reported to have said about him over at the house—lighted into Doubleday about the engine failure.

Doubleday was right in his device, as time has proved; but it was un-



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heard of then and, moreover, the assistant master mechanic, sensitive to criticism at any time, was a fearful man to run against. Sunday morning he and Norman met in the trainmaster's office. They went at each other like sparks, and when Doubleday, who had a hard mouth, began cursing Fred, the poor little despatcher, rankling with the trouble, anyway half sick, went all to pieces and flew at the big fellow like a sparrowhawk. He threw a wicked left into the master mechanic before Doubleday could lift a guard. But Walter Doubleday, angry as he was, couldn't strike Fred. He caught both the boy's hands and pushed him, struggling madly, back against the wall to slap his face, when a froth of blood stained Fred's lips and he fell fainting; just at that minute Blackburn stepped into the room.

It wasn't the kind of a time—they weren't the kind of men—to ask or volunteer explanations. Blackburn was on Doubleday in a wink, and before Walter could right himself the night despatcher had thrown him headlong across the room. As the operators rushed in, Blackburn and the tall master mechanic sprang at each other in a silent fury. No man dare say where it might have ended had not Fred Norman staggered between them with his hands up—but the blood was gushing from his mouth.

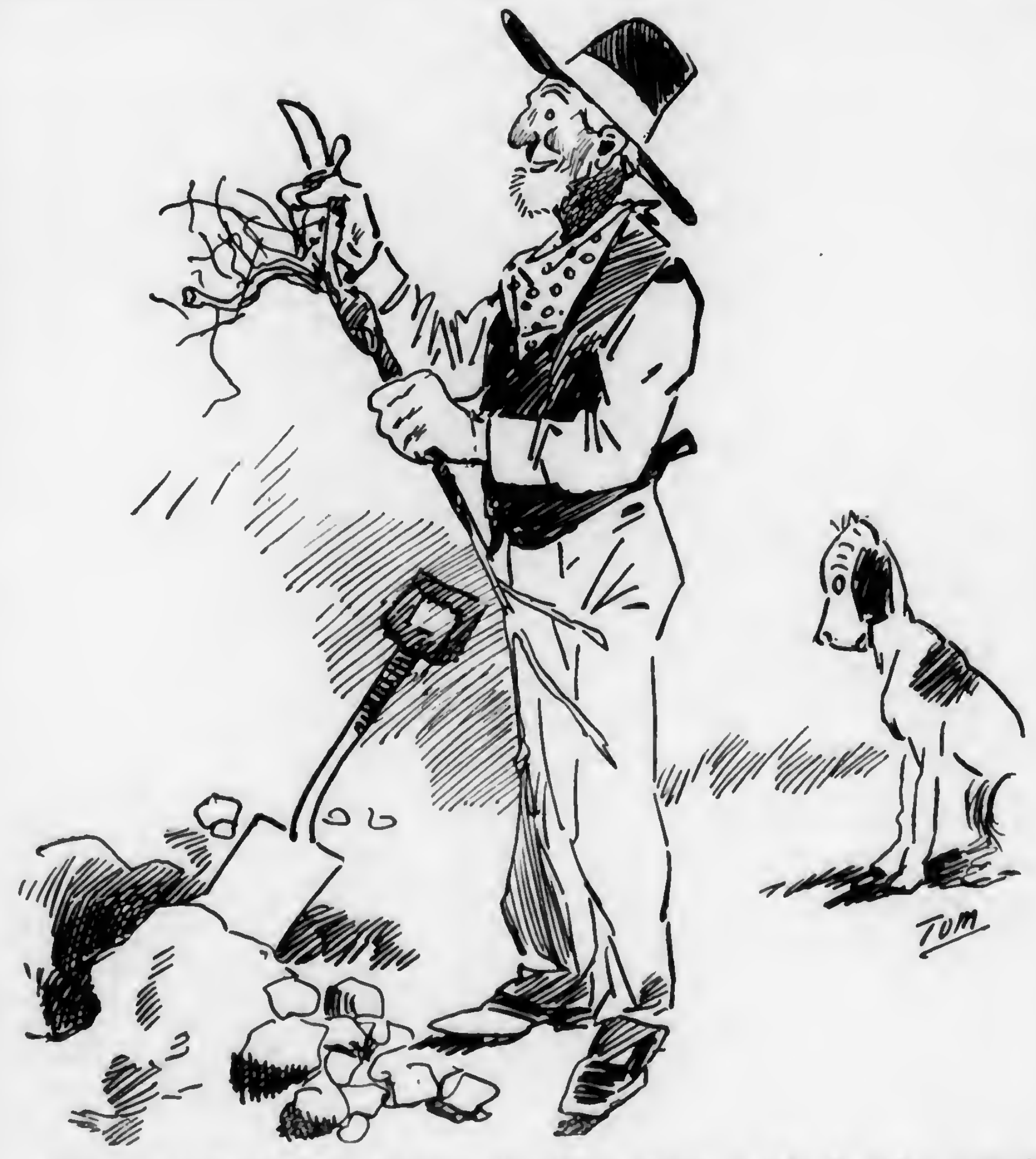
It was pretty serious business. They caught him as he fell, and the boy lay on Blackburn's arm limp as a dead wire; nobody thought after they saw that hemorrhage that he would ever live to have another. I was scared sick, and I never saw a man so cut up as Doubleday. Blackburn was cool in a second, for he saw quicker than others and he knew there was danger of the little despatcher's dying right there in his tracks. Blackburn stood over him, as much at home facing death as he was in a fight or in a despatcher's chair. He appeared to know just how to handle the boy to check the gush, and to know just where the salt was and how to feed it, and he had Doubleday telephoning for Dr. Carhart and me running to a saloon after chopped ice in a jiffy. When anybody was knocked out, Blackburn was as regular a nurse as ever you saw; even switchmen, when they got pinched, kind of looked to Blackburn.

That day the minute he got Fred into Carhart's hands there was Fred's trick to take care of, and nobody, of course, but Blackburn to do it. He sat in and picked up the threads and held them until noon; then Maxwell relieved him. Doubleday was waiting outside when Blackburn left the chair. I saw him put out his hand to the night despatcher. They spoke a minute, and went out and up Third Street toward Fred Norman's room. It was a gloomy day around the depot. Everybody was talking about the trouble, and the way it had begun and the way it had ended. They talked in undertones, little groups in corners and in rooms with the doors shut. There wasn't much of that in our day there, and it was depressing. I went home early to bed, for I was on nights. But the wind sung so, even in the afternoon, that I couldn't quiet down to sleep.

II

We were handling trains then on the old single-order system. I mention this because in no other way could this particular thing have happened; but there's no especial point in that, since other particular things do happen all the time, single order, double order, or no order system.

The wind had dropped, and there was just a drizzle of rain falling thru the mountains when I got down to the depot at seven o'clock that Sunday evening. I don't know how much sleep Blackburn had had during the day, but he had been at Fred Norman's bed most of the afternoon with Doubleday and Carhart, so he couldn't have had much. About half-past seven Maxwell sent me over with a note and his storm-coat for him and the three men were in the room then. Boy-like, I hung around until it was time for Blackburn to take his trick, and then he and Doubleday and I walked over to the Wickiup together.



Uncle Amos says: "I always calculate when I see a man plantin' trees that there's hope for the future. It shows a man who has thoughts beyond the immejit present and who is willin' to do somethin' for benefit of people he'll never see. Its most encouragin' in the midst of the general scramble to git the dollar quick an' salt it away before the sun goes down, fearin' it might be the last day."

At sundown everything was shipshape. There hadn't been an engine failure in the district for twenty-four hours and every hand-car was running smoothly. Moreover, there were no extra sections marked up and only one special on the Division card—a theatrical train eastbound with Henry Irving and company from 'Frisco to Chicago. The Irving Special was heavy, as it always is; that night there were five baggage cars, a coach and two sleepers. I am particular to lay all this out just as the night opened when Blackburn took his train sheet, because sometimes these things happen under extraordinary pressure on the line and sometimes they don't; sometimes they happen under pressure on the despatcher himself. It was all fixed, too, for Blackburn to handle not only his own trick but the first two hours of Fred's trick, which would carry until six o'clock in the morning. At six Maxwell was to double into a four-hour dog-watch, and Callahan was to sit in until noon.

There was nothing to hold the big fellows around the depot that night, and they began straggling home thru the rain about nine o'clock. Before ten, Bucks and Callahan had left the office; by eleven, Neighbor had gone away from the roundhouse; Doubleday had gone back to sit with Fred Norman.

The lights in the yard were low and the drizzle had eased into a mist; it was a nasty night, and yet one never promised better for quiet. Before midnight the switchmen were snug in the yard shanties; in the Wickiup there were the night ticket agent downstairs and the night baggageman. Upstairs every door was locked and every room was dark, except the despatcher's office. In that, Blackburn sat at his key; nearby, but closer to the stove, sat the night caller for the train crews, trying to starch his hair with a ten-cent novel.

The westbound Overland passenger, Number One, was due to leave Ames at 12.40 A. M., and ordinarily would have met a Special like the Irving at Rosebud, which is a good bit west of the river. But Number One's engine had been steaming badly all the way from McCloud, and on her schedule, which was crazy fast all night, she did not make Ames until some fifty minutes late. While there were no special orders, it was understood we were to help the Irving train as much as possible anyway. Bucks had made the acquaintance of the great man and his fellows on the westbound run, and as they had paid us the particular compliment of a return trip, we were minded to give them the best of it—even against Number One, which was always rather sacred on the sheet. This, I say, was pretty generally understood; for when it was all over there was no criticism whatever on Blackburn's intention of making a meeting-point for the two trains, as they then stood, at O'Fallon's siding.

Between Ames and Rosebud, twenty miles apart, there are two sidings—O'Fallon's, west of the river, and Salt Rocks, east. There was no operator at either place. The train that leaves Ames westbound is in

the open for twenty miles with only schedule rights or a despatcher's tissue between her and the worst of it. At one o'clock that morning Blackburn wired an order to Ames for Number One to hold at O'Fallon's for Special 202. A minute later he sent an order for Special 202 to run to O'Fallon's regardless of Number One. At least, he thought he sent such an order; but he didn't—he made a mistake.

When he had fixed the meeting-point, Blackburn rose from his chair and sat down by the stove. I lazily watched him, until, falling into a doze as I eyed him drowsily, he began to loom up in his chair and to curl and twist toward the roof like a signal column; then the front legs of his chair struck the floor, and with a start I woke, just as he stepped hurriedly back to his table and picked up the order book.

The first suspicion I had that anything was wrong was an exclamation from Blackburn as he stared at the order book. Putting it down almost at once and holding the page open with his left hand, he plugged Callahan's house wire and began drumming his call. Callahan's "Aye, aye," came back inside of a minute, and Blackburn tapped right at him: "Come down." And I began to wonder what was up.

His face was drawn into the very shape of fear and his eyes, bent hard on me, were looking thru me and thru the shivering window—I know it now — and thru the storming night, horror-set, into the canyon of the Peace River.

The sounder broke and he turned back, listened a moment; but it was stray stuff about time freight. He pushed the chair from behind him, still like a man listening—listening; then with an effort, plain even to me, he walked across the office, pushed open the door of Callahan's private room, and stood with his hand on the knob, looking back at the lamp. It was as if he still seemed to listen, for he stood undecided a moment; then he stepped into the dark room and closed the door behind him, leaving me alone and dumb with fear.

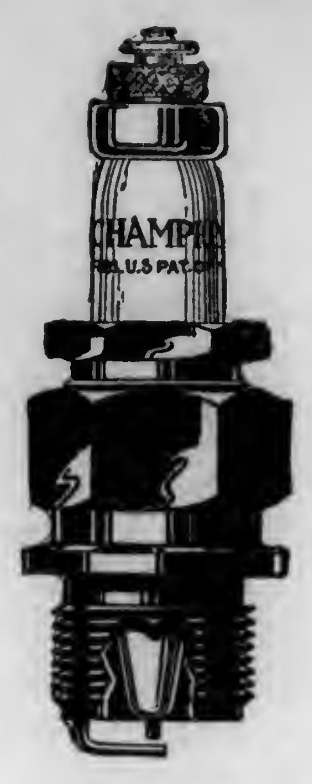
The mystery lay, I knew, in the order book. Curiosity gradually got the better of my fright, and I walked from the cooler over to the counter to get courage, and shoved the train register around noisily. I crossed to the despatchers' table and made a pretense of arranging the pads and blanks. The train order book was lying open where he had left it under the lamp. With my eyes bulging, I read the last two orders copied in it:

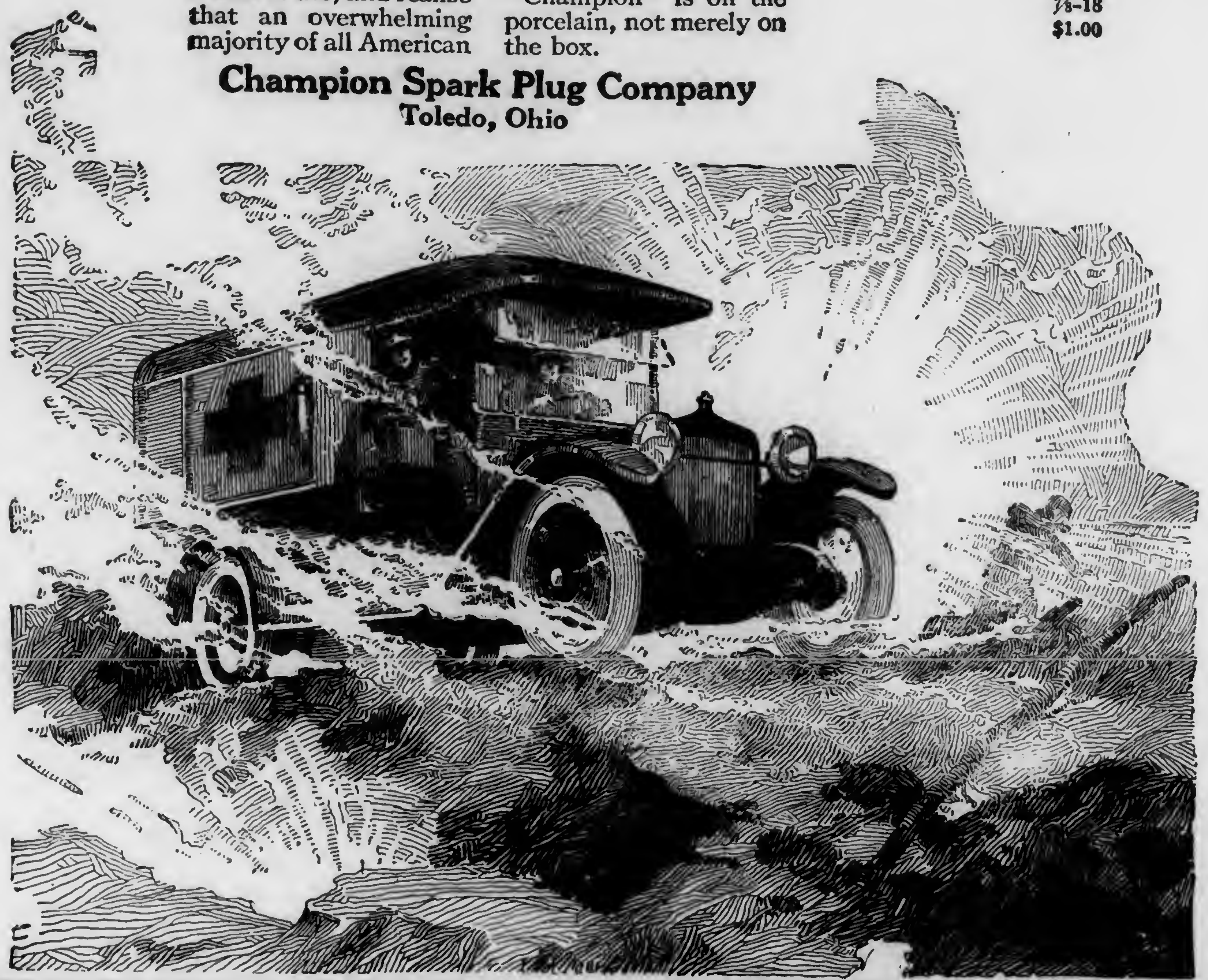
> C. and E. No. One, Ames.
>
> No. One, Eng. 871, will hold at O'Fallon's for special 202.
>
> C. and E. Special 202, Rosebud.
>
> Special 202, Eng. 636, will run to Salt Rocks regardless of No. One.

SALT ROCKS! I glared at the words and the letters of the words.

I re-read the first order and read again the second. O'Fallon's for Number One. That was right. O'Fallon's it should be for the Special 202, of course, to meet her. But it wasn't; it was the first station east of O'Fallon's he had ordered the Special to run to. It was a lap order. My scalp began to creep. A lap order for the Irving Special and the Number One passenger, and it doomed them to meet head on somewhere between O'Fallon's and the Salt Rocks, in the Peace River canyon.

(To be concluded.)





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32x3½	7.00	35x4½	9.00
33x4	8.50	36x4½	9.00
34x4	8.50	37x4½	10.00

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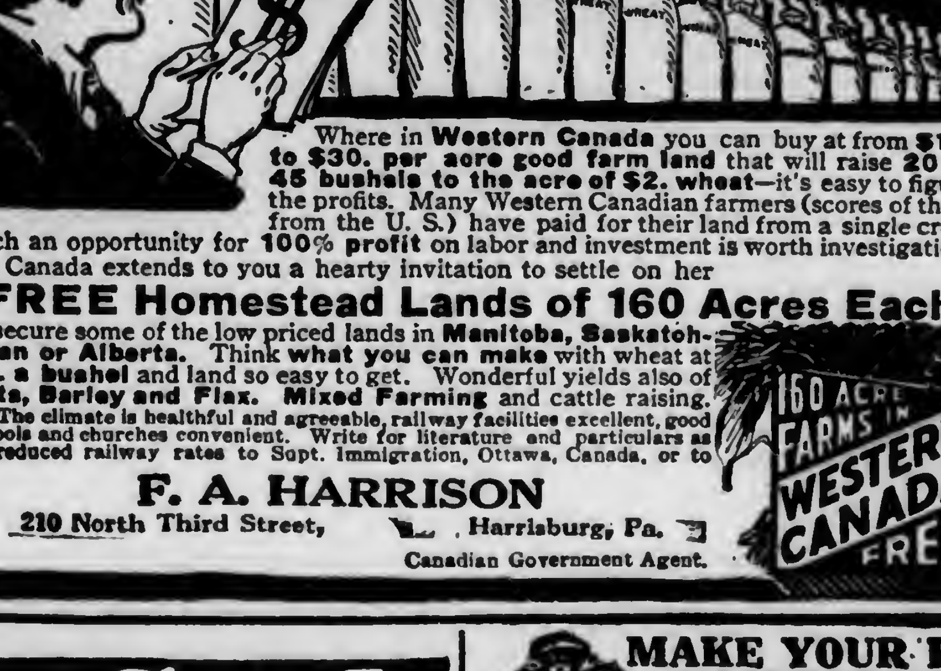

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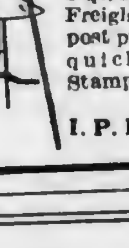

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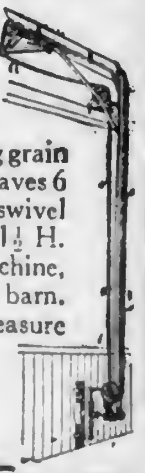

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ABSORBINE, JR., for mankind—an antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. It heals and soothes. $1.25 a bottle at druggists or postpaid. Will tell you more if you write. Made in the U. S. A. by
W. F. YOUNG, P. D. F., 154 Temple St., Springfield, Mass.

Bone Spavin
No matter how old the case, how lame the horse, or what other treatment has failed, try
Fleming's Spavin and Ringbone Paste, $2 a Bottle
One application usually enough; sometimes two required. Intended only for the established cases of Bone Spavin, Ringbone and Sidebone, causing chronic lameness.
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For the recent cases of Bone Spavin, Ringbone and Sidebone and for Bog Spavin, Splint, Curb, Soft Enlargements, etc. Your money back if these remedies fail. Write for Fleming's Vest-Pocket Veterinary Adviser. 192 pages, 67 Illustrations.
FLEMING BROS. 253 Union Stock Yards, Chemists, Chicago, Ill.

MINERAL HEAVE COMPOUND In use over 50 years
CURES HEAVES
Booklet Free
$3 Package guaranteed to give satisfaction or money back. $1 Package sufficient for ordinary cases.
MINERAL HEAVE REMEDY CO., 409 Fourth Ave., Pittsburg, Pa.

HAY and STRAW
Shipment wanted—Also Potatoes, Apples, Onions, Poultry, and all Produce—Prompt returns, high prices.
Feed and Fertilizer Sacks Bought
at good cash prices—What have you to offer?
GIBBS & BRO., 323 N. Front St. Phila., Pa.

Poultry

TURKEY RAISING

From almost every section of America comes the note of interest in turkey culture. I have just received an inquiry from a Southern farmer asking for the characteristics of the Narragansett turkey. Another wishes to know something of the old time Black Turkey and where he can get them. In fact, in the last six months I have received letters in regard to every known variety of turkeys. This is strong evidence of the great interest in turkey growing thruout the United States. The Narragansett turkeys are very extensively bred thruout the country, but the Black, it seems, is almost extinct. In Rhode Island and Connecticut there are more Narragansett turkeys raised than all other combined. They are a great market turkey and next to the Bronze in size. Their color is steel gray, each feather ending with black, under-color black. The females should be lighter in color than the male. The Narragansett turkeys frequently reach the enormous size of forty pounds, but really there is no advantage in breeding these large specimens as the medium ones are more desirable than the large birds. They are a little closer made bird than the Bronze, legs not quite so long and many breeders claim that they mature more rapidly than the Bronze, but this, however, is largely discredited, yet they are a quite rapidly maturing turkey. If I were to change varieties of turkeys I would either select the Slate or the Black. Here are two varieties of turkeys that are willfully neglected for no just reason. The Black turkey is a very desirable variety to breed. For many years this variety was almost entirely neglected. But during the past few years I notice they are being bred more extensively. Once in a while they are found in some of the shows, but often without any competition. They mature very early and are very vigorous. Why there are not more Slate turkeys grown, I am unable to say. Here is a variety that is worthy of every farmer's attention. They are very large, while the standard only calls for 27 pounds for cocks and 18 pounds for hens, yet they reach the enormous size of the Bronze very naturally. Hence, I believe the standard weight for this variety is entirely too low. They more frequently mature larger than standard requirements than below, which is evidence that they are naturally a large variety of turkeys. They are very beautiful in plumage, more of blue than slate, hence should be called the Blue turkey.

Any variety of turkeys is very profitable at the prices they are bringing in the markets and the farmer that has gumption enough to take advantage of this opportunity will produce as many turkeys each year as possible. When one considers the enormous number the recent census turns in for the output of the United States which is 6,500,000 turkeys it would seem that the market would be over supplied, but the demand is far greater than supply. Any breeder of purebred turkeys, no matter what variety, will always find his supply far short of the demand if he lets his facts be known to the world. Last February I was called to pick out the best breeding stock possible in a flock of 60 purebred Bronze. After selecting the breeders which were very fine I asked the lady why she did not advertise her turkeys, and she said, "Well, I always sold all we could raise before to our neighbors, until this season, and when I raised the price $1 each, it appeared to kill the sale of them." I said, "Well, you place an advertisement in—" I mentioned a leading farm journal that I knew would bring good results. She thought it was too late and she would not sell any of them, but in about six weeks after I was there she wrote me she was sold out and had returned several orders for toms. I don't know of anything that is in greater demand than turkeys. People generally mate their turkeys earlier than they did even five or six years ago, hence your surplus stock is all sold before you realize that you have advertised your stock. I know some people get the idea that turkeys are hard to raise. Well they are, if you have raised turkeys on the same ground for years. It makes a great difference if you omit raising turkeys just three or four years, you can grow them much easier. Turkeys are like sheep, they prefer clean new pasture and must have it. This is the reason why turkeys are so easily grown over the Western plains, the country is new, the insects are plentiful and everything is in their favor. It is my opinion that turkeys will be grown more extensively in the future than in the past, especially in the West.—J. C. Clipp, Indiana.

POULTRY YARD NOTES

Breeding from pullets is never advisable when it is possible to use mature hens. The chicks from pullet eggs will frequently be lacking in vigor and it will be difficult to develop them into fine birds. The experienced poultryman can almost tell at a glance whether the chicks are the plump vigorous birds hatched from mature breeding stock or the weaker stock which comes from using pullets in the breeding pens.

It never pays to neglect the purchase of a cockerel until a short time before the eggs are needed for hatching. This year there is likely to be a shortage of good breeding cockerels because of the high cost of feed during the past winter. Possibly some farmers who did not expect to hatch many chicks this year will again become interested when the spring weather arrives and they will be in the market for additional breeding stock.

The farm flock composed of one breed will usually prove the most profitable. The use of one breed to a farm reduces the cost of equipment and enables the farmer to become more or less of a specialist with his own breed. It increases the chances of selling eggs for hatching and breeding stock and diminishes the chances of mixing the flock and carelessly developing a flock of mongrels.

When using wire on poultry buildings it pays to buy the one-quarter inch mesh. This will absolutely prevent sparrows from entering the buildings, it is more work for thieves to cut up, and it acts as a windbreak. It also assists in preventing snow from sifting in the front in large quantities during severe blizzards.—R. G. Kirby, Michigan.

Use A Guernsey Bull A grade Guernsey produced in one year 16,288 lbs. milk and 844 lbs. of butter fat, or 985 lbs. of butter.
130% More Butter Fat
A Guernsey bull in Iowa sired daughters that are producing 130% more milk and butter fat than their scrub dams.
Don't sell your scrub cows for beef. Breed them to a pure bred Guernsey bull. The resulting heifers will produce from 25% to 100% more than their dams. Guernseys give greatest returns per dollar invested in feed. Write for Information. (1)
AMERICAN GUERNSEY CATTLE CLUB
Box M Peterboro, N. H.

Winterthur Farms
Offer For Sale Sons of
"UNEEDA KING ALCARTRA" No. 182646
A 33-Pound Bull
He traces twice to King Segis through his two best sons; Johan a McKinley Segis with a 40-lb. dam, and King Segis Pontiac with a 37.20-lb. dam.
No. 8—Born December 11th, 1917. He is nicely marked, of good conformation and a show calf in every way. His dam, K. S. P. C. Peg 326111, is a 17.42-lb. Jr. three-year-old daughter of King Segis Pontiac Calamity, a 28-lb. son of King Segis Pontiac Alcartra. His 15 nearest dams average 25.6 lbs. butter in seven days.
No. 15—Born December 22nd, 1917. He is about even in color, long, straight back, deep bodied and a show bull in every respect. His 10 nearest dams average 28.4 lbs. butter in seven days. Dam: Queen Nazli De Kol Segis 226241, A. R. O. at 3y. 559.90 lbs. milk, 20.02 lbs. butter. She is a granddaughter of De Kol Beets Segis.
No. 20—Born January 7th, 1918. This bull is a little more black than white and an extra good individual for one of his age. He comes from heavy producing dams. His ten nearest dams average 27-lbs. Dam; Queen Greenwood Concordia De Kol 161413, A. R. O., 476 lbs. milk, 22.08 lbs. butter. Her dam is a 27-lb. cow with a 26-lb. dam.
WINTERTHUR FARMS
Winterthur. Delaware.

You want strong, vigorous cows, that produce large quantities of milk and butterfat at low feed and labor costs.
Pure-bred **HOLSTEINS**
are the one breed that meets these requirements. Statistics prove Holsteins the most profitable breed on earth. Write for free booklet—no obligation. We have nothing to sell.
The Holstein-Friesian Ass'n. of America, Box 218, Brattleboro, Vt.

SPOT FARM HOLSTEINS
7-8 Holstein calves, either sex, $5 to $20 each, express prepaid in lots of 5. 45 high grade 2-year-olds, close springers, $65 to $80 each, 40 yearlings not bred; 30 registered heifers ready to breed $125 each. 28 registered bulls. Registered and high grade cows at farmers' prices.
John C. Reagan, Tully, N. Y.

Maple Lawn Holsteins
Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.
C. W. ELLIS, Jr., Cortland, N. Y.
Office, 31 1-2 Main St. Bell phone.

Jersey Bull ready for service. Dam's record over 500 lbs. butter in 1 year. Sire's Dam 22 lbs. in 7 days, Grand-dam, who is also his Great Grand-dam, 991 lbs. in 1 year. Write us.
J. M. MAIN & SONS, SHIPPENSBURG, PA.

Reg. & Grade Holsteins 30 head reg. heifers, $250 each; cash or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees.
WALTER M. CRUTTENDEN Wilkes-Barre, Pa.

For Sale Fine Reg. Guernsey heifers, Imp. & American bred. Some to freshen Apr. Some fine Imp. granddaughters of Gov. Chene; bull calves. J. S. Yoder, Wooster, O.

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd. BONNYMEADS FARMS, R. D. 1, Harrisburg, Pa.

Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M. E. Baschoar, Crystal Spring Stock Farm, Littlestown, Pa.

Milking Shorthorns Bull calves bred from the best milking strains, for sale; also few heifers. C. M. Kennedy & Sons, Ulster, Pa.

Holstein Heifer Calf 9-10 white from a 30-lb. sire. Price $60. Bull calf from same sire, $25. Oaks Dairy Farm, Wyalusing, Pa.

AYRSHIRE BULL CALVES Advance Registry ancestry. Priced to sell. They will improve your herd. ROBERT TEMPLETON & SON, ULSTER, PA.

Reg. Jerseys From some of the most noted blood in the world.
Fred C. W. RUNK, Woodlawn Farm, Allentown, Pa.

COUNTY NOTES

Union Co., Pa., (C), April 8.—The past two weeks have been favorable for corn husking, fodder hauling and manure hauling, plowing and sowing oats and planting potatoes. All these jobs have been done lately and still there are shocks of corn stover in fields. More plowing has been done for oats and corn and more oats seeded than during the first week in April for some years. Ground is getting dry, but works up fine for oats seeding. Clover seed has mostly been sown and some apple orchards have been sprayed. Some farmers are plowing their sod fields before seeding the oats. With some potatoes unsold, and the demand small at from 50 to 60 cents per bushel, less potatoes may be planted than last year. Wheat fields are not promising for a good crop. Farm sales are all over and a number of sales ran from $5,177 to $6,636; the latter was the amount of Laird Wehr's sale. Stock and implements all brought good prices. A car load of registered Brown Swiss cattle, the herd of Dr. Samuel G. Dixon, deceased, was sold at Brook Park lately. The best cow sold for $225 and two others at $200 each. There are not many of this breed in this county or these would have sold for more money. The crowd was small on account of farmers being busy at spring work. The farm bureau has not been able to secure a farm agent as yet.—J. N. Glover.

Cumberland Co., N. J., (S.) April 4.—The ground is getting rather dry. Many farmers have all their early potatoes planted; the acreage in this section is smaller than usual. Some canners are contracting for tomatoes at $30 per ton. Much milk is being produced; the price has been put down to 5¼ cents per quart. Potatoes are selling for 60 cents per bushel; butter, 50 cents pound; eggs, 33 cents dozen; hay $35 ton.—Everett H. Sheppard.

AMERICAN JERSEY CATTLE CLUB TO CELEBRATE GOLDEN ANNIVERSARY

The fiftieth annual meeting of the American Jersey Cattle Club will be held in New York City on May first, 1918. The original number of 40 members has been increased to 722, and new members are now being admitted at the rate of 100 per year. The present yearly registration of purebred Jerseys is 40,000 as compared with 400 in the first year of the Club's existence. To date 93 volumes of the Herd Register have been published, and they include the names of 543,500 animals.

FARMER INVENTOR DEAD

S. L. Allen, inventor and manufacturer of the famous Planet Jr. line of garden and farm implements, died at Miami, Fla., March 29. The large business which Mr. Allen developed will be continued without interruption by his former associates.

PROMINENT MARYLAND FARMER DIES

Albert B. Twining, prominent corn grower, leading dairyman and progressive farmer of Harford County, Md., died of pneumonia, April 3. Mr. Twining bred and developed a strain of corn that has been a big winner at the National Corn Shows, and a consistent winner in state shows.

FERTILIZERS IN CARLOTS

The U. S. Department of Agriculture has taken up with the fertilizer committee of the Chemical Alliance the matter of selling fertilizers to farmers, or associations of farmers, in wholesale lots at the same rate given to dealers. The committee has advised the Department that in future they will charge the same price in wholesale lots of fertilizers of not less than 30 ton carloads, or such carload unit as may be fixed by the Car Service Section of the U. S. Railroad Administration, of the same grade and quality, to individuals or associations, for cash or bankable security, as they do to merchants or dealers in the same locality or f.o.b. factory.

Eggs White Leghorns Chicks
Do you want the best for your foundation stock, or new blood for your flock? Then order from an Old Established Breeder. We are not a Hatchery.
Single Comb White Leghorns Only
Our prices are as low as can consistently be named under present conditions.
SPRING WATER POULTRY FARM
R. F. D. No. 1 Stockton, N. J.

Single Comb White Leghorns Exclusively
BARRON STRAIN 3000 breeders on free farm range, inoculated and free from lice. Special bred for Winter eggs with records up to 274 eggs. Now booking orders for eggs and baby chicks, April & May delivery, capacity 10 to 12,000 chicks weekly. Order well in advance this year, as demand will exceed the supply. My book, Profits in Poultry Keeping Solved, free with all $10 orders. Circulars Free. Edgar Briggs, Box 99, Pleasant Valley, N. Y.

CHICKS that pay
Well hatched, well bred, from best heavy-egg strains of Reds, Rocks, Wyandottes, Leghorns, etc. FREE BOOK tells how to make more money from Poultry.
W. F. HILLPOT, Box 28, Frenchtown, N. J.

DAY-OLD CHICKS
of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.
GOSHEN POULTRY FARMS, R 23 Goshen, Indiana

DAY OLD CHICKS
250,000 for 1918. $10.00 per 100 and up. Pure bred hatched right. Strong guarantee. 10 leading varieties. Hatching eggs. Western Branch, Augusta, Kansas. Free Catalog. Stamps appreciated.
HUBER'S RELIABLE HATCHERY
332 West Fremont Street, Fostoria, Ohio.

Baby Chicks S. C. White Leghorns. $12.50 per 100. Circular.
R. S. GOOD, PEACH BOTTOM, PA.

Tiffany's Superior Chicks Silver Laced, White and Columbian Wyandottes, S. C. R. I. Reds. Barron's Leghorns, Pekin, Rouen and Indian Runner Ducklings.
ALDHAM POULTRY FARM, R. 39, Phoenixville, Pa.

CHICKS S. C. W. Leghorns from vigorous business bred hens that have lop combs, long bodies, deep egg baskets. The profitable kind. Get our prices.
GUY A. LEADER, Rt. 2 York, Pa.

Over 100 White Holland Turkeys FOR SALE
Hens weighing ten and eighteen lbs., $5 to $10; toms, sixteen to twenty-five lbs., $8 to $15. Satisfaction guaranteed. H. W. ANDERSON, Stewartstown, Pa.

Selby Service Satisfies Ship us your produce, poultry and eggs, Penna. Potatoes a specialty. Returns day goods are sold. Ask for our market letter.
SELBY PRODUCE CO., PHILADELPHIA

EGGS Black and White Langshans, Light & Dark Brahmas, Barred Columbian and Partridge Plymouth Rock, Partridge and Columbian Wyandottes, Pekin Ducks. 15 for $1.50 prepaid.
M. H. MYERS, EDOM, VA.

PARADISE POULTRY FARM S. C. White Leghorns & Rhode Island Reds Breeding of heavy laying Poultry. Trap Nested Buff Ply. Rocks, 200-Egg Strain. Day-old chicks. Hatching Eggs and Stock for Sale. Our 1918 Circular Free. Box B, PARADISE, PA.

Turkey Eggs strictly fresh from large selected M. Bronze, B. Red, W. Holland and Narragansett. 9 for $3.25; 15 for $5.25 by mail or Express prepaid. Safe arrival guaranteed. Orders filled promptly. N. M. Caldwell, Jacobsburg, Ohio.

S. C. White Leghorns Tom Barron Strain of heavy layers. Send for catalog giving prices and description of choice breeding stock, baby chicks and eggs. Ivywood Poultry Farm, Box 71A, Avondale, Chester Co., Pa.

Eggs--Baby Chicks Single comb white Leghorns, trap-nested stock, heavy laying strain. Cat. on inquiry. Book orders early because big demands and shortage of stock. Riverdale Poultry Farm, F. E. McAllister, Prop., Cortland, N. Y.

65,000 Chicks for 1918. Of the laying kind that pay. S. C. White and Brown Leghorns, Barred Plymouth Rocks and broiler chicks. Catalogue Free. Cyclone Hatchery, Millerstown, Pa.

R. C. REDS Bred to Lay. Blue Ribbon winners at Leading Shows. Eggs, $1.50 for 15; $8.50 for 100.
CATALPA POULTRY FARM, GETTYSBURG, PA.

S. C. White Leghorn baby chicks, Tom Barron Strain, 12 to 15c each, according to season. The world's greatest layers.
C. P. SHIREY, STEWARTSTOWN, PA.

S. C. R. I. Reds Eggs $8 per 100; $1.50—15. Healthy vigorous utility hens—no pullets.
E. R. JOHNSON. Center Bridge, Pa.

Chicks, Rocks & Reds $15 per hundred. Leghorn $14. Each week delivery. E. R. HUMMER & CO., Frenchtown, N. J.

60 Breeds chickens, ducks, geese, turkeys, guineas, bantams, Hares, Collie and Fox-terrier puppies. Stock and Eggs. Exceptional fine cat. free. Write for yours now. Edwin A. Souder, Telford, Pa.

Wanted Toulous and other Breeds of Geese
Good quality stock. Advise quantity, age and average weight. Macniff Horticultural Co., 52-56 Vesey St., New York.

For Sale Chicks, 20 varieties. 529 Hamilton Street. Write Desk E,
NORTH SIDE POULTRY CO., Allentown, Pa.

Baby Chicks S. C. White Leghorns, price right. Order now for spring and summer delivery. Howard G. Allen, New Park, Pa.

CHICKS S. C. W. Leghorns, 11c. Money refunded for dead chicks. Cir. free. W. A. Lauver, McAlisterville, Pa.

Hatching Eggs S. C. White and Buff Orpington and Black Minorcas. 15 for $1.50; 50 for $3.50. Postpaid. W. J. Widney, Doylesburg, Pa.

EGGS-13-$1; 30-$2; Thoroughbred Rocks, Wyandottes, Reds, Leghorns, Hamburgs. 19 varieties, 36th year. Catalog. S. K. MOHR, Coopersburg, Pa.

Eggs for hatching. White Turkeys, Moscovy, Mallard, Pekin Duck, Rocks, Wyandottes, Leghorns. Free Circular. B. F. Kahler, Hughesville, Pa.

EGGS Barred Rocks (pullets mating) Sicilian Buttercups and Anconas from $2.00 up per 15.
J. K. Cadwallader, Wellsville, Penna.

Extensive Cat. free Varieties fine poultry, turkeys, geese, ducks, guineas, bantams, hares, dogs, pigeons, eggs, stock. Pioneer Farm, Telford, Pa.

Thoroughbred Poultry Best 20 varieties. Eggs 15, $1.00; 40, $2.50 up. Cat. free. H. K. Mohr, Quakertown, Pa.

Barred Rocks "Ringlets" S. C. Reds, Owen Farms eggs $2 per 15; $3.50 per 30. Fred G. Keller, Millersport, Ohio

Barron White Leghorn Eggs. Selected breeders. Free range. Males dams 272 Egg record. $1 per 13, $6 per 100 prepaid. Wm. D. Seidel, Strawberry Ridge, Pa.

Swine

Greystone Berkshires
Spring pigs either sex, pairs and trios not akin from large mature sows of best breeding. Twenty-five sows in our herd. Write for circular giving further description and prices. It's free.
GREYSTONE FARM, Summersville, W. Va.

O. I. C. SWINE Big Type, Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants.
CRANDELL & SON, Box 53, Cass City, Mich.

Reg. P. Chinas, Berkshires, C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry.
P. F. HAMILTON, COCHRANVILLE, PA.

"HAMPSHIRES"
Any age. Free circular. Also bulls from accredited herd, registered Guernseys.
LOCUST LAWN FARM,
Box 2, Bird-in-Hand, Pa.

Penns Valley Berkshires are the large prolific kind. Write for our price list of young boars and open gilts.
W. F. RISHEL, CENTRE HALL, PA.

Poland Chinas Registered and cholera immunized. Sired by or bred to half-ton boars from dams that weigh up to 800 lbs.
E. ROWELL, Jr. SCOTTSBURG, VA.

O. I. C's. BIG TYPE, bred gilts April & May farrow. 30 Aug. & Sept. Boar pigs priced to sell in next 30 days.
G. P. ANDREWS, Dansville, Mich.

Wanted Small pigs, six or seven weeks old. Highest prices paid for live poultry, heavy breeds of hens preferred. H. C. TILLEY, Rye, N. Y.

O. I. C. PIGS Silver Strain. Special prepaid prices. Address
GEO. F. GRIFFIE, R. 3. NEWVILLE, PA.

Berkshires by Lady Longfellows Champion 4th. For farmer or breeder. Circular White Leghorns. G. D. Barnes, Grove City, Pa.

Reg. Chester Whites big type. Guernsey Calves. Write your wants. MOSES EABY, Landenberg, Pa.

O. I. C. & C. W. pigs, shipped C. O. D. Sired by and out of champions. Mischief 2d weight 500 lbs. at 12 mos.
S. L. RHODES, VERSAILLES, OHIO.

O.I.C.& Chester White Spring pigs ready soon. Satisfaction & safe delivery guar.
JOHN L. VAN HORN, TROY, PENNA.

REG. BERKSHIRE pigs for sale cheap next sixty days.
W. J. McCONNELL, OXFORD, PENNA.

Large Berkshire Swine Registered High Grade. Prices reasonable. Write!
HOME FARM, CENTER VALLEY, PA.

Big Type Poland Chinas Choice spring pigs and fall gilts. R. H. LYLE, CADIZ, OHIO

Shiner's Purebred Jersey Red Pigs, 4 to 6 weeks. Prices right.
KARL D. SHINER, TOWANDA, PA.

Reg. O. I. C.'s Big Type. Spring Pigs ready soon. Write
B. H. RUTLEDGE, Rt. 3 HONESDALE, PA.

Durocs choice Sept. boars and gilts. Will breed gilts for Aug. & Sept. Spring pigs either sex.
IRA D. JACKSON R. 10, VAN WERT, OHIO

Miscellaneous

PERCHERON STALLION
No. 125175, for sale. Foaled April 19, 1910.
ELIZABETH FARMS, R. F. D.
Lititz, Lancaster Co., Pa.

TWO BLACK PERCHERON STALLIONS, 5 years old, one 1,800, one 2,000 lbs. Registered in P. S. of A. One large Spanish Jack, 6 years old.
I. A. STEPHENS, Claysville, Penna.

JACKS FOR SALE By
W. C. WHITE. COUDERSPORT, PENNA.

PLEASE say: "I saw your adv. in Pennsylvania Farmer."

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Farm Implements. Everything you need to make your farm a success. See pages 908 to 929

$6.40 Semi-Folding Go-Cart

75A1383 Go-Cart. Good grade imitation black leather; all steel black frame. Reclining back, deep adjustable foot well; cushion rubber tired 10-inch wheels. Makes bed 36x13½ inches. Shipping wt., about 33 lbs. Price.... $6.40

$9.65 Solid Oak Dining Room Table

95A1107 Solid Oak Dining Table, high gloss golden oak finish. 8-inch turned pedestal; shaped legs. Round top, 42 in.; 6-foot length. Represents wonderful saving at our price. Shipping weight, about 120 lbs. Shipped from New York or North Carolina. For other designs and sizes see pages 676 to 678. Price.... $9.65

See "Your Bargain Book" for Other Dining Room Furniture

$10.25 Barrel Spray Pump

719A824 Eclipse model. Very easy to operate and may be attached to any strong barrel. Fitted with brass cylinder, brass ball valve, brass valve seats; nothing to corrode or rust. Double paddle agitator; 5 feet of three-ply hose and Vermorel nozzle. Shipping weight, about 45 pounds. Price.... $10.25

$14.25 Washing Machine

927A2370 Maynard High Speed Model. White cedar tub bound with heavy hoops; large flat rim flywheel; lever-manipulated dolly, with flat, smooth, heavy pegs. Washer has corrugated sides and bottom. Dimensions: 21⅜ in. at top; 22⅞ in. at bottom; 12¼ inches high. Shipping weight, 100 pounds. Price.... $14.25

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72A4537	32x3½	16	16.15	72A4509	34x4	22	24.50

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Practical Facts in Growing Legumes

Factors that Influence the Growth of These Valuable Crops.

By C. M. CUMMINGS, Penna.

The practical experience of hundreds of years led farmers to believe that leguminous crops (clover, alfalfa, beans, etc.) possess some peculiar power in making succeeding crops grow more luxuriantly. We can now explain why legumes are of such value. It can be easily demonstrated that a soil, after producing a leguminous crop, contains considerable more nitrogen than before.

If we carefully remove from the soil the roots of a vigorous alfalfa, red clover, or other leguminous plant we shall find attached to the younger roots nodular masses called tubercles which vary in size and shape. In red clover roots they are quite small, while on the soybean they may be as large as peas. These ball-like masses have been found to contain millions of very minute, rod-shaped bodies — bacteria — called Bacillus radicicola, which are responsible for the power which legumes have of taking nitrogen from the air and fixing it in the soil. Hellriegel, a German chemist, in 1886 proved this very nicely. First he planted peas in pots filled with sterile soil. They would germinate readily enough but usually they soon died. He then took 40 pots and filled them with sterilized soil; but 10 of these he wet with leachings from a fertile soil. In these 10 pots the peas did well, but 28 out of the remaining 30 died. He found root nodules on the plants that lived and concluded that the nodules were necessary for growth.

Conditions for Growth

The process of taking nitrogen from the air and fixing it in the soil is termed nitrogen fixation and the organisms concerned are commonly referred to as nitrogen-fixing bacteria. In order that we may favor as much as possible the growth of the root nodules it is essential that we know something of the requirements for the growth of nitrogen-fixing bacteria living in such relation with legumes:

(a) Moisture. — Legume bacteria are no exception to the rule that micro-organisms must have moisture to thrive. Too wet soils, however, are just as detrimental as dry soils, and should be treated accordingly. An optimum moisture content in the former case may be secured by proper drainage while dry soils generally need a liberal application of stable manure or green crops plowed under in order to increase their moisture-holding capacity.

(b) Food.—If all other conditions are favorable for the growth of legumes the matter of food for legume bacteria will take care of itself as leguminous plants and nodule bacteria live in symbiotic relationship; that is, the bacteria depend on their host the legume for carbohydrates and use atmospheric nitrogen in their protein making.

(c) Oxygen.—A compact or wet soil is certain to result disastrously to the formation of root nodules on legumes because air is excluded. Nitrogen-fixing bacteria must have oxygen, inasmuch as they belong to the aerobic group. This oxygen is obtained from the air in well-aerated soils.

(d) Suitable Temperature.—The activity of legume bacteria is greatest between 64.5 and 79 degrees Fahrenheit (18 and 26 degrees Centigrade) altho nitrogen-fixation takes place many times more rapidly at the latter than at the former temperature. Besides excluding air, wet soils are cold soils, being very slow to warm up in the spring; another reason why clover fails on land containing excessive moisture.

Will They Grow? Only a Germination Test Will Tell

(e) Non-acid Condition.—Some soil tends to weaken or destroy legume bacteria altho some species of these organisms are much more resistant to an acid condition than others. Experiments have shown that certain legumes have a high lime requirement while others may do well where lime is slightly deficient or even decidedly lacking. This does not mean that the plants in any case do best in acid soils, but may do fairly well under such conditions. A grouping of the more common legumes might be made as follows: (1) High in lime requirement—Alfalfa, red clover, sweet clover. (2) Low or somewhat deficient in lime—Field beans, soy beans, vetches, peas, white clover, alsike clover. (3) Soil may be very deficient—Cow peas, Japan clover, burr clover.

Alsike clover, since it comes in the second group, will often succeed where alfalfa and red clover utterly fail. This is one reason why alsike clover is so often seeded with red clover in a seed mixture.

How can the farmer best treat his soil so that the activity of nitrogen-fixing legume bacteria will be augmented and the successful growing of leguminous plants insured? The cardinal factors may be considered under three heads:

I—Organic Matter

As is the case with other crops, legumes should have a reasonable supply of organic matter either in the form of green crops plowed under or stable manure. The benefits derived from such additions are manifold. Decomposing organic matter is not only a direct but also an indirect source of plant food, because it helps to make available some of the insoluble mineral plant food of the soil, notably potassium and phosphorus, both of which are essential plant-food elements. Moreover, the value of green manures and stable manure as indirect fertilizers or soil amendments cannot be overestimated. In the slow decay of these materials a dark, inert, complex substance is produced which brings about the best possible physical condition of a soil, increasing the moisture-holding capacity of sandy soils and making heavy soils, or clay soils, less compact. Above all, a granular structure results which is conducive to the best possible degree or aeration and moisture conditions for the growth of legumes. In other words, organic matter highly favors the growth of legume bacteria and the leguminous plants themselves by supplying necessary food both directly and indirectly, by producing optimum aeration and by regulating the supply of moisture. It should not be inferred, however, that green manures or stable manure can in any way correct the moisture conditions in wet soils as here the only remedy is suitable drainage.

Legumes vary a great deal in organic matter requirements as they do in their demand for lime, and may be grouped as follows: (a) Legumes that will grow on poor soils—Beans, field peas, alsike clover, burr clover. (b) Legumes requiring better soils — Red clover, sweet clover,

(Continued on page 4.)

Fundamentals of Corn Growing-II

Getting Moisture Into The Soil

Corn gets what it takes from the soil in liquid form and, therefore, there must be moisture to spare. The actual number of inches of rainfall on a given field, however, is not alone a safe guide, especially in drouthy regions, as much depends on the amount of water that is stored at different seasons. It has been estimated that a rainfall of 10 inches will be sufficient to produce a 50-bushel yield of corn, provided none of it escaped except thru the plants. Even weeds, however, can not take over every bit of moisture and it is impossible under field conditions to prevent losses.

The ease with which soils take in, retain, or lose moisture depends mostly on their texture, physical condition, and surface slope they point out. It is to the extent that cultivation can modify these factors that more water can be made available to the growing crop.

There are loose, open soils thru which water pours as thru a sieve, and there are tight, gumbo soils, which swell when the surface is moistened and become practically waterproof. Sandy soils take in water more readily than heavier soils; hence, less precaution is necessary to prevent run-off.

The greatest loss may be from seepage to depths beyond the plant roots. Manure and decaying vegetable matter check seepage and improve soils of this character. As corn roots penetrate 3 to even 6 feet deep, larger yields of corn are frequently raised on sandy soils in semi-arid regions than on surrounding hard soils.

The heavy, hard, or close-textured soils require the most cultivation to keep them in proper condition so as to prevent moisture loss from run-off and evaporation. Unless the surface is kept broken or somewhat rough, but little water will be absorbed during hard rains and a greater loss will occur from evaporation. To maintain the surface soil in proper condition, cultivation is necessary soon after heavy rains. If cultivation is too frequent, however, so that the surface becomes too fine, moisture can not penetrate readily and blowing of the soil is likely to occur.

It is of great importance that moisture be made to penetrate several feet below the surface. In most soils this penetration is slow, and during hot, dry weather surface evaporation is great. Surface moisture can not penetrate a frozen soil. Summer and fall precipitation has time to penetrate several feet deep and be in a position to support a growing crop the next summer. While it is seldom advisable to waste a whole summer in storing moisture for a corn crop the next year, it is advisable to begin storing soil moisture as soon as the preceding crop will permit. Almost anything is preferable to leaving the land idle and bare. The ideal seed bed for a good corn crop in semi-arid regions is one with a loose, coarse surface and a subsoil well filled with moisture to a depth of several feet.

Preparing Land for Planting

As lack of moisture, more than anything else, limits corn yields in drouthy regions, the first question regulating each operation should be, "What will be its effect upon the soil moisture supply?"

The authorities state that while summer fallow frequently results in greater yields of corn, the practice has not proved practicable. They, therefore, advise beginning the preparation of land to prevent loss of moisture and to put the surface into condition to receive moisture as soon as the preceding crop will permit. Cultivation after the removal of the preceding crop is profitable if it stops or prevents a growth of weeds. But if the growing season is past, dead weeds may catch more snow than would be caught by a cultivated surface.

Fall disking, or listing, is usually beneficial in putting the land in better condition to prevent the soil from blowing, to hold the snow, and to prevent run-off. The penetration of moisture is slow, and when rains occur evaporation is rapid from hard soil surfaces, such as usually follow the growing of small grain. The chances of storing moisture are increased by loosening such compact surfaces as early as possible. Whether plowing is necessary, however, depends very much upon the type of soil. Most heavy clay soils are best put in proper condition by plowing.

Shoveling Over Grain after Applying Formaldehyde

Sandy or light loam soils should not be plowed in the fall and left bare during the winter in regions where soil blowing is likely to occur. If, however, it becomes advisable to plow such soils in the fall, blowing of the plowed area may be checked by top-dressing with barnyard manure.

Deep plowing should always be done in the fall or very early in the spring, to allow more moisture to penetrate and the soil to settle before planting time. On sloping land the plowing, listing, planting, and cultivating should follow on a level along the slopes or around the hills.

Cover With Blankets for Five Hours

The moisture saved makes this a profitable practice, and very often the prevention of run-off is necessary to avoid erosion, with the loss of the richest portions of the soil.

Alfalfa land to be prepared for corn should be fallowed one year or plowed early the previous summer.

Growing plants draw large quantities of water from the soil and subsoil. All growth of weeds and volunteer grain on land to be planted to corn should be prevented.

Deep plowing and subsoiling should be done in the fall rather than at corn-planting time. Soil put in the right condition to take in moisture to a considerable depth is also open to the air and dries out rapidly. If necessary to plow in the spring for corn, the plowing should be done early and should not be deep and the ground should be packed immediately.

Oats Smut Treatment

According to careful estimates the oat crop of country in 1917 was reduced 5.26 percent or 92,382,000 bushels from smut.

This enormous amount of oats could have been saved by treating the seed at a cost of about one cent per bushel including labor. This year every bushel of oats must be saved, and in order to do this the seed must be treated with formaldehyde to kill the smut spores carried on the grain.

There are two methods which may be used. The "dry method" consists in atomizing the seed with a mixture of one pint of formaldehyde and one pint of water while the seed is being shoveled over on a clean floor. One quart of the solution is sufficient to treat fifty bushels of seed oats. When the grain has been treated cover the pile for five hours and it is then ready to drill.

This method has an advantage over the wet method in that the seed can be drilled immediately after treatment and does not have to be raked over and dried This is necessary when the seed is sprinkled with a solution of formaldehyde made of one pint formaldehyde to forty gallons of water and then covered for four to six hours after which the seed must be dried. If this second method is used it requires about forty gallons of the mixture to treat fifty to sixty bushels of oats.

Do not ask for "Formalin" at the drug store as this is a trade name used by a German drug firm and costs about two or three times as much as the American product, "Formaldehyde," which is essentially the same, being a thirty-six to forty percent solution of formaldehyde gas in water.—C. R. Orton, Pa. State College.

The Potato Crop

Never in the history of this country was potato culture of so much importance as it is today. The continuation of this war will be sure to create a general scarcity of all kinds of food stuffs, and potatoes, the best substitute for wheat, can be produced in four months while about one year is required to raise wheat ready for consumption. I believe the consumption of potatoes in the United States will double if they may be had at reasonable prices.

I see much in agricultural papers about the cultivation of the land, and the use of fertilizers necessary to raise potatoes. The best and cheapest material with which to fill the land with humus is clover, and it is almost indispensable to heavy yields of potatoes. The potato is a heavy feeder and can not be successfully raised without plenty of plant food, and clover is the most natural source. The culture of both go hand in hand and are of vast importance to the farmer.

I have experimented on many different methods of raising potatoes, and will give the result of one or two experiments. The land on this occasion was wheat stubble; had been heavily top-dressed with manure. The wheat yielded thirty-five bushels to the acre, and the clover was rank when wheat was harvested. Clover was in full bloom in September, and would have cut three tons of hay to the acre. It was plowed under in September and well dragged. By spring the clover was completely rotted. The ground was plowed about nine inches deep and was planted early in May to Late Rose and Burbank potatoes—just one acre. They were cultivated three times and hoed once. We had a fine season—plenty of rain—and potatoes were sold to a shipper in the spring for 40 cents per bushel, and got paid for 300 bushels.—W. R. McGill.

Plowing Down Green Crops

There are certain advantages and certain disadvantages which attend plowing down green crops. The advantages may be summed up as follows:

1. Improves Physical Character of Soil.—Organic matter makes heavy soils more mellow and light soils more compact. It prevents baking and creates a friable condition of the soil, making it more easily tilled and cultivated.

2. Increases Water-Holding Capacity.—Humus, derived from organic matter, is a spongy material which has the ability to hold a large amount of water for the use of plants.

3. Prevents Extremes of Soil Temperatures.—A soil containing a sufficient supply of organic matter does not respond to changes of temperature so readily as one deficient in humus. The latter warms up more slowly and retains its heat for a longer period.

4. Adds Plant-Food to Soils.—All humus materials or organic matter contain small amounts of plant-food. In the case of legumes grown to plow under, large quantities of nitrogen are added to the soil by the plants which gather it from the air.

5. Prevents Leaching of Plant-Food.—Conditions occur frequently in which all of the fertilizer applied is not used by the crop. This is often true in the case of potatoes, tomatoes and similar crops. Humus will absorb and hold a part of this plant-food in the soil for the subsequent crop. Do not infer that this is an absolute remedy against leaching. It isn't. In the case of green manure crops grown to turn under, they take up much residual plant-food and prevent it from leaching.

6. Liberates Small Quantities of Plant-Food.—All soils contain plant-food in considerable quantity in an unavailable state. The decomposition of organic matter is accomplished by the formation of small quantities of acid which help to change a small part of this plant-food to a form useable by the plant. The carbon dioxide given off by the decomposition of organic matter is absorbed by the soil water and water charged with it has a slight solvent action upon the mineral elements of the soil with which it comes in contact.

7. Supplies a Food for Bacteria.—Good soils contain millions of bacteria which feed on the products of decay of organic matter.

The disadvantages are fewer but quite as important because failure to prevent one disadvantage may mean a loss of all the advantages and the greatest care and best judgment should be exercised to ward off any such occurrence. When a crop is turned under to increase the supply of organic matter a dry season may prove injurious, especially when the plants are allowed to make a heavy growth before plowing under, in which case the soil will be found very much dryer than if the field had been plowed but left bare, or if not plowed at all. In such cases seed might fail to germinate properly, and the abundance of organic matter from the crop when plowed under would so much cut off the capillary connections with the deeper soil moisture that it would not readily become available until after the roots had penetrated below this level and undoubtedly many would perish in the attempt.

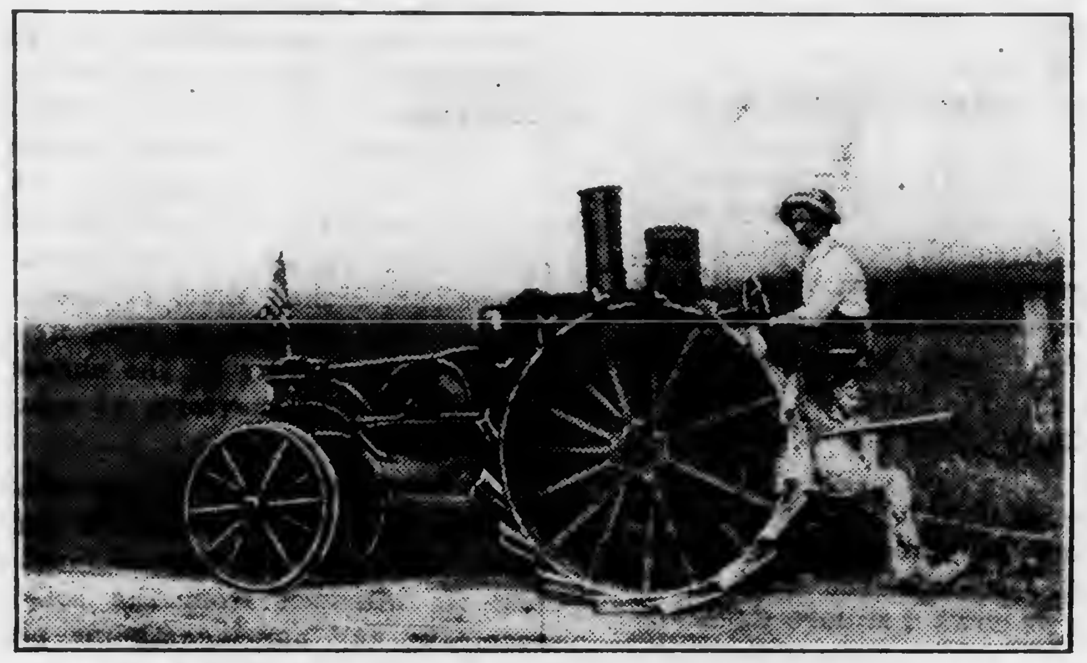
As a general spring practice it is always best to plow down green manure crops at the usual time of plowing for the crop to be planted, taking the precautions required by the conditions of soil and crop to be plowed down. Decomposition of organic matter is more rapid in light soils, such having a freer circulation of air, and a greater mass may be turned down without injury to the condition of soil; whereas, a heavy, impervious soil may be injured by the same amount.

When time is plentiful and as much organic matter as possible is desired to build up the physical condition of a soil, dangers may be avoided by thoroly chopping the crop to be plowed down with a good disk harrow and in this way more uniformly mix it with the soil and thus prevent any difficulties arising in the interference of soil moisture conditions, irrespective of weather conditions.

Corn is a crop which benefits materially from large quantities of organic matter. It is a heavy feeder with large leafage requiring vast quantities of moisture and making its greatest growth in mid-summer when bacterial activity is at its height. It is, therefore, well to secure as much growth as possible upon any crop to be plowed down for use of the succeeding crop. In such cases the use of a good disk harrow on the ground before plowing, to chop the crop to pieces, is almost a necessity and with it the crop may be allowed to make a considerable growth in order to furnish an abundance of organic matter; but in no case should it be allowed to pass the succulent stage and become hard and woody because such material does not decompose readily and injurious results are more likely to follow. Even tho it may be thoroly chopped to pieces there may be too much to mix with the soil and it is likely to break the capillary connections with the deeper soil moisture and cut off the supply to the surface soil where it is needed by the young, growing plants.—John H. Voorhees, N. J.

TRACTOR A SUCCESS

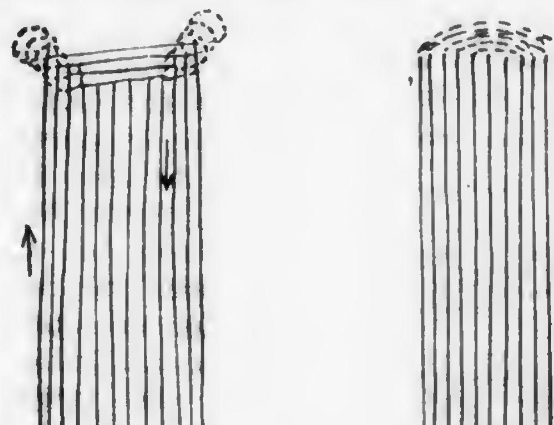
The tractor shown in the illustration is an 8-16, purchased last July. Two neighbors purchased tractors at the same time and they all came in the same car and all are working satisfactorily. I pulled the binder with mine, cutting one-fourth an acre per hour at a cost of 18 cents per acre. I also used it to draw a corn harvester, cutting 40 acres at a cost of 56 cents per acre. It is the best power for this work I ever saw. It is steady and never chokes down. I plowed 30 acres for wheat at the rate of four acres per day, costing 56 cents per acre. I can harrow with two 17-tooth harrows at a cost of 11½ cents per acre. We expect to cut down the number of horses from five to two.



Chester Bensley, Pike Co., Pa., With 8-16 Tractor

Figure 1 illustrates my way of turning when plowing. It will be seen that by turning to the left, making a loop, you are plowing across the ends and are not driving over the ground for nothing and packing it hard.

Figure 2 illustrates the plan generally recommended by tractor salesmen.—C. G. Bensley, Pike Co., Pa.



Styles of Tractor Plowing

How To Improve Seed Potatoes

Experience very often gives one a severe jolt, and nowhere more than in the attempt to improve seed. The fact is, all theories must be modified by the results of experience.

Your correspondent who urged hill selection of potatoes was on good ground, yet hill selection for yield alone does not insure any degree of uniformity in seed vitality. For many years I have been at work on this problem in a small way and while results are to some extent satisfactory the heart of the nut has not been reached. By following hill selection for years, saving only those hills which gave seven or more marketable potatoes and less than four small ones, the increase in production was marked. Then came the next step, that of unit breeding—the use of single potatoes of equal weight, and as near alike in shape as possible, cut into the same number of pieces, each potato planted by itself, and the whole to receive the same treatment. The outcome was a yield varying from 4¾ lbs. to 16½ lbs. A further loss was caused by failure of some pieces to germinate, tho each carried at least one healthy eye and swollen sprout when planted. This variation and loss, extended over an acre, would seriously affect one's pocket-book.

This year the potatoes from the best producing hills of 1916 were selected, the same rule for weight and type being observed. Outside conditions prevented growth everywhere and the total yield was at the rate of only 200 bushels per acre, but the variation continued altogether too great, some potatoes producing just twice as much as others. My seed the past season was eight-ounce specimens cut into seven pieces. If this suggests anything it is the importance of more systematic selection of seed on the part of individual growers thru careful breeding for type and uniformity of production.

The field is open for the man to do for himself what no other can do for him. Unit breeding calls for a little time in preparing the seed and planting each potato by itself. Beyond this and the separate harvesting of the crop, regular steps and methods prevail. If followed a few years, it must lead to results otherwise impossible. By this system there is no danger of seed "running out". Every step leads towards improvement and uniformity, and while the end may never be reached one gets compensation all along the way. For one, I deem it unwise for growers to rely upon others for all their seed. Environment plays an important part with humans, animals and plants, and to buy seed from a general pile, gathered from many sources, cannot be the best line of practice for the farmer.

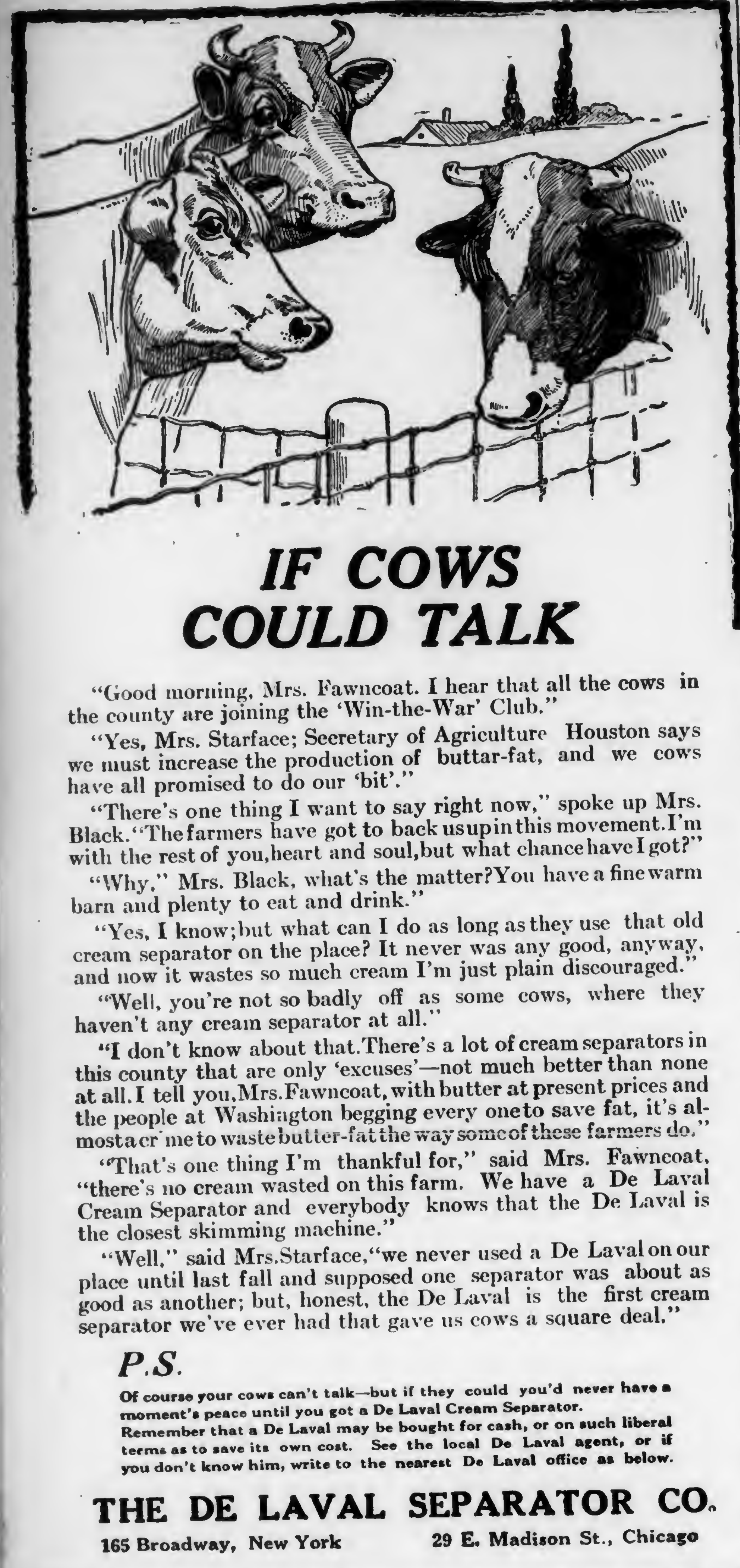
These are strenuous days and to succeed in the face of known and unknown difficulties demands more of the individual than formerly. The law of conservation holds everywhere and in no department is there greater demand for its operation than in that of selection of seed.

While gathering my yellow eyed beans for 1918 seed I found stalks varying from seven to ninety-four pods. To select from the pile, certainly would not insure what would practically be certain by selection from stalks carrying the largest number of well-filled pods. My own rule is fifty for the minimum, then if quantity is not sufficient I add another class with thirty-five or more. Brother farmers, the best is none too good and the best we must have. To get it we have to do with seed; therefore, its selection with sole reference to vitality, virility and volume becomes of the greatest importance with every farmer and grower.—G M. Twitchell, Maine.

RATE OF SEEDING CLOVER

The quantity of clover seed to use to the acre depends upon the kind of clover as well as upon the fertility of the soil. While red clover seed is generally broadcasted on frozen ground in the spring at the rate of eight to ten pounds per acre, alsike may require but seven pounds, and the small white variety only six pounds.

When timothy and red clover are seeded together, agronomists at the Ohio Experiment Station recommended six to eight pounds of the first and eight or nine of the second.



IF COWS COULD TALK

"Good morning, Mrs. Fawncoat. I hear that all the cows in the county are joining the 'Win-the-War' Club."

"Yes, Mrs. Starface; Secretary of Agriculture Houston says we must increase the production of buttar-fat, and we cows have all promised to do our 'bit'."

"There's one thing I want to say right now," spoke up Mrs. Black. "The farmers have got to back us up in this movement. I'm with the rest of you, heart and soul, but what chance have I got?"

"Why," Mrs. Black, what's the matter? You have a fine warm barn and plenty to eat and drink."

"Yes, I know; but what can I do as long as they use that old cream separator on the place? It never was any good, anyway, and now it wastes so much cream I'm just plain discouraged."

"Well, you're not so badly off as some cows, where they haven't any cream separator at all."

"I don't know about that. There's a lot of cream separators in this county that are only 'excuses'—not much better than none at all. I tell you, Mrs. Fawncoat, with butter at present prices and the people at Washington begging every one to save fat, it's almost a crime to waste butter-fat the way some of these farmers do."

"That's one thing I'm thankful for," said Mrs. Fawncoat, "there's no cream wasted on this farm. We have a De Laval Cream Separator and everybody knows that the De Laval is the closest skimming machine."

"Well," said Mrs. Starface, "we never used a De Laval on our place until last fall and supposed one separator was about as good as another; but, honest, the De Laval is the first cream separator we've ever had that gave us cows a square deal."

P.S.

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THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

The Dairy

PRACTICAL FACTS IN GROWING LEGUMES

(Continued from page 1.)

vetches, white clover, soy beans. (c) Legume that demands a rich soil.—Alfalfa. All of the leguminous plants mentioned above will do better on productive land than on land that is impoverished, but they show varying degrees of preference.

2. Lime.—Two of our most important legumes, namely red clover and alfalfa, are almost if not quite absolute failures on soils with any degree of sourness. In the case of red clover the need of lime is often indicated when the crop, after starting vigorously in the spring, ceases to thrive and finally disappears either in whole or in part. The presence of sorrel where clover fails is an almost sure indication that the soil is acid in reaction.

A very simple test which may be employed is known as the litmus test. Blue litmus paper which can be purchased at any drug store is applied to the soil and indicates a lack of lime by turning red. Altho this test cannot be relied upon in every case it has the advantage of being simple, rapid and generally useful.

The form of lime to use depends upon the individual conditions attending each farmer, such as cost, character of the soil (whether light or heavy), kind of crop, rapidity of action desired, fineness of division, etc. Calcium, which is the base commonly employed in correcting acid soils, may be used in the form of limestone, slaked lime, or unslaked lime. The amount of lime needed is governed largely by the character of the soil and the form of calcium used.

3. Inoculation.—It is evident, of course, that if the necessary organisms are absent the legume must get all its nitrogen from the soil the same as any non-leguminous plant. Fortunately, however, the desired bacteria are generally present. Especially is this true when the crop to be grown is clover and the region is northern or eastern United States where clovers have been raised more or less for many decades. Since, however, the bacteria for one kind of legume will not thrive on any other (except in few cases) when a new legume is tried, soil inoculation becomes a practical consideration. Nitrogen-fixing bacteria from the soybean will not inoculate alfalfa, nor are those from alfalfa useful in inoculating clover. On the other hand, the bacteria from all true clovers are interchangeable.

Inoculation may be accomplished by either of two methods, both of which have proved very satisfactory. The first consists in taking from 200 to 500 pounds of top soil from land where the particular crop has been known to grow well, spreading it over the new field toward night or on a cloudy day, and immediately harrowing in. Care should be taken to keep this natural culture from drying out and to protect it from direct sunlight. The sun's rays act as a very strong bactericide. The second method of inoculation employs pure cultures which can be obtained from some experiment stations with full directions for use.

Several investigations have been made to determine the amount of nitrogen fixed per acre per year by various leguminous crops. It has been shown that under the most favorable conditions the amount added may run as high as 200 pounds per acre, while under less favorable conditions one may add only 50 pounds or less.

Soil Returns

Variations in growth will naturally occur with seasonal conditions, the kind of legume (whether annual or biennial) and the productivity of the soil. Soils of normal productivity stimulate the growth of root nodules and consequent nitrogen-fixation to a far greater extent than soils that are in a high state of cultivation. In the latter case the legume takes its nitrogen from the soil and does not depend on bacteria to gather its nitrogen from the air. According to the most reliable data, the air furnishes about two-thirds of the nitrogen in leguminous crops grown on soils of fair productive power. From data secured by the Illinois Experiment Station it has been computed that on normal soils the amount of nitrogen added per acre by a 25-bushel crop of soybeans with 2½ tons of straw is 106 pounds; by a 4-ton clover crop, 106 pounds, and by a 1-ton alfalfa crop, 132 pounds.

Ten years' results of a field experiment at the Experimental Farms, Ottawa, Canada, are also of interest. In this experiment a light, sandy loam with a sandy sub-soil was planted to clover continuously, being re-seeded every two years. The clover was cut and allowed to accumulate on the land. The yearly gain of nitrogen was 50 pounds per acre. From two to three times that amount was added but it was found that all but 50 pounds was lost in natural ways, such as leaching and dissipation by bacteria.

In view of the present high cost of nitrogen in commercial fertilizers and the possibility of utilizing to a greater extent than heretofore the unlimited reserve supply of nitrogen in the atmosphere, besides cutting down the bill for high-protein concentrates, the eastern farmer should consider seriously the growing of more legumes, especially red and alsike clovers.

Timothy should never be grown alone but should always include red or alsike clover, or both, depending on the number of years in the rotation. Mixed hay is superior, even for horses. No rotation is complete which does not include a legume. On all stock farms there should be a well-planned rotation of crops such as corn, followed by wheat, oats or barley, and this in turn by a leguminous crop, preferably clover, grown either alone or with timothy.

Whenever an attempt to secure a good stand of clover fails conditions should be studied intelligently, the cause determined and remedial steps taken accordingly. The failure of the crop may be due to one or a combination of conditions, such as soil acidity, insufficient phosphorus or potassium, lack of organic matter accompanied by poor physical condition, poor drainage, compact subsoil, unfavorable season, absence of the required type of nitrogen-fixing bacteria, or to certain diseases. More often, however, "clover sickness" is due to lack of lime and phosphate and possibly potash.

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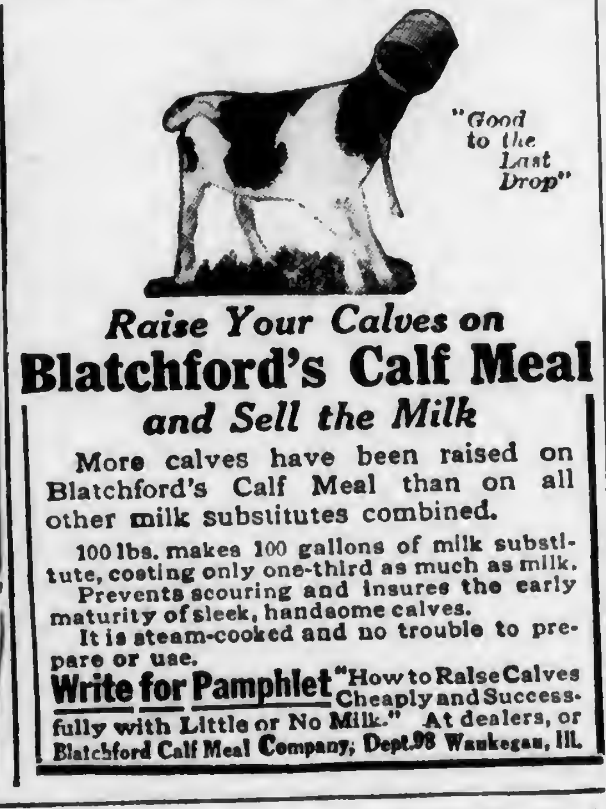
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MILK DEVELOPMENTS IN NEW YORK STATE

St. Lawrence County dairymen, representing the second largest dairy section of the state, have voted to slaughter a percentage of their dairies to reduce the supply of milk to the point of demand. This is drastic action, inasmuch as the present surplus of milk is temporary, and the fact that when the demand again becomes normal, as it must in time, there will be an insufficient number of cows to meet it. The number of heifer calves being raised in this county is only 45 percent of normal, and with the lowered April prices fewer than ever are being raised as future milk producers.

Dr. Eugene H. Porter, Commissioner of Foods and Markets of New York City, has protested the retail price of milk at 14 cents a quart as unjust and as holding down the demand for milk. Retail prices remain the same for April milk, while farmers get only $2.50 per cwt. for 3 percent milk in the 150-mile zone, or 60 to 70 cents less than last month. Bran has gone to $52 a ton, and Unicorn feed, a standard dairy feed here, has raised from $60 a ton last month to $66 a ton this month. But the League is considered to have done remarkably well in its conflict with the dealers in the repeated conferences held of late and with the federal milk commission in that the agreement was held to a one-price system for all farmers and that the eastern condensaries and factories will be kept open, when the owners were determined to close them for at least three months and make up only western or New England milk which is cheaper.

Dealers and manufacturers were determined on a two-price system; one for liquid milk, and for condensaries, etc. As it is, the creameries of remote sections have had $1 less per 100 lbs. of milk than League prices since last October and must continue to get the reduced prices so long as cheese and butter prices remain at present points. One average farmer with 20 cows reports a loss of $390.60 for October, November and December milk on milk sold at $1 less per 100 lbs. than League prices. When it is remembered that dairymen have proved beyond doubt that League prices for these months were less than cost of production, is it any wonder that herd owners are selling out and slaughtering their animals?—F.

NEW NATIONAL DAIRY ASSOCIATION

By unanimous vote of the stockholders of the National Dairy Show Association, that body has passed out of existence and is succeeded by the new National Dairy Association. The new Association is described as a combination of the old Association plus a decade of experience which has inevitably led to the need of a wider and more comprehensive field of endeavor than could possibly have been anticipated by the founders of the original Association.

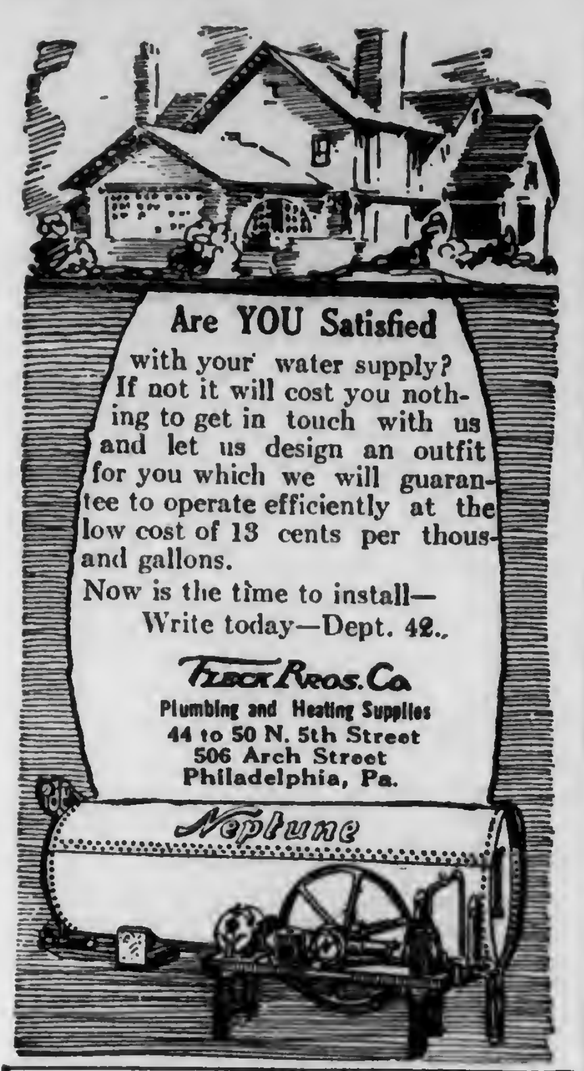
The National Dairy Association has been organized as a non-profit sharing corporation, the purposes and objects of which are: To advance and promote the dairy industry and the cause of dairying by educational, promotive and demonstration means and work, as well as by the holding of exhibitions and shows of dairy cattle, dairy and farm equipment and machinery and all products of the dairy industry as well as any and all things connected therewith; also to co-operate with other dairy associations or organizations for the development and promotion of the dairy industry and all of its allied industries. To promote and encourage the making of dairy products from milk and cream, as well as their use and consumption in cooking and for food, and generally do all things incidental to or relating to the purposes and objects above enumerated. Also to acquire and hold real estate by purchase or lease for actual use in carrying on any and all of the above specified purposes. That the show may at some time have a permanent home of its own, it is desired to create a fund for purchase of land and erection of buildings.

With the assurance that every dollar earned or secured thru an increase in membership will be held securely for the advancement of the industry, the Executive Committee sincerely hopes that every man engaged in any branch of dairying will become a life member of the new Association (life membership, $50) and actively participate in building up a strong patriotic organization for the industry that will put it before the world as a united concrete association of men who have faith in the future and a sound belief in the magnitude and importance of their labors. Blank applications and complete information may be secured thru the General Office, 130 North Wells Street, Chicago.

DAIRY FEED PRICES

The following table gives the prices reported the first week of April on the various dairy feeds named in the markets noted. The data was gathered by the Secretary of the Inter-State Milk Producers' Association, and the summary is of interest in showing the range of prices on the same feeds in different markets, the scarcity of feeds that have been regarded as staples in the past and the general high average.

Town	Hominy	Gluten	Brewer's Grains	Wheat Bran	Cottonseed Meal	Linseed Meal	Corn & Cob Meal	Ear Corn
Wycombe, Pa. ..	$73	$63	$70	$52	(36%)$73	$65	00	$40
Malvern, Pa. ...	67	59	66	00	(20%) 47	60	00	41
Concordville, Pa.	68	64	69	00	(38.62%)65	66	54	36
Easton, Pa.	00	66	00	52	60	69	56	38.60
Toughkenamon, ".	66	60	65	00	00	00	00	00
Strasburg, Pa. ..	00	00	70	00	00	65	72.50	00
Lebanon, Pa. ...	00	60	00	40 to 50	53	62.50	00	41
Woodstown, N. J.	00	58	64	00	60	62	70	38
Mifflin, Pa.	00	65	00	35	58	58	56	35
Columbus, N. J. .	63	60	70	00	61	61	00	40
Bridgeton, N. J. .	60	60	60	60	62	62	60	42
Carlisle, Pa.	00	00	00	00	00	65	00	35
West Grove, Pa. .	68	60	00	45	00	00	00	32
Average	66.43	61.35	66.75	48.17		63.23	61.42	38



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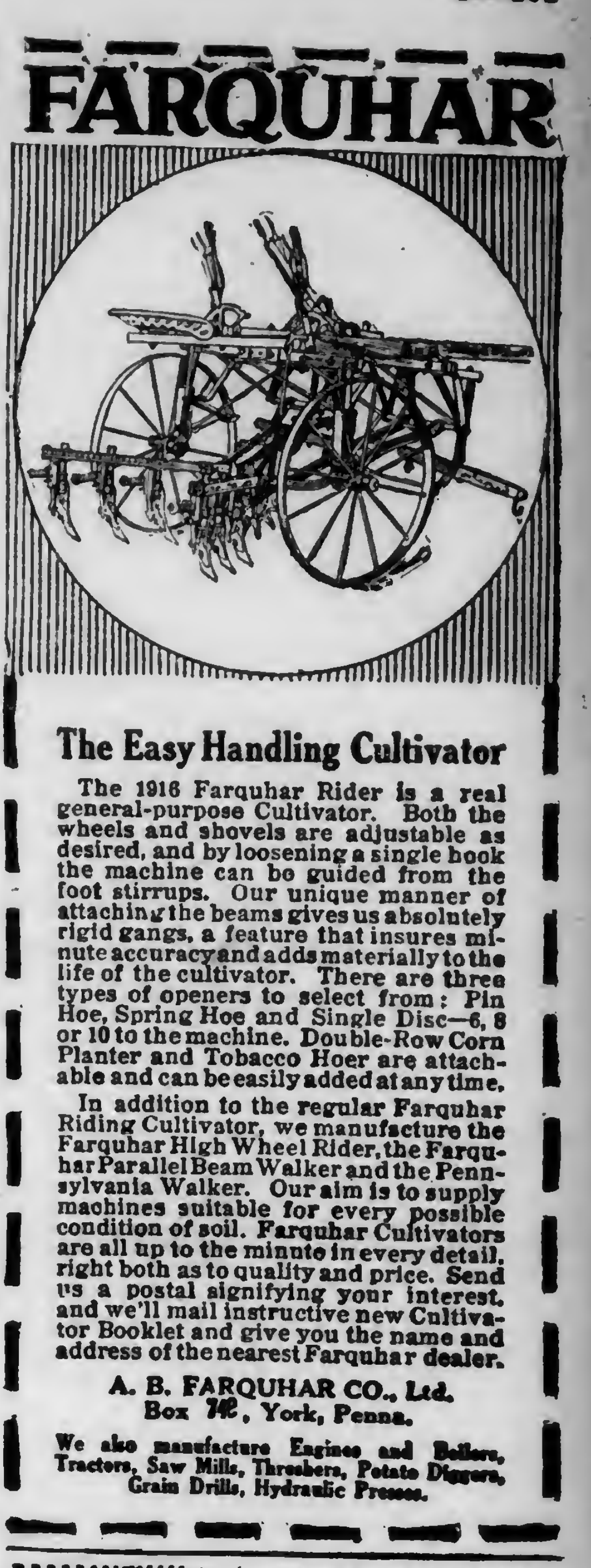

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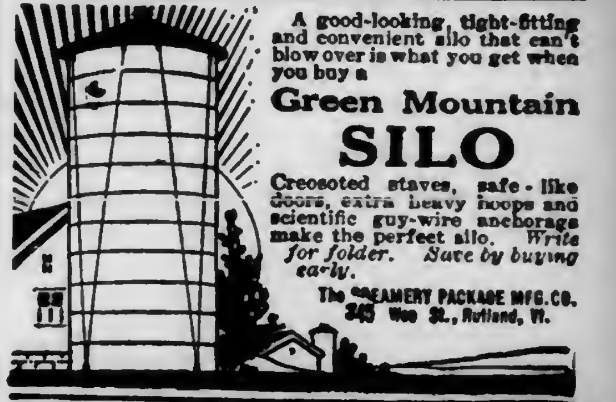

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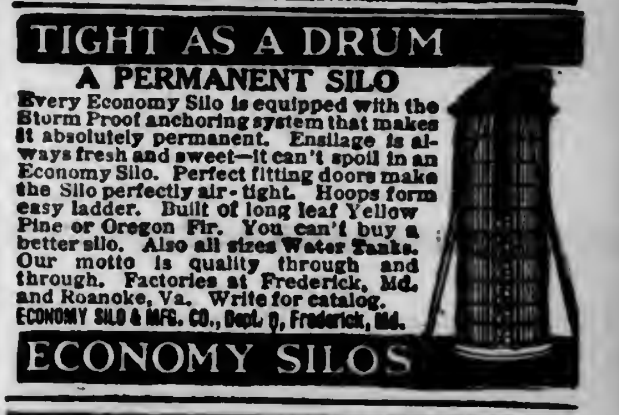

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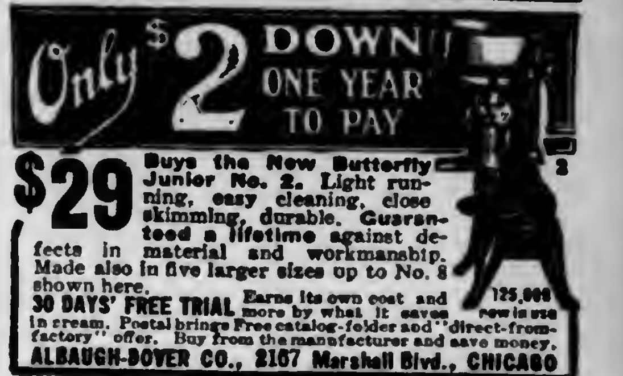

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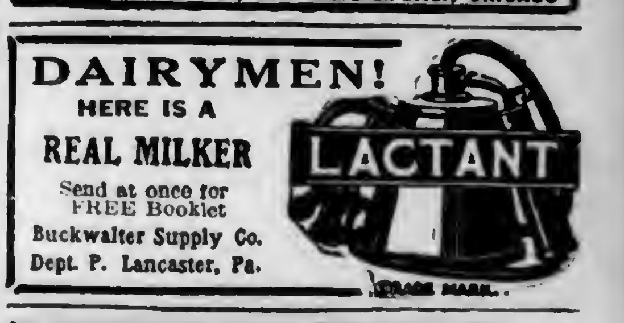

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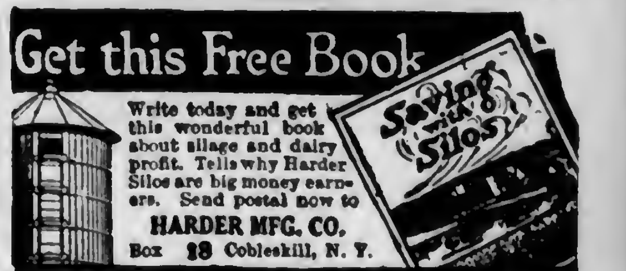

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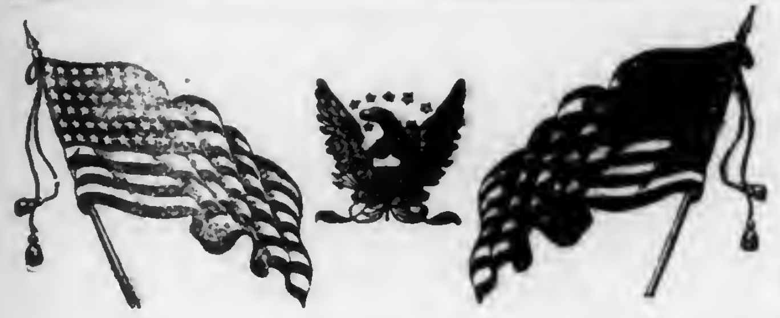

Farmers Buy Bonds It is to be hoped that records in the present Liberty Loan drive will be kept in such a way as to show approximately, at least, the proportion of bonds taken by farmers. There is much loose talk on how this or that class of citizens is responding to the calls of the government. Most of this is without foundation, and in the absence of reliable figures cannot be contradicted. Occasionally the statement of some irresponsible individual gets into the public prints making ugly assertions to the effect that farmers are not doing their full share. These assertions are passed along because they cannot be disproved, and are finally accepted by people whose opinions and influence is worth while. Letters coming to us from farmers indicate that they are taking Liberty Bonds as freely as any other class of citizens. Their financial condition may not permit them to show as large aggregate subscriptions, but we are convinced that they are buying to a point of personal sacrifice that is exceeded by none and equaled by few.

We have before us a few sample letters. One says: "We have completed our third Liberty Loan canvass, and tonight every human being in our school district (including infants) is named as a contributor to the Liberty loans, the Red Cross or the Y. M. C. A." Another says: "Our county oversubscribed its Liberty Loan allotment the first week of the drive, and we haven't a city or large town in it." This from a farm mother who has a son in France: "I know you will be glad to know that we have taken some more Liberty Bonds. We took all we thought we could afford the first two issues, but we decided that we could sacrifice somewhere and take $200 in the third issue. It will mean sacrificing until 'it hurts' many times this summer, but we will manage." Another says: "Six farmers in our section whose gross income per year is scarcely $1,500, have taken $3,000 in the third Liberty Loan."

In the face of such reports it makes our blood boil to hear some nincompoop spout about the lack of support in rural sections. Let us have more reports.

* * *

Poultry Order Rescinded Announcement is made by the Federal Food Administration that the now-famous Hen Rule No. 14 has been rescinded and that all restrictions on sale of hens and pullets were raised on April 20. The rescinding order is in compliance with the recommendation of the Farmers' Advisory Committee. It is announced that the rule had accomplished all that was expected of it and hence was no longer needed. Poultrymen will agree that it is no longer needed, but they have evidence that it accomplished much more than was ever expected. So long as the rule is rescinded, one excuse is as good as another, but it is to be hoped that the Administration will profit by this mistake and avoid others like it in the future. This experiment should dispose for all time of the fool suggestion to prohibit the sale of young chicks, calves, heifers and any other live stock. It should further demonstrate that unreasonable regulation which serves only to shake the confidence of the producers in the wisdom and integrity of the regulating body is a most dangerous expediency.

Farmers have carried the burden of the old hen flock during the past two months. They held their stock while storage houses have been unloading their supplies. The farmers have contributed enough. If they sell off in large quantities at once, they will contribute more in helping depress the market prices. It may be expected that prices will fall, but they may be saved to a degree by wise selling for the next several weeks. Where the excess poultry can be kept cheaply on range it will be well to hold for a short time at least before selling.

TEXAS CITIZENS ON HONOR ROLL

The citizens of Grimes County, Texas, are on the wheatless honor roll. According to a telegram received by the U. S. Food Administration, March 30, they will use no more wheat flour until after next harvest. These patriots have already turned over to the Government at cost, one car of wheat flour and will deliver others now in transit. These cars have been directed to an Atlantic port by the Wheat Export Company and the Food Administration for immediate shipment to the Allies.

Feed Prices The table on page 5 of this issue illustrates the chaotic condition of the dairy feed market. The spread in prices reported from different sections on the same kind and grade of goods demonstrates the failure of control efforts up to the present time. The complete absence of staple feeds from many of the markets reflects even a more serious condition. We know that there is a serious shortage in supply of some feeds, but the lack of other feeds is due as much to uncertainty of possible regulation as to scarcity. Dairymen have not only suffered from unrestricted prices on feeds available but their supply has been decreased by a curtailed movement of feeds that should be available. We were promised that feed prices would be controlled as effectually as the wheat market. The promise scared the feed dealers and did not help the dairymen. We are still promised that the markets will be controlled as soon as satisfactory regulations can be drawn. It is important that these regulations be completed and given wide publicity as early as possible. Dairymen will not need feeds in large quantities thru the summer months but the manufacturers and the local dealers upon whom the dairymen must depend for their winter's supply must know the conditions under which they must operate. They must know what regulations are to be in force next winter before they can arrange for their supply in the fall. The uncertainty that prevailed thru all of last winter must be removed or there will be little feed available at any price another winter.

In anticipation of government regulation the dairymen must be prepared for one of two things: Either they must prepare to buy in larger quantities direct and buy earlier, or they must continue to buy thru local dealers. If they use the local dealers they must expect to pay such margins as will enable the dealers to make reasonable profits. The government regulations will no doubt fix the margins that may be charged by the dealers and handlers, and if the supply for eastern dairymen is to be maintained thru the ordinary channels, those margins must be liberal enough to encourage handling in unrestricted quantities. In the meantime there is great inducement to dairymen to buy direct so far as possible; and the wise dairyman will make sure of a regulated market. You can not feed cows on promises.

Farmers' Representatives Considerable interest attaches to the report of the recent conference of the Farmers' Advisory Committee with the Secretary of Agriculture and the Food Administrator. This committee was appointed to represent the farmers of the country and to act advisatory to the Federal officials in shaping and directing the government's agricultural and marketing activities. The first conference continued for a week, and the official report indicates that the deliberations covered a wide range of activities. The reported recommendations abound in hearty endorsements, congratulations and commendations. The committee apparently found much to commend and little to criticise. Perhaps it is not fair to judge its usefulness by this first meeting; but it is reasonable to hope that future meetings will reveal more in the nature of constructive recommendation than is shown in this first report. It may be assumed that the members were getting acquainted with the details of the varied work of the two departments, and also that they were feeling out the limits of their powers in this first meeting. With the preliminary work out of the way, they should be in a position to make their influence and counsel felt in a more constructive way in the future.

The principal recommendations made may be briefly summarized as follows: A plea for more leniency in the fixing of wheat grades for the period of the war and consideration for the changes in grain standards advocated by the farmers of the wheat states. Endorsement of the present price standards on the wheat crop of 1917 and expressed satisfaction with the price set for the wheat crop of 1918. Recommendation that the Department devise a standard system of market grading for live stock as well as for meats, and that market quotations be based on those standards. Recommended government supervision and control of the meat packing interests, but opposed government operation or ownership. Asked for more effort in educating the public to the food value of dairy products and for the adoption of more dairy products in the army ration. Asked for regulated margins in the handlings of potatoes and early efforts to perfect equipment for preservation of that crop thru the use of potato flour and dehydrated potatoes. Urged rescinding of poultry Rule No. 14 prohibiting the sale of hens. Recommended greater publicity of the conditions and reasons making necessary the acts and regulations imposed by the government agencies so that the regulations might be better understood by the producing classes. Urged both the Department of Agriculture and the Food Administration to take steps to secure for farmers the same rights and privileges in collective bargaining that is accorded other industries, and asked that farmers be not discriminated against in enforcement of general anti-trust laws. Approved general order and regulation to limit profiteering in supply and distribution of food products but insisted that the same kind and degree of regulation be extended to other trade industries.

Farmers generally will agree with all of the recommendations made, with the possible exception of those touching the wheat price question. But if the committee is to be effective it must be in position to follow up its recommendations and at least bring such pressure as may be possible under the conditions of its origin to bring about the enforcement of its suggestions. It is difficult to see how it is to accomplish this without closer connections with the departments at Washington. The original request for such a committee asked that the men be kept at Washington in continuous session and at all times in position to assist in the direction of the work. Failing in this, it would seem that the committee must at least insist that it have continuous representation at the Capitol thru an appointed representative or a smaller sub-committee to keep the remainder of the committee posted on all activities. The committee members have assumed responsibilities that will be difficult to discharge with satisfaction to the people back home unless they develop a working organization that will make them more than a resoluting body. Agriculture is not merely asking for additional opportunities to pass resolutions; it wants a voice in directing action on policies that will be mighty important in the next several years.

HARRISBURG NOTES

More Corn.—Figures coming to the Department of Agriculture indicate that farmers of Pennsylvania will go in for raising corn, rye and hay more extensively than usual and that the increase will be at the expense of wheat. In some districts farmers have announced that wheat is far less attractive than corn and that tobacco offers more than potatoes. The area in wheat this spring is estimated at over 1,450,000 acres, an increase of 75,000 acres in round numbers. It would have been larger had the labor situation been favorable, but between shortage of hands and price conditions the reports indicate that farmers are more inclined to corn. The potato situation is also reported unsatisfactory in counties where much attention has been given to that crop. In some sections the stocks have been taken off farmers' hands by grocers and the prices have been below a dollar. The acreage in potatoes last year was 308,000 without counting in the numerous "war gardens". It is estimated that there will be a decline of 10 percent in the acreage given to potatoes on farms, but the gardeners will probably more than make up for it.

The Farm Furloughs.—The plan to furlough men of the drafted army who are bona fide farmers and needed to raise foodstuffs seems to have been lost sight of in the call upon the state for more than 12,500 men to start for camps in the next two weeks. All over the state local draft boards are getting ready to forward men to camps. The plans for the farm furloughs will be announced in state bulletins and blanks will be furnished from the Capitol, but after all the man applying must satisfy his local board that he is a real farmer and is needed.

Real Political Days.—Capitol Hill is one of the most interesting places in the state just now, the state administration having apparently thrown all of its high sounding protestations of interest in the people's weal to the winds in the effort to maintain control of the state government. The lining up for the candidacy of J. Denny O'Neil for governor has been put into effect in a way that is being commented upon for vigor and vagary. Men of no political influence and of value in their positions have been thrown out for persons of doubtful political value and unfamiliarity with positions requiring training and skill. Carpenters and guides receiving less than $900 a year have been replaced because they hailed from districts where their friends were not for O'Neil. And yet $10,000 places are held open, either filled by deputies or allowed to remain vacant. The campaign has a month to go yet and predictions are that there will be many lively times between now and the close of the polls, altho the general public between the war and the food situation is really not as much interested in politics as some of the Capitol Hill folks would have the rest of us believe.

Snyder Probe On.—Auditor General Snyder, who has been studying some of the reports made upon ways and means to get a better business system at the Capitol, has called upon Mr. O'Neil to explain details of some purchases of trucks and has also asked questions regarding qualifications of some men appointed to places of those ousted. The upshot of the matter may be that the auditor general, nothing daunted at his defeat in the "recess appointments" case, may decide to invite a test of the powers of his office in which the discretion of the governor in expenditure of money allotted to him for expenses may figure. At present Mr. Snyder is probing the expenditures of many of the branches of the government, especially from contingent funds, an avenue of fruitful inquiry pointed out in the session of 1913 by some of the men now high in state administration circles, but then engaged in an effort to embarrass the Tener administration. It may be possible that should the inquiry grow that it may be referred to the next legislature.

Not Enough Funds.—The activity of the state administration in freeing turnpikes has caused a demand for the taking down of more toll gates, but the end of the fund to buy is in sight. It is likely that half a million dollars will be asked of the next legislature to complete the job. Practically all of the toll roads are in half a dozen counties within 100 miles of Philadelphia.

Plenty of Seed Corn.—According to the State Department of Agriculture there is now no lack of good seed corn for the farmers of the state and the prices are declared to be satisfactory. One of the interesting facts in connection with the seed corn situation is that men from other states came into Pennsylvania and bought thousands of bushels for general sale.

No Change Made.—Much to the surprise of every one, Governor Brumbaugh has made no change in the State Commission of Agriculture. As some prominent men who were offered places have not been appointed it is generally suspected that they passed up the chance.

Facts on Sheep.—The figures prepared by the State Department of Agriculture show that last year 3,548 sheep were killed and 2,792 injured by dogs and that $58,267 was paid in damages. There were 263,791 dogs registered and 15,856 killed.—Hamilton, Harrisburg, April 22.

NEW YORK LETTER

Bakers Organize to Save Wheat.—Each county administrator is doing his utmost to get the people to conform to the pound and a half of wheat per capita that is deemed essential for proper saving. The bakers will be carefully organized and will pledge their divulgence to other bakers of results of all experiments with substitutes for wheat.

Teachers Must Be Citizens.—Governor Whitman has signed a bill requiring all teachers of the state to be citizens of our country. Alien teachers are given one year to secure naturalization papers.

Board of Health Report. — The board of health of New York City reports that our 216,000 children of school age in the city are anaemic and sick for lack of nourishment; that they are drinking tea, coffee and beer instead of the milk they need to furnish necessary elements of growth. More than 600,000 other children are on the brink of illness for the same reason, while the number of babies needing milk is problematical, but enormous. Yet all that the city suggests to remedy conditions is that doctors visit them at public expense to tell them they are sick. If the money paid the salaries of such men were put into wholesome milk that the farmer is troubled to dispose of, both parties would be immeasurably benefited, and the future of this necessary food industry would not be imperiled as at present.

Two Highway Bills.—Two highway bills go to the governor. One prohibits the use of any truck or trailer outside of cities whose combined weight of truck and load is over ten tons. This does not apply to those heretofore registered during the period covered by registration. The other bill provides that when work under a highway contract is not being done satisfactorily the State Highway Commission may suspend work by the contractor and proceed with it under his own direction or may cancel or re-let the contract. The bill further provides for the suspension of new highway construction work, under certain conditions, upon the request of the contractor and surety, until March 1, 1919, or during the present war if it terminates earlier. The latter bill was especially needed as so much poor construction work has been foisted on the people.

New York Egg Trade Conditions.—Confusion reigns among egg dealers in New York City because of the activities of the food commission. Cars on cars of Western eggs that were bought at 37 cents sold at 33 to 34 cents. Daily receipts range from 40,000 to 57,000 cases, and the big receivers cannot sell them except in small broken lots, as a result of food rulings. Dealers report that something must be done soon or producers will suffer still lower prices. The receipts are much heavier than at this time last year, owing to the influx of Southern and Southwestern eggs that resulted from the two months ban on killing poultry. Two leading egg firms were ordered to suspend business for 30 days and to contribute sums to the Liberty Loan equal to their commissions. Undue profiteering was charged. The retail prices prevailing in rural sections this week were 33 to 34 cents.

Two Bills Aiding Farmers.—When the federal land bank act was framed it required every farmer obtaining a loan to have his title insured. Only five companies were licensed by the state to issue guarantees, all closely combined and all in New York City. When a farmer wished to insure his title they could charge any extortionate sum they wished for a simple service, since the farmer could not obtain his loan without paying their fee. A sharp fight developed in the Senate when the Walters bill permitting surety companies to insure farm titles in connection with federal land bank loans came up for a vote. Senator E. R. Brown, Republican majority leader, refused to vote on the bill or to allow it to become a party measure, and left the chamber. Senator Walters was obliged to ask for a call of the house and to have the absent members brought in and the doors locked. After a heated discussion in which there was much plain speaking about the "Title Trust" enough votes were secured to pass the bill. Under the new law surety companies will have agents in every community authorized to issue title insurance. The other bill, the Towner bill, aims to save the dairy herds by obligating the state to pay farmers $5 each for every heifer calf reared to one year of age. Prominent dairymen have urged laws protecting the dairy herds, particularly something to discourage making veal of heifer calves.

A Forecast of the Liquor Vote.—Geo. A. Glynn, chairman of the Republican State Committee, says that from reports from party leaders in the 38 cities of the state to vote this week on local option, he has every reason to believe they will go dry in almost every case. There is a heavy enrollment of women and he says a canvas of them shows that 75 per cent of them will vote to close the saloons.—F.

NEW JERSEY FARM NOTES

Farm Labor.—A personal letter has been sent to each grange in New Jersey by the Governor in which he declares that thru co-operation the serious labor shortage may be successfully met and adds that New Jersey will form a partnership with farmers in an effort to have crops harvested on time despite the conditions. He asks their co-operation with the State Department of Labor and the seven branches of the Federal-State-Municipal Employment Service and the draft machinery. The Governor urges, in order that there may be general satisfaction on the part of the help furnished by the state agencies and the furloughing of men for farm work, that the farmers agree on a standard of wages, hours of employment and maintenance conditions.

Dairymen's Association Notes. — The State Dairymen's Association has gone on record as favoring all possible measures looking toward co-operation between consumers and producers, especially at this time when the need for increased production is necessary as a patriotic activity. The association believes that the food value of milk is not sufficiently appreciated, and also that means must be taken to acquaint the consumers with the actual cost of production under the present conditions and the true food value of dairy products. The organization has pledged itself to work to meet the needs for dairy products, as far as increased cost of labor and other production materials will permit. Resolutions have been adopted reciting that producers and consumers of dairy products have a mutual interest, and that the State Board of Agriculture and the State Experiment Station be asked to co-operate with the Association in the work of studying market milk conditions so that both producers and consumers may be educated. All farmers will be urged to plant only tested corn seed, in view of the fact that the quality of seed corn this year is away below the desired percentage.

Boys Enroll.—About 10,000 school boys of the state have enrolled in the United States Boys' Working Reserve for farm service. This reserve is under the direction of the New Jersey State Department of Education and is being administered by Wesley A. O'Leary, Assistant State Commissioner of Education. Three camps, where the boys will be organized and trained for farm service, will probably be opened early in the coming month in South Jersey.

A Farm Census.—Sussex County's farm census has provided some interesting statistics of agricultural conditions in one of the typical food producing counties of New Jersey. The census was taken by the school children and schedules or returns were obtained from 570 of the 843 farms in the county. Of the number canvassed, 131 farms are in need of additional labor for the entire year, and 124 additional assistants are wanted for the entire summer. For shorter periods, 212 farms need more laborers. Dairy farms numbering 344 reported 9,068 dairy cows on hand, a gain over last year of 156; but this is more than offset by 374 cows reported for sale this year and only 110 in prospect of purchase. According to the returns, the corn crop may not be as large this year as in 1917, as 299 farms have planted or intend to plant only 4,121 acres instead of 5,073 acres last season. Potatoes will probably be planted nearly in the same proportions as heretofore, while wheat and hay show a slight drop.—L.

GUERNSEY BREEDERS MEET

The annual meeting of the American Guernsey Cattle Club will be held at the Auditorium Hotel, Michigan avenue and Congress street, Chicago, Ill., Wednesday, May 15, 1918, at 10.30 A. M. The business of the meeting will consist of: Report of the year's work of the club's office; recommendation of the Executive Committee, and election of officers. Opportunity will be given for consideration of all matters relating to the welfare of the club and its work.

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Horticulture

HOW TO USE FERTILIZERS PROFITABLY

Fertilizer should be a great benefit to the growing vegetables at all times, but if it is improperly applied it may be detrimental to germination or destroy the growing plants. To get the greatest benefit from its application, fertilizer should be distributed thru the soil so that it is most easily accessible to the roots.

Lettuce, carrots, beets and turnips get the greatest benefit from fertilizer when it is broadcasted on the plowed ground and harrowed into the soil before the seed is planted. Corn and beans should have from 250 to 600 pounds of fertilizer drilled into the soil just before planting, or at planting time. The fertilizer should be a few inches below, or to one side of the row, rather than in direct contact with the seed. Of course, if the fertilizer is spread out at least three inches below the seed, the tap roots of the seedlings will most quickly find the fertilizer and will not be burned by it, because it is spread out and is far enough away so that the roots will come to it gradually.

In applying fertilizer in the hill for cantaloupes, cucumbers, squash or lime beans, the greatest care should be exercised as these seeds are most susceptible to injury from fertilizer. Before the fertilizer is applied, a row or furrow should be made three or four inches deep. The practice of sowing fertilizer along in the row instead of in the hills is becoming more popular, but, if it is to be applied in the hill, be sure to spread it over about a foot square and cover it with at least three inches of soil before the seed is dropped. Quite frequently a small shovelful of composted manure is used in the hill with the fertilizer. In that case the fertilizer is put in first and the manure is placed on top of it, so as to further prevent the injury that might result from the fertilizer. Furthermore, if the manure is on top of the fertilizer, the manure will keep it moist during dry spells so that the roots can get the greatest benefit from the fertilizer at all times.

Some of our successful farmers advocate side dressings of fertilizer, while the crop is growing, but if fertilizer is properly applied in the beginning, it will help to develop a strong, sturdy root system right from the beginning. A plant that gets a poor start will require twice as much fertilizer as one that develops a strong root growth in the beginning. The root system can not get full benefit from the fertilizer applied along the row when the crop is half grown and part of the cost of the fertilizer will be wasted.—R. W. DeBaun, N. J.

Its a Pleasure to Remove Well-Stored Celery

MARYLAND NOTES

I always grow egg plants in pots, setting them in 2½-inch pots as soon as the first pair of true leaves develops. Then, when the small pots are well filled with roots, I shift them to 4-inch pots, and by the time the weather is warm enough to set them I have plants with leaves larger than my hand and in shape to grow right ahead as soon as the ball of earth is in the warm soil, and they never go out until the soil is warm, for I never try to toughen an egg plant as we do tomatoes, for it only stunts them.

I grow no sweet peppers except the Pimento. It is large enough for stuffing, for pickles and is far more prolific than Ruby King and Chinese Giant. Started with the early tomatoes, it starts to fruit in June and keeps at it without pause until frost stops its growth. We eat them sliced and boiled and find them very good. But I would warn the inexperienced gardener not to plant hot peppers near the sweet ones, for they will readily cross and your sweet peppers will get hot. Many years ago I grew Ruby King in rows next to Tobasco peppers, and the effect was immediately apparent, and while the Ruby Kings were not as hot as the Tobasco, they were hot. Some years later, being short of pepper plants, I bought some Ruby King plants from a large grower of plants. They were almost as hot as the Cayenne, the seed evidently having been grown near enough to be influenced by the pollen from the hot ones.

If any one wants a real hot little pepper to put in vinegar, the Tobasco will fill the bill to perfection. They are strong growers and tremendous bearers. I have had them grow six feet tall and loaded with their little, hot pods. In fact, it seems to be a rule in plant life that the smaller the fruit the more prolifically they are produced. Medium sized fruits are preferable to very small or extra large ones. The little cherry and plum-shaped tomatoes will produce many times the number that the Ponderosa makes and neither are as valuable for general use as the middle-sized ones, like Success and Stone.

Last summer I tried the Honey Dew canteloup. Hereafter, I will let other people grow them. They are too late and are simply a dead sweet, without any specially desirable flavor. I will stick to the Rocky Ford Pollocks.

I always put some tomato plants out before it is positively safe for I have found that the earlier they are gotten into the open ground, and live, the earlier the ripe tomatoes will be. There is so little difference in earliness between Bonny Best and Earliana, and the Bonny Best is so much better in quality that I depend almost entirely on it for the earliest.

Market men generally grow large eggplant fruits, as the city trade likes to get big things for its money, but these over-large fruits often have the seed grown nearly to ripeness and are far inferior to the half-grown fruits. City people know only what they see on the market and the growers and dealers try to suit them with showey things, since they buy by their eyes mainly.—W. F. Massey, Md.

TIMELY FRUIT NOTES

By Dr. J. P. STEWART

Spray Queries

Aphid Sprays from Tobacco Stems, and Formula for Lime-Sulphur

"How can I treat tobacco stalks to get spray material for the aphids?

"What formula do you advise for making lime-sulphur?" — I. J. S., Juniata Co., Pa.

All that is necessary to secure a satisfactory spray material from tobacco stems for use against aphids is to soak the proper quantity of stems in water for about 24 hours, with frequent stirring or agitation, then strain the solids out and add sufficient water to bring the solution up to the right volume.

The quantity of stems needed to make a certain volume of efficient spray evidently depends on the nicotine content of the stems at hand. This unfortunately is quite variable, being distinctly higher in the dark varieties, such as Narrow-leaf Orinoco and Burley, than in the bright or flue-cured types. With stems or whole plants of average nicotine content—about 3 percent—however, one can soak them at the rate of 1 pound of dried stems or plants to 2 gallons of water, and then dilute the solution to a total of 4 gallons of final spray.

In other words, 12½ pounds of average dried stems or dried plants can be soaked in 25 gallons of water for 24 hours with proper stirring, and then the solids can be strained out and the solution be diluted to a total of 50 gallons of spray material. The stems also have considerable value as a fertilizer after their nicotine has been removed, as they usually run from 5 to 8 percent potash, and from 3 to 5 percent of phosphoric acid.

The formula which we are now using and recommending in making concentrated lime-sulphur calls for 1 pound of high-calcium lime and 2 pounds of powdered sulphur in enough water to make one and one-third gallons of finished product. In other words, if you have a cooker holding 75 gallons or thereabouts, you could use 45 pounds of lime, 90 pounds of sulphur and sufficient water to make 60 gallons of finished product at one time. This formula gives nearly as dense a product as the older 1-2-1 formula, produces a third more concentrate, and leaves much less sediment in the cooker.

Photograph by L. A. Hiller

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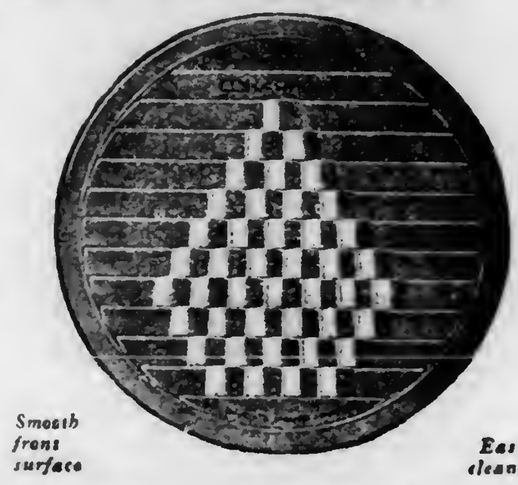

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TAPES
FOR TYING
CELERY ASPARAGUS
IN FAST COLORS
Hoffman-Corr Tape Mfg. Co.
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CABBAGE PLANTS
We have three or four Million Early Jersey and Charleston Wakefield and Succession, ready for shipment now. Prices by express only (we do not ship by parcel post) $1 for 500; $1.50 per 1000; 10,000 and over at $1.25 per 1000. Better order what you want without delay as there will not be enough to supply demand. Please send money with all orders.
S. M. GIBSON COMPANY, YONGES ISLAND, S. C.

PLANT FINN'S TREES **FOR PROFIT**

Mr. Planter if you are going to plant out an orchard this spring be on the safe side by planting my Guaranteed Trees. True to name, free from disease and packed so as to reach you in perfect condition.

	Each	10	100
See 2 yr. 6 to 7 ft. x x x Apples, Plums, Pears	$.30	$2.50	$18.00
2 Medium size 5 to 6 ft.	.25	2.00	15.00
Sweet & sour cherries xxx 6 to 7 ft.	.35	3.00	24.00
Quinces xxx 4 to 6 ft.	.30	2.50	22.50
Medium size 3 to 4 ft.	.25	2.00	18.00
Peaches 1 yr. 5 to 6 ft.	.20	1.80	12.00
" 4 to 5 ft.	.15	1.35	9.00

Send for Free Price List of our leading varieties of small fruits and ornamentals.
John W. Finn's Wholesale Nurseries,
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Alfalfa
Cow Peas
Soy Beans
Also Main-Grown Seed Potatoes—Seed Oats—Clovers, including Alfalfa from rugged Northwest—Canada Peas—Cow Peas—Spring Grains.
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Samples Free
Hoffman's 1918 Seed Book is full of valuable hints. It is free, with samples, if you mention this paper. Write today.
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Open Field Grown, well-rooted cabbage plants. Millions now ready. Orders shipped same day received. Packed with damp moss to the root. Varieties, Charleston and Jersey Wakefield, Succession, Drumhead. Price $1.25 per thousand. Tomato plants, Colbe, Stone, Earliana, Red Rock. All open field grown. Price $2 per thousand by mail prepaid.
BRUCE WHOLESALE PLANT CO., Valdosta, Ga.

Cabbage Plants frostproof, early and late varieties. 500 $1.50, 1000 $2.50. Tomato 100 75c postpaid. Satisfaction guaranteed. Councill's Plant Farm, Franklin, Va.

SEED CORN Prosperity Yellow Dent. Carefully selected, thoroughly matured and dry, 95 per cent germination. 2 bushels $8; 1 bushel $4.50; 1-2 bushel $2.50. Bags free.
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50 varieties, including the fall-bearing. Price right. Send for free catalog.
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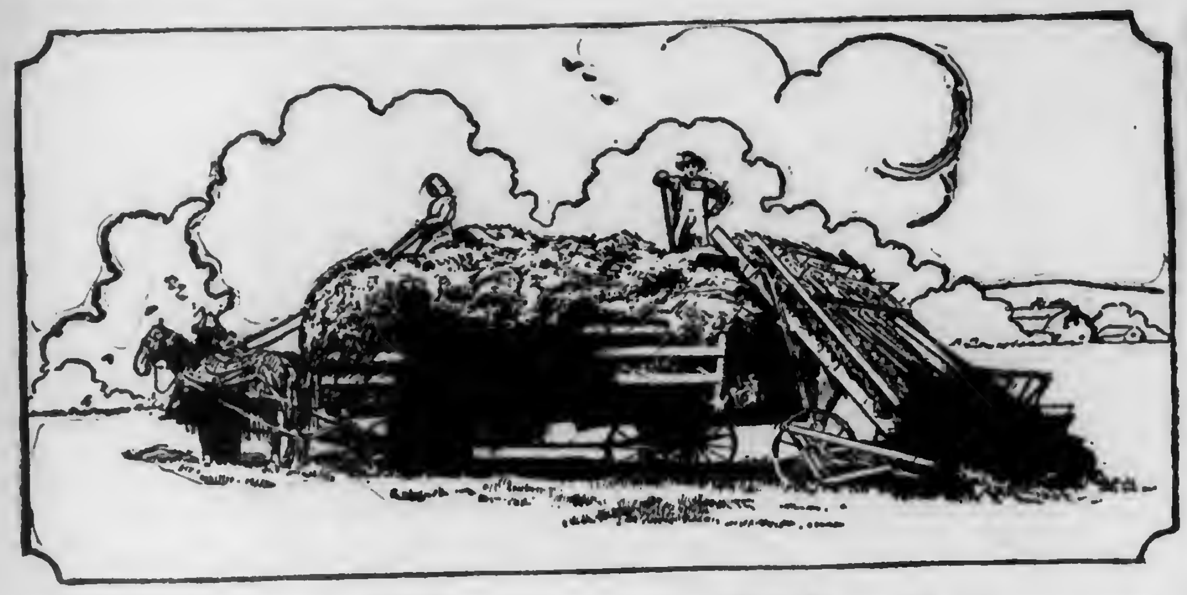
Strawberry Plants money making varieties at reasonable prices. Catalog free. BASIL PERRY, Georgetown, Del.



Moline Haying Machinery

Saves Time and Improves the Quality

WITH Moline Haying Machinery you can put your crop up in less time and with less labor than by any other method, and at the same time you will get a better quality of hay.

After your grass is cut rake it into loose, fluffy windrows with a Moline Cylinder Side Delivery Rake and Tedder. In this manner it will cure rapidly, retain its natural green color and nutritive value because it is not exposed to the direct rays of the sun in curing. In case you desire to ted the hay before putting it up you can do so by simply shifting a lever on the Moline Cylinder Side Delivery Rake and Tedder which reverses action of the cylinder.

Then straddle the windrow with a Moline Hay Loader attached to your wagon and roll on a load in the shortest possible time, avoiding the back breaking work of hand pitching. If you desire you can load just as well from the swath with a Moline Hay Loader.

Moline Hay Loaders are built in two types, gearless and cylinder. Either one of these will take care of your work.

In addition to hay loaders and side delivery rakes, we build a complete line of haying machinery including mowers, sulky rakes, sweep rakes, swinging rakes and overshot hay stackers.

The Moline Line of Harvesting and Haying Machinery is complete in every respect and no matter what your requirements may be we can supply you. Write for booklet entitled "The Moline Way of Making Hay" and name of your nearest Moline dealer. Address Department 66

MOLINE LINE
Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Salient Six Automobiles.

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Farmers! Invest in Liberty Bonds!

That is all the Government asks you to do, invest your money---not give it.

And what better investment could you make?

Morally? To eliminate once and for all "that hideous thing" which is endeavoring by brute force to strangle the freedom of liberty-loving peoples; that hideous thing that endeavors by the raping of women and the murder of children to impress its murderous doctrine of law by force. Can you sit idly by, clutching your dollars, while your sons ---our sons-- are fighting to down this thing which lusts for nothing less than the enslavement of nations?

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Manufacturer of "Nice" Paints and Varnishes
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BABY CHIX
Hatched for
5 Cents Each

Do you know that the chicks hatched by your hens cost you 22 cents each?

They do. Let us prove it to you.

We will hatch your eggs at 5c per chick hatched, and for less if you get a poor hatch.

We furnish container for eggs to be sent us and boxes for your chicks. Both sent parcel post.

Our Capacity---Two-thirds of a Million or

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We also sell purebred Barred Rock, White Rock, White Leghorn, Brown Leghorn, Buff Leghorn, White Wyandotte, Rhode Island Red, Black Minorca and Ancona chicks. Lowest Prices. Safe Delivery and Satisfaction guaranteed. Send for Catalog.

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Fruit and Poultry Farm Widow Must Sell
Ideal 20-acre one-man place, in high state cultivation. Only ten minutes drive to depot, one hour to Phila. Nice lot of apples, pears, plums, cherries, peaches, strawberries, blackberries, grapes and asparagus. Excellent 8-room house, big porch, beautiful shade, stable, carriage house, 2 poultry houses. Price was $5000 but two sons are in army and widow makes low price $2500 and if taken soon includes fine Jersey cow, 4 pigs, horse, 200 hens, wagons, farm implements and tools. Part down. For details this and another big bargain in 20 acres for $1500 see page 24 Strout's Spring Catalogue of 384 Bargains.
E. A. STROUT FARM AGENCY,
Dept. 1765 Land Title Building, Philadelphia, Pa.

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A horse with heaves can't do its full share of work. Cure the heaves and you have a horse worth its full value in work or in money. Send today for
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($1.00 per package). Satisfactory results or money back. Fleming's Vest-Pocket Veterinary Adviser. Helps you distinguish heaves from other ailments. Write for the Adviser. It is FREE.
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Reg. Shorthorn Cattle Young bulls and heifers.
R. H. LYLE. CADIZ, OHIO

Poultry

NATIONAL POULTRY CONGRESS

The meeting of the National Poultry Conference recently held in Chicago is pronounced one of the most representative of all phases of the poultry business in recent years. Producers, instructors, investigators and manufacturers from all parts of the country were present. The program was unique in that every question on the program was conducted as a discussion instead of being treated in a set address. Representatives of the Food Administration were present to explain regulation measures.

Individuals reporting from various states told briefly of the status of the poultry industry in their sections. Prof. Rice, of Cornell, showed tabulated results of a recent survey which showed the poultry business to be in a serious condition. Two hundred five replies were received from which it was deducted that there would be a 20 percent reduction in poultry during the year. Also, that there would be a reduction of 19 percent in eggs incubated. The replies as to increase in cost of operating gave the following averages: Feed, 71 percent; labor, 44 percent; buildings, 41 percent; equipment, 39 percent; stock, 34 percent. Decrease in the purchasing power of a dollar, replies averaged 42 percent.

One of the livest discussions of the conference waged over consideration of the ruling prohibiting the sale of hens and pullets during March and April. Universal dissatisfaction was expressed and strong resolutions condemning the ruling were adopted. Mr. Priebe, of the Food Administration, explained that it was found that 25 percent of the fowls coming would be laying and that some such action was necessary to save and conserve food. He stated that Mr. Hoover said we must think in food values and not in dollars and cents. It was urged that producers do not rush an excessive amount of poultry to market at the expiration of the time limit.

A close relation between the producer and the government agencies was strongly urged so that a more intelligent understanding concerning production, distribution and conservation might be secured. A resolution was adopted recommending that a poultryman be added to the recently appointed Farmers' Committee of Twenty-four.

The Advisory Board decided to maintain a fixed office at Washington during the period of the war. There will be a War Emergency Committee in each state to co-operate in the support of the national program. All the national poultry associations and the state poultry associations are to be officially connected with the Emergency Board and it is proposed to give as wide publicity as possible to the poultry conditions and needs thru the poultry and farm press. The War Emergency Board will probably be incorporated.

Concerning price control and regulation of distribution the following resolution was presented:

Be It Resolved: That this convention go on record as not favoring the policy of price fixing as applied to poultry products, but we do approve of regulating the machinery of transportation and distribution which we believe affords relief in supplying his necessary needs and the outlet for his product.

The Committee on Government Regulations of Prices or Profits for Distribution and Storage of poultry products reported the following resolution which together with the preceding was referred to the Advisory Board of the War Emergency Federated Poultry Industry to be used as seemed most advisable.

"Whereas; the United States Congress by enactment of the National Food Control Law, has vested in the U. S. Food Administration the authority to regulate prices and limit profits for the transportation, storage and sale of foods and feeds during the period of the war, and

Whereas; the said Food Administration has made substantial progress in this direction including licensing of dealers, manufacturers, storage and elevator concerns, and in all probability intends vigorously to continue this work, therefore be it

Resolved; that this conference, as representing in particular the poultry and egg producers of the nation, hereby approves the said licensing, also the regulations and restrictions adopted and to be adopted by said Food Administration, provided that in every case they are just and liberal, war-time conditions fully considered; also provided this liberality is such as to stimulate maximum practical production at reasonable profits rather than to retard or handicap such production, and be it further

Resolved; that this conference hereby petitions the U. S. Food Administration to lose no time, within practical limits, in extending, developing and enforcing the licensing system, particularly as to the buying, transportation, storage, and resale of poultry and poultry products, and of all feeding materials available for poultry and egg production, so that only reasonable costs shall be added to these war-time transfers from the producer to the consumer."

The poultryman who is raising grain for his birds should use all of the precautions taken by grain farmers to insure good yields. It pays to test the seed corn and treat the seed oats for smut. When raising green crops for hens, care should be taken to use good seed. Only healthy cabbage plants should be transplanted from the hotbed and they should receive thoro protection from the insect pests which reduce the cabbage yield. The feeding problem is so important in the poultry business in this day of high prices that even the professional poultryman can afford to study crop production and hire labor for that purpose if he has the available land.

In France and Belgium poultry products have been more appreciated than in this country and it is now predicted that the scarcity of meat products will cause American people to substitute poultry and eggs in their diet in the same manner as it is used by the peasants of Europe. Farmers who develop paying flocks of poultry this year should have little trouble in disposing of breeding stock. It must be remembered that egg production and meat value are going to be more valued in the future. The fancy feather has its place but the practical farmer likes to know what is beneath the feathers.

Live Stock

A MILKING STRAIN OF SHEEP

Breeders' Opinion Asked

We have our individual dairy cows selected for high milk production, and our swine breeders lay special emphasis on the large litters and good suckling qualities of their brood sows; but who among our sheep breeders has kept track of his breeding ewes that have consistently dropped two lambs and proven to be heavy milkers?

The sow only suckles her pigs six or eight weeks while the lambs as a rule run with their mother four or five months, being nourished abundantly or otherwise, depending on the milking qualities of the ewe and her care. Practical live stock men as well as students of animal nutrition realize the body-building, growth-producing power of milk. Surely there is a bright future ahead for the shepherd who will develop a heavy-milk strain of sheep of any breed.

There is room for difference of opinion as to the desirability of selecting ewes for the quality of breeding twin lambs. The Merino breeders in this county look upon twins as more of a misfortune than a benefit for our fine wool ewes. As these ewes have been bred (without regard to milking quality) they will seldom raise two good lambs and often lose both. Therefore our sheep men prefer singles to twins. With the mutton types, experience has shown that twins can be successfully raised. As all figures go to prove that the percentage of lambs raised is the chief factor in determining profit, whether with fine or medium wool, it would seem that selection of breeding ewes might well be made on the basis of twins for a mutton type and good milking quality in any breed.

Let us have the opinion of constructive breeders on this point. All indication points to a "Return of the Golden Hoof" on our eastern hill farms and we should therefore consider what qualities in the breeding flock will make for the greatest profit in the future. I predict the type where mutton and wool are developed on a 50-50 basis, and within that type from breeding flocks selected for heavy milking qualities and as producers of a large percentage of twin lambs, constitution and vigor always being kept in mind.—M., Washington Co., Pa.

BROOD SOW AND HER LITTER

No period of the year is so critical for the brood sow as the few days previous to and the few weeks after farrowing time. Extra care and attention at this time will be amply repaid. Often the entire margin of profit from hogs depends upon the number of pigs saved at farrowing time. Under average farm conditions, pigs born in April and May often get a better start than pigs farrowed in February and March, because of more favorable weather conditions and less chance of contracting ailments which result from continued close confinement.

Colony houses provide satisfactory farrowing quarters and permit free exercise of both sow and litter. A few days prior to farrowing, the sow should be placed by herself in a small run provided with the colony house. Her rations should be light and of a laxative nature. No feed should be offered the sow for 24 hours after farrowing. Plenty of drinking water is important. During the next few days the ration should be increased gradually. A good ration consists of corn, supplemented with slops of Red Dog, wheat middlings and tankage. Forage crops stimulate the milk flow and reduce the amount of grain necessary. Good feed and prompt attention in caring for the brood sow will tell.

Self-feeders containing corn and tankage may be used for the litter after they are ten days old, or for sow and litter. Blue-prints of the self-feeder will be furnished on request by the animal husbandry department of the New Jersey Experiment Station, New Brunswick, N. J.

SHEEP FOR PROFIT

We have always kept a few sheep until about six years ago when we sold our flock. About as the price began to go up again we bought a few old ones, thinking we would grow into a good-sized flock by the time the price reached such a point that they would be really profitable. But, altho we had good success with them, the price rose faster than we expected and at present we have only 13 head of ewes. All of these are good young sheep, the oldest one being three years old. We started with old sheep simply because we had an opportunity to get them at a low figure, and we knew that we could take a few old ones, get a young flock started, and get rid of the original stock before we got a flock large enough so that the old ewes would be much of a nuisance. But my advice to a beginner is first, do not buy old sheep, second, buy only a few—not over 8 or 10—and grow into the business.

Sheep need very little care as compared with cattle, but that little is just as essential. I have known a number of farmers that went into the sheep business heavily, thinking they would take care of themselves and produce a fortune soon. But they usually get out as suddenly as they get in.

One must learn the sheep business. Go among them quietly and do not allow them to be excited more than is absolutely necessary. Give them all the range possible; sheep like a change of pasture and never do better than when they can roam as they please. In winter our sheep have the run of the whole farm. We also give them the run of the threshing floor where there is plenty of seed, chaff, etc., and they will work part of the time there and the rest of the time out in the snow, and come in at night full and happy.

We shall purchase 20 or 30 more sheep this fall if we can find them at a figure that will do, but shall not pay exhorbitant prices in order to get into a large flock quickly. We live in a strictly dairy section, on a 60-acre farm, about 15 acres of which is woods. This does not give a great deal of pasturage and as the farm is a little swampy, it is not ideal, but it is fairly good and I am at least well started toward a good flock. I shall increase to 50 sheep which, with 2 cows and 3 horses, will be about the limit for our farm. Good management will be necessary to keep that much stock on so small a place.—H. C. McCormick, Chautauqua Co., N. Y.

The Farm-Labor Crisis

and My solution that will appeal to every Farmer

This year my farmer friends are asked to produce more than ever before. And they are going to do it. But they are certainly up against it for help. Hired hands are scarce, hard to get, and expensive.

That's why I'm so glad to be able to make this announcement just at this time. I have a device that makes a giant, never-tiring, never complaining hired-man of the farmer's car.

LAY Porta Power

Cheapest Belt Power in the World

It takes the wonderful power of your automobile, and gives it to you in a form that you can set to work at all the jobs around the farm. LAY Porta-Power, instantly slipped against the rear wheels of your car (any make) gives you the cheapest belt power in the world, a wonderfully satisfactory portable engine of 5-8 H. P., that costs from $100 to $250 less than any comparable gas engine.

It is all steel, and proof against wear and trouble. The Money Back Bond insures satisfaction or a refund after 30 days' trial. It pumps water, runs hay press, ensilage cutter, pea and clover huller, rice and grist mill, corn sheller, fanning mill, elevator, buzz saw, milker, separator, cider press, washing machine, pump jack, irrigating pump, sprayer, concrete mixer.

L. A. Young Industries, Inc.
Detroit, Mich., Dept. 63

FREE

Some farmers are going to get LAY Porta-Power free, as the results of my special offer to early buyers in each community. Better write me now for all the particulars, so you can be the man to profit by this offer in your locality. Ask me about my plan, to-day.

L. A. Young

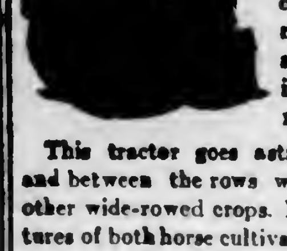
Spring is Cleaning-Up Time

The garbage can, sinks, drains, closets, cesspools, all foul-smelling and disease-breeding places need attention. Get out the sprinkling can and make a liberal use of Dr. Hess Dip and Disinfectant. Do this regularly to establish health conditions—to destroy disease germs and purify the air. There is no better way to avoid contagious diseases. Use it also about the poultry house, pig pen and stables. One gallon makes 100 gallons of disinfectant. GUARANTEED.

Dr. HESS & CLARK
Ashland Ohio

The Beeman Garden Tractor

Plows, Cultivates and Harrows



All crops grown in narrow rows—onions, beets, carrots, etc., can be cultivated three rows at a time, as fast as a man can walk, by using a three-row attachment.

This tractor goes astride narrow-rowed crops and between the rows when cultivating corn or other wide-rowed crops. It combines the best features of both horse cultivators and hand-wheel hoes, cultivating deep in the center of rows as narrow as 12 inches and shallow near the plants.

No pushing. Just steer it. A man or a boy can cultivate at top speed all day without tiring. Costs little to operate—saves time, expense and labor. The Beeman will take the place of one horse or mule in plowing, harrowing or cultivating. It will do any power work requiring up to 4 H. P., and trots from job to job on its own power.

Free illustrated booklet on request. Get your copy today.

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Our Best Offer

We will renew your subscription for five years for only $2.25. It will pay you to renew now as you will secure full credit for the entire time ordered regardless of any future advance in subscription price.

PENNSYLVANIA FARMER
261-63 S. 3rd. St., Phila., Pa.

Milking Shorthorns Bull calves bred from the best milking strains for sale; also few heifers. C. M. Kennedy & Sons, Ulster, Pa.

USE NATCO DRAIN TILE
Farm drainage demands durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned—everlasting. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO, Natco Building Tile and Natco Sewer Pipe.
National Fire Proofing Company - 1116 Fulton Building, Pittsburgh, Pa.

Feeding Our Family

What a Half-Acre Will Do

Our home is nestled on a half acre of land, and this ground makes a splendid scarecrow to frighten away the high cost of living from our table. We have plenty of potatoes to last until potatoes come again, and we use them very successfully in making bread and tea biscuits.

We plant tomato seeds in the house in March, and care for them diligently, and have the first ripe red tomatoes in the locality. By having early and late varieties we have a long season of fresh tomatoes for the table. I can all the surplus, usually over 100 quarts each season. These are delightful for a dish of hot soup in winter. My men folks say that I am a rival of the famous commercial soup canneries in making good tomato soups.

We like lima beans, too. I hardly think there is any one in New Jersey who does not. We manage to get them early and enjoy them until a killing frost comes. Then the dry ones we store for winter use, and use them alternately with the little winter beans.

Our onions are an early healthful crop. And we plant pumpkins after certain crops are matured and harvested. However, with us the Fordhook squash is largely taking the place of the big, picturesque pumpkin; these winter squash are so fine-grained and delicious that even the skin can be cooked and used in pies.

Grapes! Every one should have grapes who has a square yard of land. We have several vines, and they make a pleasant bower.

Our land is too precious to give much of it to watermelons or canteloupes, but we plant a few, and how good they do taste in the morning during their season! The watermelon rinds are all preserved, and make a very appetizing relish in winter.

We raise plenty of carrots and parsnips, with celery and parsley for flavoring and garnishing.

We have one apple tree, which gives us plenty of fresh fruit each year. It also furnishes us with plenty of jelly, sauce and vinegar. Our peach trees are natural fruit, and of course the stones cling, but what lovely yellow peaches they are for sugaring or canning. As it is not necessary to have vinegar made every year, the extra ones are dried. Last winter when sugar rations were so small these dried apples made delicious sauce with plenty of honey cooked in.

Where did we get enough honey? Our bees not only pollenize our fruits and vegetables, and thus help us grow big crops, but they store super after super of honey for household use, and besides give us pounds and pounds to sell. For home use we extract it. I use extracted honey in many ways in cooking. Here are two:

Oatflake Gems.—Mix together 1 quart of oatflakes, 1 pint wheat flour, 12 tablespoons honey, 1 pint milk (or half milk and half water), a little salt and 1 level tablespoon soda sifted into the flour.

Honey Drop Cakes.—Mix together ¾ cup honey, ¼ cup butter or lard, ½ teaspoon cinnamon, ⅛ teaspoon cloves, 1 egg, 1 cup wheat flour, 1 cup barley flour, ½ teaspoon soda sifted into the flour, 2 tablespoons water, 1 cup raisins cut into small pieces.—Mrs. Cora June Sheppard, Cumberland Co., N. J.

STEAMED HONEYCOMB PUDDINGS

From a Delaware Farm Wife

In Pennsylvania Farmer of March 30 you ask for a recipe for honeycomb steam pudding. This is a good one: Mix together in the following order ½ cup suet, 1 egg, 1 cup milk, ½ cup molasses, 2 cups sifted flour, 2 teaspoons cream of tartar, 1 teaspoon soda and 1 cup raisins. Steam one hour.—Mrs. C. L. Empet, Sussex Co., Del.

Early "Sass" from the Sheppard Garden

From a Maryland Housekeeper

Mix together 1 cup flour, ½ cup sugar and 1 teaspoon cinnamon; then add 1 cup sweet milk, 4 well-beaten eggs, and butter size of an egg (melted), and ½ pint molasses into which you have stirred 1 teaspoonful soda until it foams. Bake 30 minutes in hot oven. Serve with hard sauce, made by rubbing sugar into butter in proportion of ¼ cup butter to ½ cup sugar; add whatever flavor is desired—nutmeg makes a pleasing flavor. Pack and keep in cool place until solid.—Mrs. George W. Biles, Cecil Co., Md.

The Sheppards' Half-Acre Garden

HANDY TO REMEMBER

Before papering go over your walls with strong vinegar; this cuts the dust and neutralizes the lime, and makes the paper stick better.

In mixing plaster to fill the cracks before papering, pour water in pan first; it makes a smoother paste. To keep plaster paris from setting too quickly, use vinegar instead of water to mix it.

To take stains from marble, use muriatic acid, making it half water, applying with an old brush. Apply sweet oil on the hands before using it to prevent any burn from the acid (it makes serious burns), and be careful not to get any of the acid on your hands or clothing as it will eat holes in them.

In painting galvanized tin spouting, first go over it with strong vinegar to cut dirt and gloss so paint will stick better.

To fill small holes in your cement walks, mix Portland cement, one-third cement and two-thirds sand, and before applying wet with strong vinegar or dissolved caustic soda. Press in holes with a putty knife or small trowel.

Stings of insects are relieved by ammonia or common table salt, well rubbed in, or apply a slice of onion.

At this time when the price of shoes is high and going higher, it is well to know that castor oil will lengthen their life. Rub a teaspoonful in thoroly, by a fire. Do this when the shoes are new, and several times afterwards, and they will last twice as long.

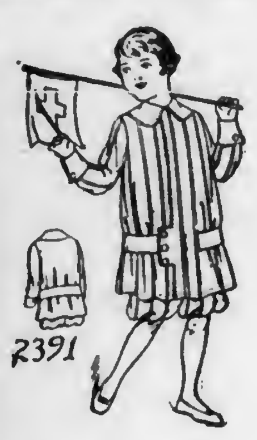
To cure a felon, take a pint of soft soap and stir in air-slaked lime until it is the consistency of glaziers' putty. Make a leather thimble, fill it with this composition and insert finger therein.—Mary S. Shuman, Juniata Co., Pa.

The Grape Bower Affords All Our Grape Needs

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

2391.—Natty Suit for Small Boy.—The trousers are finished in "knicker" syle. The belt is slipped thru openings in the fronts. This pattern is in 4 sizes: 2, 3, 4 and 6 years. Size 4 requires 3½ yards of 36-inch material. Price, 10 cents.



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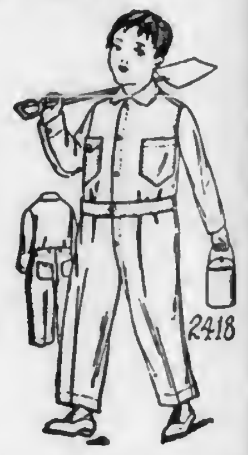
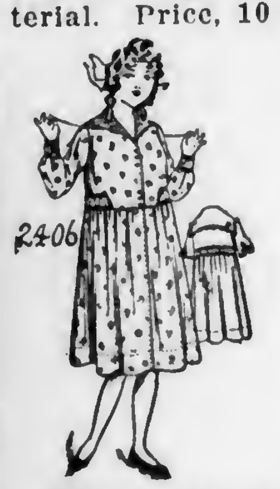


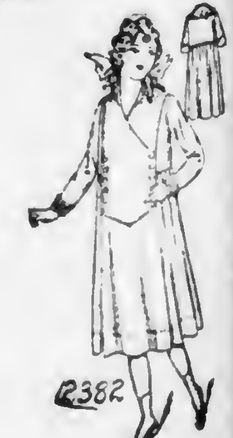
2418

2418.—Boys' Play or Work Uniform.—The trousers are cut in one with the front of the waist; at the back waist and trousers are separate. The garment is a comfortable overall model. The pattern is in 5 sizes: 4, 6, 8, 10 and 12 years. Size 10 will require 4 yards of 36-inch materials. Price, 10 cents.

2406.—Dress for Growing Girl.—The waist is shaped over the front. The skirt is straight and gathered. The long sleeve has fulness at the wrist held by narrow straps joined to the cuff. The short sleeve is shaped at its lower edge. The pattern for this pretty design is cut in 5 sizes: 6, 8, 10, 12 and 14 years. Size 12 will require 3¼ yards of 44-inch material. Price, 10 cents.



2406



2382

2382.—Isn't It Neat?—This model with left front crossing over the right at its closing is very good for wash materials, also for serge, satin and taffeta. The sleeve may be in wrist length or finished for elbow length. The pattern is in 5 sizes: 8, 10, 12, 14 and 16 years. Size 12 requires 3¾ yards of 44-inch material. Price, 10 cents.

"Lest we forget to do our part"

THEY say, who have come back from Over There, that at night the troubled earth between the lines is carpeted with pain. They say that death rides whistling in every wind, and that the very mists are charged with awful torment. They say that of all things spent and squandered there, young human life is held least dear.

It is not the pleasantest prospect for those of us who yet can feel upon our lips the pressure of our mothers' good-by kiss. But, please God, our love of life is not so prized as love of right. In this renaissance of our country's valor, we who will edge the wedge of her assault make calm acceptance of its hazards. For us the steel-swept trench, the stiffening cold, weariness, hardships, worse. For you for whom we go, you millions safe at home—what for you?

We shall need food. We shall need care. We shall need terribly and without failure supplies and equipment in a stream that is constant and never ending. From you who are our resource and reliance, who are the heart and hope of that humanity for which we smite and strive, must come these things. Buy your country's bonds. Buy them today!

(Signed) Citizen Soldier No. 258
—th District, National Draft Army.

This Space is Contributed by

Bateman Mfg. Co.,	**Grenloch, N. J.**
W. Atlee Burpee Seed Co.,	**Philadelphia, Pa.**
Philadelphia Seed Co., Inc.,	**Philadelphia, Pa.**
Stokes Seed Farms Co.,	**Philadelphia, Pa.**

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You are only *lending* not giving your money.

Your Government guarantees the return of your money with interest.

Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Potato Values Stronger

Quotations at shipping points held a very firm average range. Supply and demand were both moderate. Bad roads, the opening of spring work and the low prices all tended to check hauling. Car supply appeared generally adequate except in Michigan and Colorado producing sections. Sales of old stock to jobbers ranged $1.25@2.25 per 100 lbs., bulk in eastern markets for whites, including Green Mountains, and $1.25@1.85 for round white in all leading markets. The general range held about as last week, but ruled 5@15c higher in several markets. Carlots tended slightly higher, at $1.10@1.20 per 100 lbs. in Chicago.

Onion Markets Advanced

Old onions are selling at prevailing general ranges from 75c@$1.75 per 100 lbs. sacked. Several eastern markets made sharp advances, New York and Boston reaching $2 for good stock, and the markets improved generally, except where strong competition of new Texas stock began to appear. Shipments of old stock continued light, 70 cars, including 36 from Massachusetts and 20 from New York, but new Texaas onions are coming more freely with 203 cars compared with 83 last week. The onion requirements of the Army cantonments for May are about 10,000,100 lbs.

Cabbage in Fair Demand

The position of old cabbage was little changed, holding at $10@12 per ton to growers in western New York, with supply becoming light, and total movement of old stock only 38 cars. The distributing markets were somewhat irregular. Good New York Danish Seed ruled $35@55 per ton in most eastern markets, and showed a tendency to advance in New York, Boston, Pittsburgh and St. Louis, closing near the top.

Florida Tomatoes at Firm Values

Prices received by east coast growers followed a slightly stronger range, at $2.50@2.75 per 6-basket carrier, with fair to good demand. East coast shipments were 283 cars, a decline of 34 cars. Sales of fancy stock in northern markets ruled steady at $3@4.25 per carrier. These prices are lower than for the corresponding week of last year.

Other Vegetables and Fruits

Asparagus, South Carolina Colossal to jobbers firm at $4.50@6 per dozen and California, fancy and extra fancy ranged generally $4.25@5.50, but the best pack reached $8 in New York. Shipments, 50 cars, were two-thirds from California and one-third South Carolina. Movement so far this season is lighter from California, but heavier from South Carolina. Norfolk district Spinach sold mostly $2@2.50 per bbl. Texas was stronger, ranging 60c@$1 per bushel.

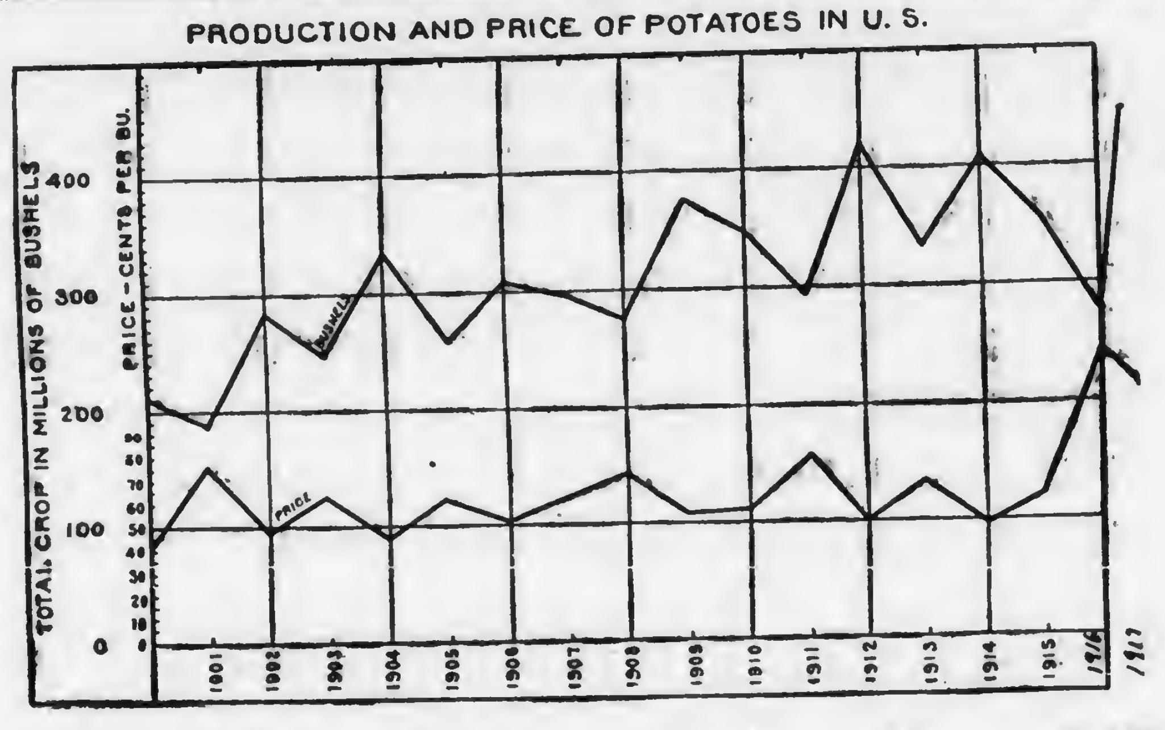
SHALL I PLANT POTATOES?

Farmers in general are considering the question as to whether they shall plant the usual acreage of potatoes this year. Advice in the affirmative has been presented heretofore on this page. Herewith is printed a table giving statistics for the past 18 pears, and an etching showing the variations in total yield and prices for the same time.

It will be noticed that the figures giving the annual acreage show a gradual but steady increase, about the same percentage of increase as has been made in population. The acreage in the second 5-year period shows an increase of a little over 10 percent, while the third 5-year period shows an increase of 16 percent over the second 5-year period. The increase of yield per acre has increased but little in the 18 years—probably less than 10 percent.

Contrary to the general impression, the figures show no great increase in acreage in a year following high prices, nor a great decrease in plantings following low prices. The most notable jump in acreage is seen in 1917, when, in spite of unheard-of prices for seed, the acreage was increased by 840,000 acres. This may be attributed to the unusual prices for the 1916 crop, to war gardens and to the urgent advice of government officials.

PRODUCTION AND PRICE OF POTATOES IN U. S.



Year	Acres 000 omitted	Bushels 000 omitted	Farm Value 000 omitted	Farm Price	Av. Yield Per Acre
1900	2,611	210,927	$90,811	$.43	80.8
1901	2,864	187,598	143,979	.76	65.5
1902	2,966	284,633	134,111	.47	96.
1903	2,917	247,128	151,638	.61	84.7
1904	3,016	332,830	156,703	.45	110.4
1905	2,997	260,741	160,821	.62	87.
1906	3,013	308,038	157,547	.51	102.2
1907	3,128	298,262	184,184	.61	95.5
1908	3,257	278,985	197,039	.70	85.7
1909	3,525	376,537	210,662	.54	106.
1910	3,720	349,032	194,566	.56	93.
1911	3,619	292,737	233,778	.80	81.
1912	3,711	420,647	212,550	.50	113.4
1913	3,688	331,525	227,903	.68	90.4
1914	3,711	409,921	199,406	.48	110.5
1915	3,761	359,103	221,104	.61	95.5
1916	3,550	285,437	417,063	1.46	80.4
1917	4,390	442,336	543,865	1.23	100.8

Next to the variation in farm price per bushel the most notable is the variation in average yield per acre. This varies from 65 bushels in 1901 to 113 bushels in 1912, reaching 100 bushels per acre but six times in 18 years. It will be seen that this variation has had a much greater influence in making the total crop as well as influencing price than has the number of acres planted.

A study of factors affecting the price of potatoes would not be complete without the figures giving the exports and imports as well, and they are presented also; reference to them will show that every time the price per bushel reached a price above the average the imports of potatoes increased. The asterisk indicates imports over exports; those without indicate exports over imports.

Observation has shown that it is the man who regularly plants any crop or produces any given commodity, year after year, who prospers most; while he who produces spasmodically nearly always is found on the losing side. The seasonal variation of weather is the unknown factor in agriculture. It is this that makes it impossible to forecast the crop and hence the price, but by all the rules of averages, the year 1918 should be a good year in which to plant potatoes, especially when adding to the normal factors the abnormal demand for food which will exist during the next year.

The statistics given herewith are from reports of the Department of Agriculture, and the prices are the average for the United States on December 1, each year.

COMMERCIAL STOCKS OF CORN

The total stocks of corn in the hands of commercial concerns on December 31, 1917, were 44 percent smaller than on the corresponding date in 1916, according to a partial tabulation of the returns from the War Emergency Food Survey made on December 31, 1917, by the United States Department of Agriculture. This refers solely to commercial stocks and does not include corn on farms. In this connection, attention is called to the commercial visible supply figures for January 5, 1918, which were approximately 50 percent smaller than those for January 6, 1917.

It is pointed out that the ratio between the commercial stocks of corn on December 31, 1917, and those for the same date in 1916 was practically the same as the ratio between the stocks on August 31, 1917, and the same date in 1916, the stocks on both dates in 1917 being about 5 percent of the stocks on the corresponding dates in 1916.

Imports and Exports of Potatoes 1900-1915

The asterisk (*) indicates imports; the figures not marked sho exports.

Year	Bushels
1900	369,572
1901	*7,127,314
1902	484,575
1903	*2,682,539
1904	982,089
1905	*947,834
1906	1,353,554
1907	799,942
1908	*7,620,315
1909	646,268
1910	2,164,903
1911	*12,497,419
1912	1,691,031
1913	*1,851,920
1914	2,864,532
1915	3,808,218

The imports exceed the exports i this period by 17,562,461 bushels.

PEACH PROSPECTS FOR 1918

Figures for 1917 based upon fin condition for that year. Report bas upon conditions the first of Apri 1918.

State	Condition 1918
New Hampshire	4
Massachusetts	4
Connecticut	4
New York	42
New Jersey	62
Pennsylvania	52
Delaware	70
Maryland	68
Virginia	72
West Virginia	80
North Carolina	58
South Carolina	88
Georgia	100
Ohio	11
Indiana	5
Illinois	5
Michigan	24
Kentucky	2
Tennessee	98

Use a good grade of oil for incubator as it will pay divide every season. There will be smoke and more heat and the la will be easier to regulate.

Among The Granges

Philadelphia and Bucks Cos., Pa.—Pomona No. 22 met in spring session at Tullytown, with several hundred patrons present. Master Samuel Foster, of Bustleton, presided. Reports from the several subordinate granges showed increase in membership and much co-operative buying. Delegates from the Pennsylvania Potato Growers' Association reported a large meeting with representatives from all parts of the state. The government men who addressed the meeting urged the raising of three times as many potatoes this year, while the farmers present asked first for a profitable market for those already grown.

Many patrons spoke of the unsatisfactory conditions today because the heads of the department of agriculture and other government officials did not seem to understand the average farmer's position in regard to labor and food production. It is hard to understand why those in authority still permit the use of large quantities of grain and sugar in manufacturing ale, beer and other intoxicants and at the same time turn to the general public and ask them to save wheat, rye and sugar. The government might expect more general co-operation from the people if they used the same principles of conservation which they advocate.

Past Master Edwin Ridge installed the new officers, the new Master being Charles A. Row; secretary, Florence Newbold; lecturer, Mary G. Wilson.

After a substantial lunch served by Delaware Valley and Penns Manor Grange the afternoon session convened at two o'clock.

It was announced that seedmen report that farmers are not buying quantities of seeds as they did last year; also, that the seedmen are charging exorbitant prices, asking in some cases as much as twenty-five dollars a pound for celery seed. It was also said that the food administration was realizing at last that it had not co-operated with the farmers and given them a fair representation in advisory boards. Today, they seem glad to listen to the farmers' point of view and to receive representatives from farm organizations.

It was voted to send a resolution o Pennsylvania state grange offerng to help support a permanent Pennsylvania grange representative t Washington, to look after the inerests of the nearly seventy thousnd grangers of the state.

"Should County School Superinendents be Elected by Popular Vote, r by the Present Method?" Edwin Ridge and Lillian Flowers both poke in favor of the present method. "What Has the Government Done to olve the Labor Problem for the armers? What Can be Done?" Valter Collins said the government an help by closing the saloons.

The government can't expect us to ompete with shipyard wages in obaining labor. The contractors in ese yards are receiving eight to ten ercent on all the money they spend, nd so they are paying four, five and ix dollars a day. Announcement at city women were planning to ork on the farms caused amuseent. County Advisor Norman Garr said that a labor agent was now duty in his office, who would assist finding help for farmers.

—M. R. Briggs.

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Facts you should know about the market for live stock and meat

In Swift & Company's 1918 Year Book. Sent FREE on request. Write for copy

THIS book presents, clearly and frankly, a study of live stock buying and meat selling—a description of the market conditions that determine the prices you get for your live stock.

It describes the producing and marketing steps from your farm to the table of the consumer. It explains also how the part played by Swift & Company enables you to obtain for your live stock the highest market figures.

The full value to you, of this part played by Swift & Company—how it affords you a ready cash market for your live stock, and how it passes along the meat products to the consumer on the lowest operating expense and profit and with highest efficiency—is shown in this book.

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CALICIDE
BORDEAU

Highest In Analysis

Save every penny put into the crop. Calicide is the best all-around spray for killing chewing insects and preventing plant diseases. It will pay you to write us immediately for convincing literature and prices.

Reading Chemical Co., Reading, Pa.

Chicks Broilers $11.50 per 100, S.C.W.Leg.and S.& R.C.Br.Leg.$12.50. R. I. Reds both combs $13.50. Brd. Rks.$14.50. Buff Rks. & Buff Orp. $16.50. Del.ParcelPost.SatisfiedCustomers-Prompt shipments. Sunny Side Poultry Farms & Hatchery, Blanchester,O.

Green Manure Pays.
Sowing cover crops between rows improves soil, saves fertilizer, prevents plant food escaping.

Eureka New Seeder
8 Feet Wide

Evenly sows clover, alfalfa, turnip, rape, timothy, rye, wheat, oats, buckwheat, etc., any quantity per acre. 17 flat teeth cover seed thoroughly and make dust mulch, leaving ground flat. Saves seed and labor. Assures good crops. Ideal cultivator. Kills weeds. In stock near you. Catalog free.

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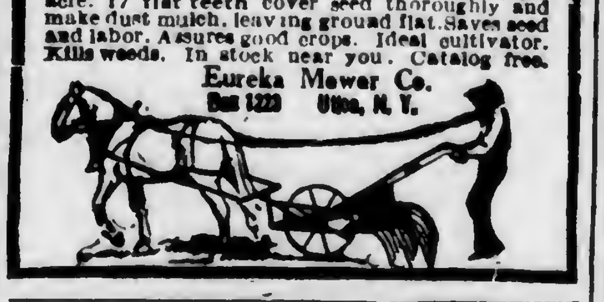

WAR NECESSITY FOR NURSES MET BY SPECIAL SUMMER CLASS

As a war measure, Mount Sinai Hospital School of Nursing is entering a special class, June 15th, 1918. Recognizing the need for additional nurses for military and civilian purposes, the Mayor's Advisory War Committee of Cleveland, and the Western Reserve University have made this Course possible the former, by supplying the funds, and the latter by offering its facilities for a ten weeks' course in theory. Students will live at the hospital which is in close proximity to the University. No tuition will be charged for the course at the University. Living expenses will be met by the Hospital. This plan offers unusual opportunities to qualified young women wishing to serve their country. Applications should be made at once to Miss C. A. Wheeler, Principal of Mount Sinai Hospital School of Nursing, 1800 East 105th Street, Cleveland, Ohio.

For Sale Ohio Ensilage Cutter 16 in., with traveling table and 40 ft. carrier. In good condition. $45. L. M. DURHAM, CORRY, PA.

Chester Whites. At present we are offering pigs from two to three months old. As fine as we ever bred. ELMER D. WHISLER NEWVILLE, PA.

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In many places a lantern or lamp is not convenient or safe—then you need a flashlight, absolutely safe—always ready—when going "down cellar" or "up garret"—when harnessing the team in the dark—when the swollen stream has carried the foot bridge away—whenever you need instant, portable light, indoors or out, you need the Dependable Electric Flashlight.

It is 6 1-2 inches long, made of metal with leatherette covering—no wires to break or fuss with—plain, simple, durable. Cannot spill, leak or smoke up the globe. The strongest wind or rain cannot blow it out. It is a friendly and safe companion in all dark places.

Given for three subscriptions to Pennsylvania Farmer to Jan. 1, 1919 at 50c each.

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261 S. Third Street Phila., Pa.

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Hearken to the call of **your** country in her hour of peril and need.

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Will you stand passive while the cry of a thousand wrongs to be righted, the shrieks of murdered men and outraged women resound with ever increasing pleads for help?

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Marvelous improvements. Extraordinary values in our 1918 price offers. *You cannot afford to buy* without getting our *latest propositions* and **Factory-Direct-to-Rider** prices and terms.
Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our *liberal terms* on a sample to introduce the new "**RANGER**".
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The Despatcher's Story

The Last Order

By Frank H. Spearman

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(Concluded from last week.)

I stared at the despatcher's record sheet.

My mouth went sticking dry. The sleet outside had deepened into a hail that beat the west glass sharper and the window shook again in the wind. I asked myself, afraid to look around, what Blackburn could be doing in Callahan's room. The horror of the wreck impending thru his mistake began to grow on me; I know what I suffered; I ask myself now what he suffered, inside, alone, in the dark.

Oh, you who lie down upon the rail at night to sleep, in a despatcher's hand, think you, ever, in your darkened berths, of the cruel responsibility on the man who in the watches of the night holds you in his keeping?

Others may blunder; others may forget; others may fall and stand again; not the despatcher; a single mistake damns him. When he falls he falls forever.

Young as I was, I realized that night the meaning of the career to which my little ambition urged me. The soldier, the officer, the general, the statesmen, the president, may make mistakes, do make mistakes, that cost a life or cost ten thousand lives. They redeem them and live honored. It is the obscure despatcher under the lamp who for a single lapse pays the penalty of eternal disgrace. I felt something of it even then, and from my boy's heart, in the face of the error, in the face of the slaughter, I pitied Blackburn.

Callahan's room door opened again and Blackburn came out of the dark. I had left the table and was standing in front of the stove. He looked at me almost eagerly; the expression of his face had completely changed. I never in my life saw such a change in so few minutes on any man's face, and, like all the rest, it alarmed me. It was not for me to speak if I had been able, and he did not. He walked straight over to the table, closed the order book, plugged Callahan's house wire again, and began calling him. The assistant superintendent answered, and Blackburn sent him just these words:

"You need not come down."

I heard Callahan reply with a question: "What is the matter?"

Blackburn stood calmly over the key, but he made no answer. Instead, he repeated only the words, "You need not come down."

Callahan, easily excitable always, was wrought up. "Blackburn," he asked over the wire, impatiently, "what in God's name is the matter?" But Blackburn only pulled the plug and cut him out, and sunk into the chair like a man wearied.

"Mr. Blackburn," I said, my heart thumping like an injector, "Mr. Blackburn?" He glanced vacantly around; seemed for the first time to see me. "Is there anything," I faltered, "I can do?"

Even if the words meant nothing, the offer must have touched him. "No, Jack," he answered quietly; "there isn't." With the words the hall door opened and Bucks, storm-beaten in his ulster, threw it wide and stood facing us both. The wind that swept in behind him blew out the lamps and left us in darkness.

"Jack, will you light up?"

It was Blackburn who spoke to me. But Bucks broke in instantly, speaking to him:

"Callahan called me over his house wire a few minutes ago, Blackburn, and told me to meet him here right away. Is anything wrong?" he asked, with anxiety restrained in his tone.

I struck a match. I was so nervous that I took hold of the hot chimney of the counter lamp and dropped it smash to the floor. No one said a word and that made me worse. I struck a second match, and a third, and with a fourth got the lamp on the despatchers' table lighted as Blackburn answered the superintendent. "Something serious has happened," he replied to Bucks. "I sent lap orders at one o'clock for Number One and the Irving Special."

Bucks stared at him.

"Instead of making a meeting-point at O'Fallon's I sent One an order to run to O'Fallon's and ordered the Special to run to Salt Rocks against One."

"Why, my God!" exclaimed Bucks, "that will bring them together in—the Peace canyon — Blackburn! — Blackburn!—Blackburn!" he cried, tearing off his storm-coat. He walked to the table, seized the order book and steadied himself with one hand on the chair; I never saw him like that. But it looked as if the horror long averted, the trouble in the Peace River canyon, had come. The sleet tore at the old depot like a wolf, and with the sash shivering, Bucks turned like an executioner on his subordinate.

"What have you done to meet it?" He drew his watch, and his words came sharp as doom. "Where's your wreckers? Where's your relief? What have you done? What are you doing? Nothing? Why don't you speak? Will you kill two trainloads of people without an effort to do anything?"

His voice rang absolute terror to me; I looked toward Blackburn perfectly helpless.

"Bucks, there will be no wreck," he answered steadily.

"Be no wreck!" thundered Bucks, towering in the dingy room dark as the sweep of the wind. "Be no wreck? Two passenger trains meet in hell and be no wreck? Are you crazy?"

The despatcher's hands clutched at the table. "No," he persisted steadily, "I am not crazy, Bucks. Don't make me so. I tell you there will not be a wreck."

Bucks, uncertain with amazement, stared at him again.

"Blackburn, if you're sane I don't know what you mean. Don't stand there like that. Do you know what you have done?" The superintendent advanced toward him as he spoke; there was a trace of pity in his words that seemed to open Blackburn's pent heart more than all the bitterness.

"Bucks," he struggled, putting out a hand toward his chief, "I am sure of what I say. There will be no wreck. When I saw what I had done—knew it was too late to undo it—I begged God that my hands might not be stained with their blood." Sweat oozed from the wretched man's forehead. Every word wrung its head of agony. "I was answered," he exclaimed with a strange confidence, "there will be no wreck. I cannot see what will happen. I do not know what; but there will be no wreck, believe me or not—it is so."

His steadfast manner staggered the superintendent. I could imagine what he was debating as he looked at Blackburn — wondering, maybe, ether the man's mind was gone. cks was staggered; he looked it, as he collected himself to speak in the hall door opened like an canny thing, and we all started Callahan burst in on us.

"What's so?" he echoed. "What's here? What did it mean, Black- n? There's been trouble hasn't re? What's the matter with you ? Bucks? Is everybody struck mb?"

Bucks spoke. "There's a lap order t on One and the theatrical Spe- l, Callahan. We don't know what's ppened," said Bucks sullenly. lackburn here has gone crazy—or knows—somehow—there won't any wreck," added the superin- dent slowly and bewilderedly. 's between O'Fallon's and Salt cks somewhere. Callahan, take the ," he cried of a sudden. "There's all now. Despatcher! Don't speak; no questions. Get that message," exclaimed sharply, pointing to instrument. "It may be news."

And it was news: News from Ames tion reporting the Irving Special at 1.52 A. M.—out at 1.54! We heard it together, or it might not e been believed. The Irving Spe- l, eastbound, safely past Number e, westbound, on a single track en their meeting orders had lap- ! Past without a word of dan- or of accident, or even that they seen Number One and stopped in e to avoid a collision? Exactly; a word; nothing. In at 52; out 54. And the actors hard asleep the berths—and on about its iness the Irving Special—that's at we got from Ames.

Callahan looked around. "Gentle- n, what does this mean? Some- y here is insane. I don't know ether its me or you, Blackburn. you horsing me?" he exclaimed, sing his voice angrily. "If you , I want to say I consider it a nned shabby joke."

Bucks put up a hand and without word of comment repeated Black- n's story just as the despatcher told it. "In any event there's thing to do now; its on us or we're t it. Let us wait for Number One report."

There was nothing for it but to wait Rosebud to hear from Number e. When the night operator there led the despatcher again it ught Blackburn out of his gloom e a thunderclap.

"Give me the key!" he exclaimed. here is Rosebud." Callahan pushed k and Blackburn, dropping into chair, took the message from the ht operator at Rosebud.

"Number One, in, 2.03 A. M."

Blackburn answered him, and angely, with all the easy confi- ce of his ordinary sending. He and took and sent like one in master of the situation.

"Ask Engineer Sampson to come the wire," said he to Rosebud. mpson, not Maje, but his brother old, was pulling Number One t night.

"Engineer Sampson here," came m Rosebud presently.

"Ask Sampson where he met Spe- l 202 to-night."

We waited, wrought up, for in t reply must come the answer to the mystery. There was a hitch the other end of the wire; then sebud answered:

"Sampson says he will tell you all out it in the morning."

"That will not do," tapped the patcher "This is Blackburn. erintendent Bucks and Callahan are here. They want the facts. Where did you meet Special 202?"

There was another wearing delay. When the answer came it was slowly, at the engineer's dictation.

"My orders were to hold at O'Fallon's for Special 202," clicked the sounder, repeating the engineer's halting statement. "When we cleared Salt Rocks siding and got down among the Quakers, I was cutting along pretty hard to make the buttes across the river. It startled canyon when I saw, or thought I saw, a headlight flash between the me, for I knew the 202 Special could not be very far west of us. Anyway, I made a quick stop, and reversed and backed tight as I could make it for Salt Rocks siding. Before we had got a mile I saw the headlight again, and I knew the 202 was against our order. We got into the clear just as the Special went by humming. Nobody but our train crew and my fireman knows anything about this."

The three men in front of me made no comment as they looked at each other. How was it possible for one train to have seen the headlight of another among the buttes of the Peace River country?

It was—possible. Just possible. But to figure once in how many times a vista would have opened for a single second so one engineer could see the light of another would stagger a multiplying machine. Chance? Well, yes, perhaps. But there were no suggestions of that nature that night under the despatcher's lamp at the Wickiup, with the storm driving down the pass as it drove that night; and yet at Peace River, where the clouds never rested, that night was clear. Blackburn, getting up, steadied himself on his feet.

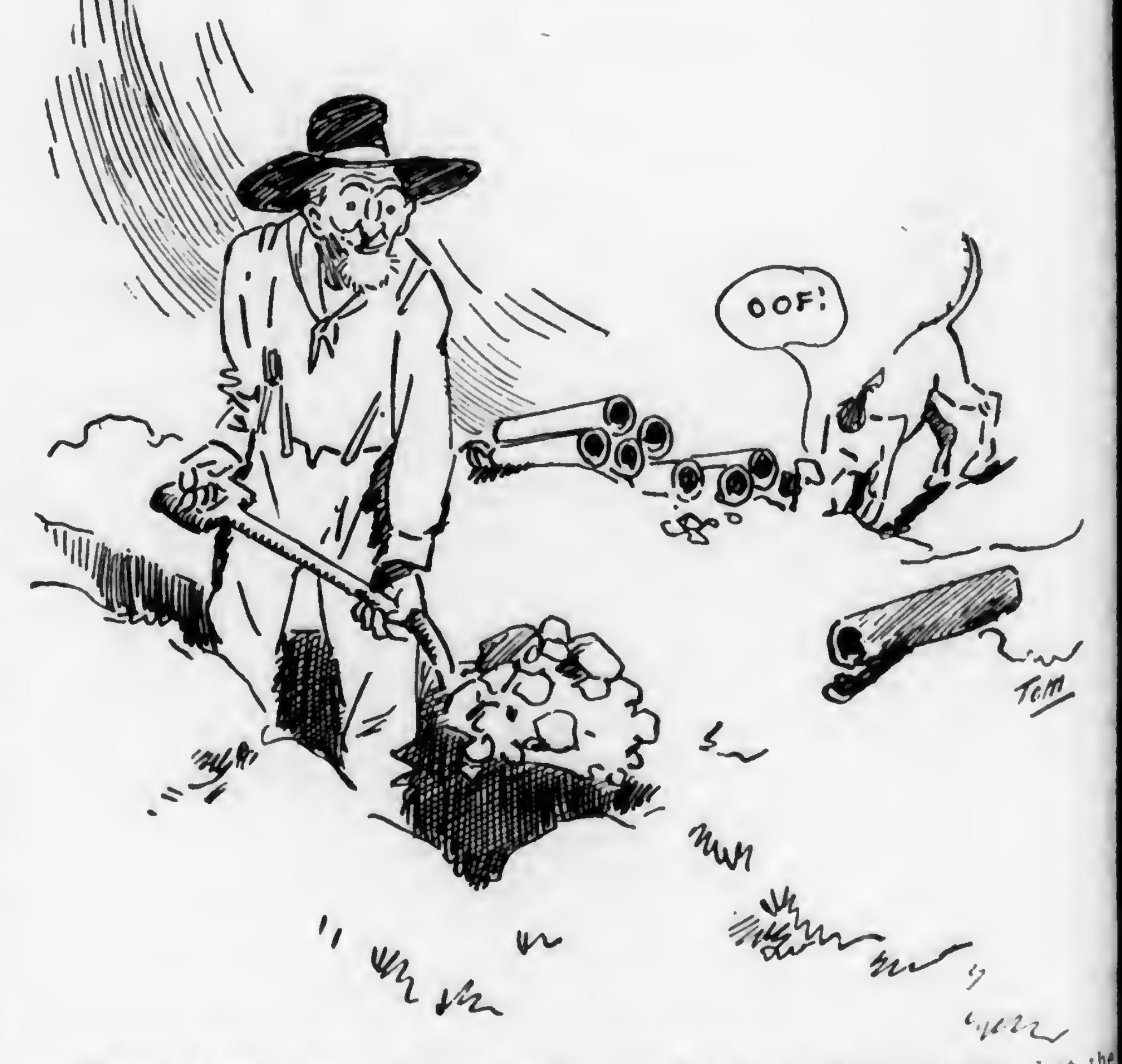
"Go in there and lie down," said Callahan to him. "You're used up, old fellow, I can see that. I'll take the key. Don't say a word."

"Not a word, Blackburn," put in Bucks, resting his big hand on the despatcher's shoulder. "There's no harm done; nobody knows it. Bury the thing right here to-night. You're broke up. Go in there and lie down."

He took their hands; started to speak; but they pushed him into Callahan's room; they didn't want to hear anything.

All the night it stormed at the Wickiup. In the morning the Irving Special, flying toward Chicago, was far down the Platte. Number One was steaming west, deep in the heart of the Rockies; Blackburn lay in Callahan's room. It was nine o'clock, and the sun was streaming thru the east windows when Fred Norman opened the office door. Fred could do those things even when he was sickest. Have a hemorrhage one day, scare everybody to death, and go back to his trick the next. He asked right away for Kit, as he called Blackburn, and when they pointed to Callahan's door Fred pushed it open and went in. A cry brought the operators to him. Blackburn was stretched on his knees half on the floor, half face downward on the sofa. His head had fallen between his arms, which were stretched above it. In his hands, clasped tight, they found his watch with the picture of his wife and his baby. Had he asked, when he first went into that room that night—when he wrestled like Jacob of old in his agony of prayer—that his life be taken if only their lives, the lives of those in his keeping, might be spared? I do not know.

THE END



Uncle Amos says: "Most every man has a sneakin' notion ·hat the best pay streak is on the other fellow's farm. I have a suspicion that my own farm will show real 'pay soil' if I use it right. This tile trench is going to help some. We will have a little trench warfare of our own, and if we get rid of these wet spots now we won't have to use our labor reserves so hard durin' the summer."

Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

Work in Joint Effort the Soil of the U. S. and Canada--Co-operative Farming in Man Power Necessary to Win the Battle for Liberty

The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Prodction last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918 is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do, farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than May 5th. Wages to competent help, $50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.
For particulars as to routes and places where employment may be had, apply to

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With one mule The Fowler does as much work as you can do with a two horse cultivator—and better work—because it cultivates shallow—has no prongs or teeth to destroy or distrub the crop roots. You can work right up to the plant with a Fowler. **By removing plow foot you can cultivate astride the row.**

You need this now. Order direct or through your dealer. We give service that counts.

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ONION WEEDER

It gets the weeds that are directly in the onion row. Don't waste your time weeding onions by hand. This machine speeds up production 90%.

Send for free trial.
Write for particulars at once.
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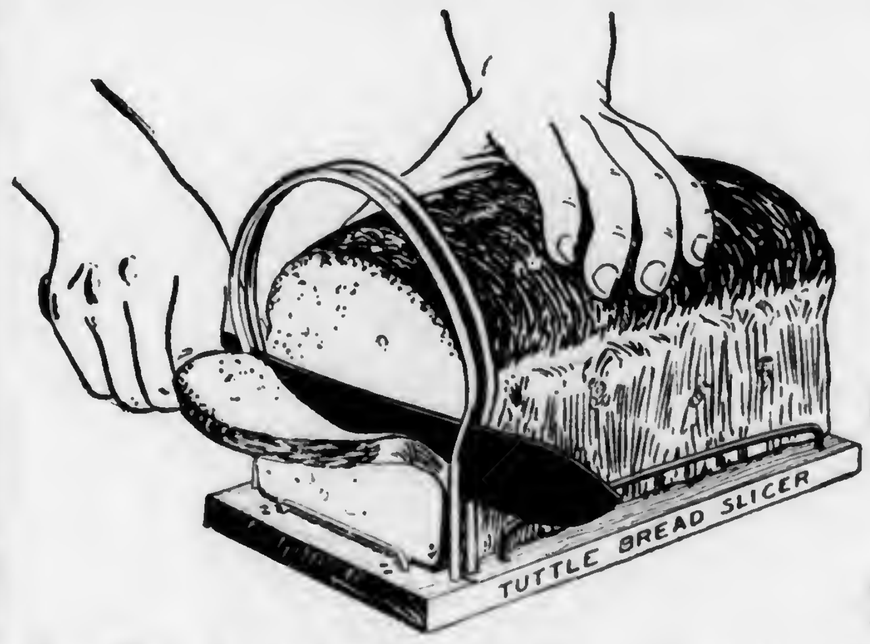
Live and Dressed Poultry wanted again. Also Butter and Eggs. J. G. HALDERMAN & BRO., 2918-24 Market Street, Phila., Pa.



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Do Your Bit

Put The Loaf On The Table and cut the bread as it is needed. A fresh slice always. Fine for slicing cold meats. Use bread knife or ordinary butcher knife.

Sent prepaid for two yearly subscriptions at 75 cents each or for one subscription and 25 cents additional.

Pennsylvania Farmer, 261 S. 3rd St., Phila., Pa.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 22, 1918.

There is but very little change in the old potato market. With supplies running about equal to the demand, prices are ruling about steady from day to day, except that there is not quite such a big range in values. Both Pennsylvania and New York state potatoes are selling generally at $1.60@1.75 per cwt., with an occasional sale of extra fancy up to $1.90 or thereabouts. At this writing there is no western stock among the supplies. There are, however, some Delaware Hoosiers, but these meet little attention from the buyers and are selling at $1 to $1.25 per cwt. New Jersey potatoes in ⅝-bushel baskets continue unchanged at 40 to 60 cents. New potatoes, however, are showing a very big drop from the prices quoted in these columns last week. Supplies are now arriving quite freely, and No. 1 stock in barrels is selling at $5.50 to $5.75 and in 160-pound sacks at $3.50 to $4.25, with No. 2's in barrels mostly at $5, and in sacks at $3 to $3.50. No. 1's in bushel crates are selling at $1.50 to $1.65. Sweet potatoes are possibly a shade lower, best New Jerseys selling at $1.40 to $1.50, mediums at $1 to $1.10, and seconds at about 50c. Southern sweets in bushel hampers are selling all the way from $1 to $2 as to size and quality.

Vegetables

Under the increasing supplies of nearby asparagus, the market has been gradually seeking a lower level. At this writing fancy nearby asparagus is selling at 30 to 40 cents per bunch, prime at 20 to 30 cents and culls at 15 to 20 cents. Southern asparagus is selling all the way from $1.50 to $4 per dozen bunches as to size and quality, while California ranges from $2.25 to $4.50.

Fancy green and wax beans are in light supply, and the market is firmer and higher at $1.50 to $3 per hamper as to quality. Carrots are ruling from steady to firm when fancy at $2 to $2.50 per barrel. Old cabbage is drawing to a close for this season, and most of the offerings are very poor and have to be trimmed before they sell at $25 to $30 per ton. New southern cabbage is arriving quite freely and selling at $2.75 to $3.50 per crate, and $1.25 to $1.50 per hamper. There has been but very little cauliflower here during the past week, and the market is firm on green flower at $2 to $2.50 per crate. Celery is scarce and high and fancy stock is selling at $4 to $5 per crate with fair to ordinary at $3 to $3.50. Cucumbers have taken a jump since last report and fancy are now selling at $3 to $3.50 per hamper and choice at $2 to $2.50. Egg plants continue in light supply and show little or no change, best selling at $3.50 to $4 per crate and choice and small sizes at $2.50 to $3. Nearly all kale arriving from the Norfolk section is very poor and irregular in quality and consequently prices are irregular, ranging all the way from 25 cents to $1.25 per barrel. Horse radish shows little or no change at $3 to $6 per barrel as to quality. Good, fancy lettuce is firm and active, Florida selling at $2 to $2.50 per hamper, South Carolina at $3 to $3.50, North Carolina at $2 to $3, and California Iceberg at $3.50 to $4.25 per box. Mushrooms are inclined to ease off with best stock now selling at 30 to 40 cents per pound. A few lima beans have been on the market this week and brought the fine prices of $4.50 to $5 per hamper.

Old onions are firmer at $2.50 to $2.75 per 100-pound sack. This year's new Texas crop has made its appearance on the market and is now selling at $2 to $2.50 per bushel crate. Parsnips are showing little or no change at $2 to $2.50 per barrel. Strictly fancy peas are very scarce and bringing good prices, best selling at $3.25 to $3.50 per bushel hamper. Parsley appears to be improving after having been extremely low for a long period, and is now selling at $2.50 to $2.75 per barrel. Norfolk radishes are showing an unusually wide range in both quality and price. Best are selling at $1.25 to $1.50 per hamper, while some of the very poor ones are selling as low as 25 cents. Nearby scullions are very plentiful and low, selling at 75 cents to $1.25 per 100 bunches.

Squash is scarce and selling at $1.75 to $2.25 per bushel crate. Norfolk spinach is showing an unusually wide range in quality. Some is so poor as to be practically worthless, while good spinach is in good demand at $1.50 to $1.75 per barrel. The supplies of tomatoes have been rather light for the past several days, and prices have made a little advance over last week. Good fancy 144's are now selling at $3.25 to $3.75 per crate while choice 180's are selling at $2.50 to $3.25. The culls and gems are also higher, ranging from $1.75 to $2.25 per crate. The first car of new crop white turnips from South Carolina arrived on the market this week and sold at $2.50 per barrel. Watercress continues about steady at 2 to 2½ cents per bunch.

Fruits

The supplies of fresh fruits are extremely scarce. Apples are in light supply and the market is much firmer and higher than last week. Baldwins are now selling from $4 to $6.50 per barrel, and some have sold up to $7. Ben Davis are selling all the way from $3.50 to $4.75, and some extra fancy have brought up to $5. Ganos are selling from $3.50 to $5, and Russets sold up to $6. These are about the only varieties that have been on the market in barrels this week. In boxes, Newtown pippins are selling from $2 to $2.50, Winesaps from $2 to $3.50. Pearmains from $2 to $3, Black Bens from $2 to $2.60, and Ben Davis from $2 to $2.50.

Strawberries are gradually increasing in supply, but up to this week have been unusually scarce for this season of the year. At this writing most berries are arriving from North Carolina and selling mostly at 17 to 18 cents per quart, with a few up to 20 cents, and poorer at 15c. Pineapples are ruling at $3.50 to $5 per crate as to size.

Poultry

Altho the embargo against the killing of fowls and pullets has been lifted, up to this writing the market has not settled so as to give quotations, but they will be resumed next week. As was predicted in these columns last week, prices on other live poultry have eased off. Soft meated roosters are now selling at 28 to 30 cents, staggy young roosters, 25 to 26 cents; old roosters at 22 to 23 cents; ducks, 26 to 30 cents; geese, 24 to 26 cents; guineas, $1.50 to $1.65 per pair, and pigeons at 65 to 45 cents per pair.

Eggs

The egg market continues to run along very steady, fluctuating but slightly from time to time, but taking it as a whole maintaining very near the same price. Supplies are not heavy for this season of the year, and the consuming demand is sufficient to absorb the offerings that are left over daily after storage requirements are net. At this writing nearby current receipts are selling at 35½ cents per dozen: firsts, 36½ cents, and western from 35½ to 36½ cents, with southern at about 34 to 35 cents.

PITTSBURGH PRODUCE

Pittsburgh, Pa., April 22, 1918.

A considerable bulk of country produce is going into consumption daily. Fresh green vegetables from the South are arriving in large lots and are working lower. New fruits, domestic and tropical, are coming in more freely and lower prices are looked for. Big receivers expect a steady broadening of the trade from now on to midsummer.

Potatoes, car lots, $1.45@1.65 cwt; sweets, $2.25@2.50 hamper. Onions, yellow, $1.50@2.25 per 100-lb bag; do., Spanish, $2.50@3 crate. Cabbage, $18@20 ton. Parsnips, 50@60c bu. Carrots, 50@60c bu. Lettuce, $1.75@2.25 hamper. Celery, $2@2.50 crate. Tomatoes, $3@4 crate. Radishes, 15@18c bch. Beets, 20@30c doz. bunches; asparagus, $2.50@4.50 box; cucumbers, $2@2.75 hamper; rhubarb, 35@75c bdl. Beets, new, 60@70c doz. Apples, $4@6 bbl; $1.50@2.75 box. Strawberries, 25@30c qt.

Poultry.—The ban on chicken buying has been lifted, but carlot receipts will not begin to arrive from the South and West until the latter part of the week. Scattering lots of coops by express are expected, but live stock for dressing on a large scale will not appear until Friday or Saturday, is the opinion of big dressers.

Hens, 34@40c lb; springers, 35@40c; broilers, 42c; roosters, 32c; ducks, 38@40c; turkeys, 38@48c.

Dairy Products.—At Chicago Saturday the price of creamery butter was advanced a half cent and like advance was made locally, effective this morning. The egg market is quiet with receipts in excess of current demand.

Elgin prints, 46½@47c; Elgin tubs, 46@46½c; Ohio and Pennsylvania dairy, 41@42c; cooking butter, 33@34½c. New York cheese, 28@29c; do., Ohio, 26½@27c. Selected eggs, 37@38c; eggs at mark, 35@36c. Goose eggs, $1@1.10 doz; ducks eggs, 38@40c.

Grain and Hay.—No. 2 yellow ear corn, $2@2.05 bu; No. 3 yellow shelled, $1.70@1.72; No. 2 white oats, $1.00½@1.01½; No. 3 do., 99½c@$1 bu; standard oats, $1.00½@1.01 bu; No. 1 timothy hay, $29@29.50 ton; No. 2 do., $25.50@26. No. 1 light mixed, $25.50@26. Rye straw, $18@18.50. Oat straw, $17.50@18. Wheat straw, $17.50@18.

BALTIMORE PRODUCE

Baltimore, Md., April 22, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.25@1.50 cwt; do., New York, $1.25@1.50; Eastern Shore, $1@1.15 cwt. Sweet potatoes, yellow, $3.50@4 bbl; $1.50@1.75 hamper. Asparagus, $3@4.50 crate. Beets, 3@5c bch. Cabbage, new, $2@3 crate. Celery, Florida, $2@2.75 crate; do., native, 5@6c bch. Cucumbers, $3@4 crate. Lettuce, $2.50@4 basket. Onions, yellow, $1.50@1.75 cwt; red, $1.25@1.50 cwt. Radishes, $1@1.50 basket. Tomatoes, $2.50@3.50 crate.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5; New York State, $4@6; do., No. 2, $3.50. Strawberries, 15@25c qt.

Butter.—Creamery, western, extras, 43@44c; firsts, 42@43c; pound prints, 45@46c; do., firsts, 43@44c. Nearby creamery, 40@41c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 34@35c; Eastern Shore and Virginia, 34@35c; Southerns, 34c.

Live Poultry. — Chickens 38@40c; do., rough, 20@22c; old roosters, 20@22c; ducks, 27@30c.

Hay and Straw.—No. 1 timothy, $32.50; standard timothy, $31.50@32; No. 2 timothy, $31; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover mixed, $31.50@32; No. 2, $31.50. No. 1 clover, $33@34; No. 2 clover, $31@32. No. 3 do., $28@29. No. 1 straight rye straw, $22; No. 1 tangled, $20@21; wheat straw, $18@19; oats straw, $17@20.

Grains.—Wheat, bag lots, $2.05@2.12 bu. Corn, bag lots, white, $8.25@8.50 bbl; yellow ear corn, $8@8.25 bbl. Standard white oats, 95c; No. 3 white, 95c. Rye, No. 2 western, $2.10@2.40; bag lots, $2@2.35.

YORK PRODUCE MARKET

York, Pa., April 22, 1918.

Eggs are in great evidence at the various markets but few are sold at the stalls; dealers get the bulk. Potatoes are plentiful and it looks as if many were being pushed off without regard to the price on account of the rush of work later. The great trouble is dealers refuse to put them down in price no matter what they pay the producer. This week, grocers were asking 20c per ½ pk. in the Harrisburg markets and when trying to sell to them we were offered 40c per bushel. In one instance a lady saw her groceryman pay the farmer 70 cents and she asked the price for a peck. He replied, 50 cents. She said that was too much, but he replied, "Business is business."

Eggs.—33@35c per dozen.

Butter.—Country, 45@48c lb; separator, 48@52c lb. Milk, 10c quart.

Poultry.—Roosters, 20@25c lb; dressed, 65c@$1.75 each.

Vegetables.—Potatoes, 7@12c ½ pk; cabbage, 5@10c hd; lettuce, 5@10c hd; beets, 5c bch; radishes, 5@7c bch; onions, 4@5c bch; 8@15c ½ pk; lima beans, 18c pt; soup beans, 15@17c pt; celery, 5@10 stalk; turnips, 20@25c ½ pk; corn meal, 10@12c quart.

Country Butchering.—Sausage, 32@40c lb; pudding, 28c lb; cured meats, hams, 42@45c lb; sliced, 45@64c lb; bacon, 60c lb; bologna, 15c ¼ lb; dried beef, 15c ¼ lb; lard, 30@34c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, $1.20; rye, $2; bran, $2.45 cwt; middlings, $3.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.72; oats, $1; rye, $48 ton; middlings, $56.

LANCASTER PRODUCE

Lancaster, Pa., April 22, 1918.

Asparagus made its first apeperance in large quantities today, and declined from fifteen cents a bunch early in the day to ten cents for later sales. A large supply of eggs met a slow demand at 33 and 35 cents a dozen. Potatoes brought ninety cents and a dollar per bushel.

Butter and Eggs.—Creamery butter, 55@60c per pound; country butter, 55@58c lb; fresh eggs, 33@35c dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables.—Asparagus, 10@15c bunch; spinach, 20c ½ pk; potatoes, 12@15c ½ pk; do., 90c@$1 bu; sweet potatoes, 25@30c ½ pk; new beans, 60c ½ pk; tomatoes, 15@20c bx; apples, 25@35c ½ pk.

Grain Market.—Wheat, $2.10 per bushel; chicken wheat, $2.10; ear corn, $1.53; corn, $1.62; rye, $2.05; timothy hay, $29@30 ton; mixed hay, $28@29; wheat straw, $18@19.

NEW YORK PRODUCE

New York City, April 22, 1918.

Butter slightly lower than last week. Cheese is quiet; egg market steady. Live poultry in light supply with little change in prices. Old potatoes are lower while new crop is higher. Liberal supply of most vegetables.

Butter. — Creamery, extras (92 score), per pound, 44c; higher score, 44½@45c; thirds to firsts, 38@43½c; state dairy, 35@42c; ladles, 32@35c.

Cheese. — Colored specials, 25@25½c. Daisies, 25@26c.

Eggs.—Fresh gathered extras, 38@38½c; extra firsts, 36½@37c; nearby white, fine to fancy, 39@40c; ordinary to good, 37@38c; browns, 37@38c.

Vegetables and Greens. — Beets, per bbl. $1@1.50. Onions, per 100-lb. bag, 50c@$2.25. Potatoes, Jersey, $1.50@1.80 per 100 lbs.; state and western, $1.50@2 per 100 lbs. Carrots, 75c@$2.25 per barrel.

Apples.—Winesap, $4@7; York Imperial, $3.50@5.50; King, $4@7; Baldwin, $3@6; Greening, $4@6; Northern Spy, $4@8.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 22, 1918.

Beef Cattle. — Offerings of steers were light and the market ruled firm under a good demand. Bulls and cows were well cleaned up and firm. Calves were in moderate supply and demand at former rates.

Steers, choice, $14@15.85; common to fair $12.50@14; bulls, $10@12.50; extras, higher; bulls, common, $8.50@10; cows, fat, per lb., choice, 9@10½c; fair to good, per lb., 7½@9c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $18@18.50; fair to good, $16.50@17.50; common, $13@15; Tennessee and southern, $9@16.

Sheep and Lambs.—Offerings of sheep and lambs were only moderate and prices generally ruled steady under a fair demand.

Sheep, wethers, extra, $14.50@15; good to choice, $13@14; medium, $11@12; common, $8@9.50; ewes, heavy, fat, $13@14. Lambs, choice, $20.50@21; do., medium, $18@19; inferior, $15@16.50.

Hogs.—Demand was fair and values generally ruled steady, with offerings only moderate. Quotations for best western, $20.

City Dressed Stock.—The market was generally steady, with offerings moderate and demand fair.

Steers, 21@25c; heifers, 21@23c; cows, 16@22c; calves, 27@28c; southern and barnyards, 20@22c; calves, 27@28c; country dressed, 23@25c; sheep, choice, 27@29c; do., extra, 30c; lambs, 32@34c; hogs, 25¾c.

LIVE STOCK MARKETS

New York, April 22.—Beeves.—Receipts, 3000; firm; steers, $12@16.50; bulls, $8.50@13; cows, $5@11.

Calves.—Receipts, 8070; weak; veals, $11@16; culls, $9@10.

Sheep and Lambs. — Receipts, 3760; steady; clipped sheep, $9@12; common to medium clipped lambs, $16.50@17.50.

Hogs.—Receipts, 7200; steady; heavy to light hogs, $18.50@18.75; roughs, $17; pigs, $18.50.

East Buffalo, N. Y., April 22.—Cattle.—Receipts, 4500; good, strong, common, easy; prime steers, $16.50@17; shipping steers, $16@16.25; butchers, $12@15.75; yearlings, $13@15.50; heifers, $9.50@14; cows, $6.50@13; bulls, $7.50@12; stockers and feeders, $7.50@12.50; fresh cows and springers, $65@140.

Calves.—Receipts, 3500; slow, easier, $7@15.50.

Hogs.—Receipts, 13,000; active; heavy and big steady; others, 15@35c higher; heavy, $18.25@18.40; mixed, $18.50@18.65; yorkers, $18.60@18.65; light yorkers and pigs, $18.65@18.75; roughs, $16.50@16.75; stags, $13@14.

Sheep and Lambs.—Receipts, 7400; active; clipped lambs 10c higher; others steady; wool lambs, $16@22.25; clipped lambs, $13@19 a few, $19.15; yearlings, $15.50@17; wethers, $15@15.50; ewes, $7@14.50; mixed sheep, $14.50@15.

Lancaster, Pa., April 22.—Cattle— ceipts, 1320 against 720 head last Mond market dull; prices from 25 to 50c low good to choice steers, $13.25@14.25; m to good steers, $12.25@13; common to dium steers, $11@12; good to choice hei $10@11.50; common to medium hei $8.50@9.50; good to prime cows, $9.75@1 medium to good cows, $8.75@9.75; li fleshed and medium killers, $7.25@8.5 bologna cows, $5.25@5.75; calves, mark slow and lower and few offered; best grad $14.75@15; common grades, $12@13.7 good to prime bulls, $12@12.75; medium good, $11@12; common to medium, $ @11.

Hogs.—Receipts 327 head; market gish; prices steady; good to prime, $1 @19; lightweights and medium $17.50@18; roughs, $16@17.

PHILADELPHIA HAY AND GRAI

Philadelphia, Pa., April 22, 191

Baled Hay and Straw.—Receipts, 240 of hay. There was little trading in hay, which there were ample offerings at prices. Straw was pretty well cleaned and firm.

Timothy hay, according to location—No. large bales, $29@30; No. 1, small bales, @30; No. 2, $27@28; No. 3, $23@25; ple, $19@20; no grade, $14@18; clo mixed hay, light mixed, $27@28; No. 1, $25.50@26.50; No. 2, do. $24@25.

Straw. — No. 1 straight rye, $21@2 No. 2 do., $20@20.50; No. 1 tangled $19.50@20; No. 2 do., $18.50@19; wheat straw, $19@19.50; No. 2 do., 18.50; No. 1 oat straw, $19@19.50; No. do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $1.75@1.

Oats.—No. 2 white, 99@99½c.

NEW YORK HAY AND GRAI

New York City, April 22, 191

Feed.—The market for feed on Sa failed to display any new features. prices were nominally unchanged and offerings continued moderate. There is little larger movement at this center, most of the goods arriving are on con and immediately delivered. Northwes mills are about out of the market, est being devoted mainly to the filling orders in hand. The season is about end and with the opening of pastures in est in the market will decrease materi Quotations (prompt Western shipment): middlings, $52 per ton; oats feed, $30 ton. Barley feed, $37; linseed meal, per $58.50. Corn feed meal, $56 per ton.

Hay and Straw.—The market is ately supplied with hay at all rail deli points but considerable stock offering the barge piers, chiefly medium and grades of hay. Market is generally except on poor qualities.

Hay.—No. 1, prime, $29@31; No. 2, @29; fancy clover mixed, $25@27.

Straw.—No. 1 rye, $18.

Corn.—No. 3, $1.60.

Oats.—No. 2 white, 96½@97½c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., April 22, 191

Butter.—Demand was fairly active the market ruled firm under light recei Supplies of both solid-packed creamery prints were closely cleaned up.

Western, fresh, solid-packed creamery, tra, 45c; higher-scoring goods, 46@47c; tra firsts, 44@44½c; firsts, 43@43½c; onds, 40@42c; sweet creamery, extra, under grades, 41@45c; nearby prints, fa 49c; do., average extra, 46@48c; firsts, 45c; seconds, 41@43c; special brands bing at 50@52c.

Receipts, as compiled by the Burea Markets, 1653 tubs of butter and 6686 of eggs.

Cheese was quiet but firm, with offerings.

New York, whole-milk, fancy, 24½c; cials higher; New York, whole-milk, fa good, 22@24c.

WOOL TRADE REVIEW

The Boston "Commercial Bulletin" April 20 says:

"The wool trade has been patiently ing the decision of the Government what disposition it intends to make of offer of the wool trade as of April submitting all wools owned on that All of the valuations and inventories been sent to Washington. Buying is West is, of course, still suspended and clothing trade is likewise in a state of pense pending the Government's decision wool."

Ohio and Pennsylvania Fleeces: Del washed, 85@87c; delaine unwashed, 75½c; ½-blood combing, 78c; ⅜-blood washed, 77c.

Wisconsin, Missouri and Average England: ½-blood, 70@72c; ⅜-blood, 76c; ¼-blood, 74@75c.

Virginia, Kentucky and Similar: ¼-b unwashed, 77@78c; ⅜-blood unwashed, @79c.

NEW YORK MILK MARKET

New York City, April 22, 191

Owing to warmer weather demand increased. The Federal Milk Commi met today to consider the price for It will probably not reach a conclusion a day or two. Receipts of milk and c in 40-quart cans for week ending April were as follows:

Railroad	Milk
Erie	37,612
Susquehanna	5,975
West Shore	10,690
Lackawanna	64,750
N. Y. Central (long haul)	124,365
Ontario	40,891
Lehigh Valley	45,673
New Haven	4,890
Pennsylvania	11,020
Other sources	7,110
Totals	352,876
Same week last year	356,710

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Shy Breeder.—I have a seven-year-old mare that I bred last June. She seemed to be in heat when in harness, but when taken to stallion she would fight him. We concluded to give her forced service. In 21 days she did not show signs of being in heat; therefore we decided she was safely in foal. Some time later she was in heat, but would have nothing to do with the horse. I then thought she might be with foal and let her go until this spring, but she now acts the same as she did last spring. She is large and should make good brood mare if I can get her with foal. E. N., Three Bridges, N. Y.—A mare will seldom get with foal when served against her will, but a forced service will sometimes have the desired effect of seemingly bringing on normal heat. The writer knows of no better plan than to keep taking her to the stallion and perhaps having he served daily for few days.

Sore Shoulders. — Nearly every one of our farm horses seem to be troubled with sore shoulders. I would like to know how to treat them. A. J. K., Corning, N. Y.—First of all, see that each horse is supplied with a clean, well fitting collar. It should not be too short, too narrow or too wide. Dissolve ¼ lb. acetate lead, ¼ lb. sulphate zinc, 1 oz. carbolic acid and 3 ounces tannic acid in one gallon of clean cold water, and wet shoulders and sores three times a day. This lotion is a useful stable remedy for all kinds of wounds and chafes. It will also toughen tender shoulders.

Weak Back.—My six-year-old cow seems to be well and is in good condition, but when down she is unable to get up. She is due to freshen in 15 or 20 days. T. J., Corning, N. Y.—Do not disturb her, she will remain down until 4 or 5 days after calving, then perhaps get up with very little help. Her bowels should be kept open, and this is best done by feeding her well-salted bran mash, clover or roots.

White Scours in Calves.—We have four calves that have been troubled with what our local veterinarian calls white scours. Two have improved under his treatment but the other two will perhaps die, as they pass considerable blood. Our cows are fed corn stover, meadow hay, cotton seed, sugar feed and corn chop. P. S., Revere, Pa.—Calf scour vaccine administered soon after birth of calf will generally prevent scours, but will not always cure the ailment after the disease has set in, or has lasted a few days. This is not expensive preventative treatment and the writer suggests that you have your veterinarian treat every calf dropped on your farm. Do not neglect to clean and thoroly disinfect your cow and calf stable. Have your veterinarian treat sick calves. It is difficult to destroy the infection, but persist with disinfectants, under your veterinarian's advice. Some calves are perhaps infected before birth, others soon after. The navel of every new-born calf should be disinfected with a good home disinfectant, such as one part coal-tar disinfectant to 30 parts of water, or one part carbolic acid and 40 parts of water, or paint cord with equal parts glycerine and tincture iodine daily until cord shrivels, but avoid using a string to tie cord, as this will occasionally cause trouble.

Ringworm.—Three of our calves are troubled with roughness of skin on head and neck. These patches are about the size of a silver dollar and skin is itchy. From the description I have given, can you tell me what ails them? A. H. B., Jamestown, N. Y.—I am inclined to believe they suffer from ringworm. If you will paint sore parts with tincture iodine daily, they will soon be well.

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Offer For Sale, Sons of
SIR INKA PRILLY SEGIS
Who is a son of King Segis out of a 30-lb. granddaughter of the noted foundation cow Prilly. We have 65 of his young daughters born at Winterthur, the first of which will freshen in 1918:
No. 21—Born January 19th, 1918. He is about four-fifths white and a good growthy fellow. His 14 nearest tested dams average 26 lbs. butter in seven days. His dam, Mayflower Topsy Walker 308597, is a 16-lb. two-year-old granddaughter of King of the Pontiacs.
No. 16—Born January 1st, 1918. He is a nicely marked, deep bodied, heavy-boned individual with a good top line. His dam, Lady Pauline Homestead Pietje 186262 with one-half udder she made 17.49-lb. She and 17 of her sisters by the same sire are in our herd, including one 31-lb. and two 34-lb. three-year-old cows.
No. 25—Born January 31st, 1918. This bull is nearly all white and is an extra good individual. His twelve nearest dams average 26.2 lbs. butter in seven days. His dam, Pauline Ideal 290780, is a 19.17-lb. two-year old granddaughter of King Segis Pontiac.
Full particulars including pedigrees and photographs will be furnished on request to
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Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices. Pictures and pedigrees.
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Durocs choice Sept. boars and gilts. Will breed gilts for Aug. & Sept. Spring pigs either sex.
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COUNTY NOTES

Broome Co., N. Y., (S.E.) April 13.—Stormy all week; starting with rain and ending up with about 10 inches of snow. About 200 cows have been sold at nearby sales during the last two weeks, many going for beef. Feed keeps very high and the local feed stores are out of bran. Eggs, 34c; butter, 45c; beans, $7.50 to $8 bu; cabbage, 1c lb; potatoes are still selling at 60 to 75 cents per bushel but the offerings are small and it is thought that after the frosted potatoes are all gone the price will advance. Onions, 55 cents bushel; apples, $1.25 to $1.50 bushel. Dressed fowls are 35 cents and dressed turkeys 29 cents. Who ever heard of turkeys being cheaper than fowls before? Wheat sells at $2.32; oats, $1.08; corn, $1.96; hay, $18 and $20 ton. During the warm spell much plowing was done and some oats were sown. Maple sugar makers to the north of us report an enormous run of sap, some of which was wasted as they could not care for it. Syrup has sold as high as $2 per gallon. Many farmers moving this spring. Seems that nearly two-thirds of the nearby farm population is moving.—C. H.

Venango Co., Pa., (N.W.) April 8.—Weather for March was fine; also for April so far. Live stock in good condition; high in price. Wheat and rye very poor. Meadows look fairly good. Butter, 50c; eggs, 40c; pork (dressed), 20c; veal (dressed), 18c; potatoes, 80c; seed corn, $4 per bu; hay, $25 ton. The fine weather in March permitted much farm work to be done. Much plowing done. General conditions, good.—W. J. Pringle.

SHORTHORN PRIZES

The American Shorthorn Breeders' Association will award $60,000 in cash prizes for Shorthorns at county, district, state and national shows in 1918. This amount is given on the basis of $1 for every $2 offered by the fair boards, so the combined amount will be close to $200,000 given on Shorthorn exhibits. The classifications will be arranged to encourage the beginners and unexperienced breeders.

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The DuPont American Industries offer fifty prizes for the best photographs of DuPont products in use. All photographs must illustrate the use of some DuPont product, as agricultural uses of explosives, industrial uses of explosives, painting, use of artificial leather, trap shooting, hunting, etc. For full particulars, address Advertising Division, E. I. du Pont de Nemours & Co., Wilmington, Del.

NEW BOOK

School and Home Gardening by Kary Cadmus Davis, Ph.D. Published by J. B. Lippincott Company, Philadelphia. Contains 353 pages; 160 illustrations. For sale thru Pennsylvania Farmer. Price, $1.28 net.

This book should become especially popular at this time because of the greatly increased interest in gardening. Those who are new at the business will find in this volume plain and explicit directions for the successful conduct of a garden, while the experienced gardener or trucker will find it up-to-date in giving the latest information on the subject. It should be appreciated by young people because it gives the explanation and scientific reason for what is recommended.

CUTWORM SUGGESTION

I noted the experience of Mrs. H. M. K., Morris County, N. J., in making garden. If she and others that may have trouble with cutworms will get young shoots of elderberry bushes and cut them into about three-inch pieces, and then stick these pieces in between the rows in her garden, she will have less trouble with the worms. This proceeding has always helped me in fighting the worms in my garden.—Fred Van Hohen, Talbot Co., Md.

Western Electric POWER and LIGHT

The Automatic Regulator

The Automatic Regulator is an exclusive feature of Western Electric power and light outfits. It is a distinctly new feature—a decided step in advance.

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Early Cultivation of the C[illegible]n Crop

Moisture and Plant Food in Promoting Early Gr[illegible]n

JOHN H. VOORHEES

Present indications point to the largest acreage of corn this year ever grown in this country. It is natural and logical that the acreage should be increased; it is a staple crop with ready sale on the market and a diversity of uses on the farm for feeding animals.

Those farmers who are making corn their major crop should be careful of the conditions making maximum production possible. Corn will grow on almost any soil unless it be on very light, coarse sand, but it is best adapted and produces the greatest yields on loamy soils of medium weight well supplied with organic matter or humus-forming materials. The reasons why this is so universally true is because such soils contain a greater supply of potential plant-food and the moisture supply is more easily conserved and regulated. The character and amount of plant-food and the supply of moisture limit growth more than any other two factors influencing the yield.

The corn plant is a vigorous feeder and its extensive root system undoubtedly enables it to make greater use of the plant-food in the soil than most other economic crops under similar conditions and in the absence of other limiting factors. It is known that corn will use the plant-food in organic matter very efficiently, largely because it makes a large growth in the summer months when bacterial activity in changing dormant to active forms of plant-food is greatest, and partly because the absorptive capabilities of the corn plant are great. Organic matter, regardless of its derivation (that is, whether it is secured from stubble, green manures, or barnyard manure) has beneficial effects which are of assistance thru their indirect actions. Principal among these is the conservation of moisture and the improvement of the soil conditions which make it more easily tilled or cultivated and make those other operations necessary to conserve moisture more easily accomplished.

Moisture supply for the corn crop is most essential. To grow a corn crop from planting to harvest requires about twelve inches of water evenly spread over the ground. This shows its importance. It is possible to work the ground in a manner capable of increasing the moisture supply beginning as far ahead as the fall before, but at this writing immediate attention is centered not in the preparation of the soil and attendant methods of conserving moisture but in methods best suited to enable its greatest use during the growing season. It has an appreciable effect upon the plant-food in the soil and enables corn to make greater use of it.

When I was a boy on the farm it was my firm conviction that the spike tooth harrow was little more than a piece of junk and I thought its sale to the first junk man would be a step toward greater efficiency. The Experiment Station farm where I was raised had various types of soils, as it is located where different types of soils come together. But most of these soils are very heavy. My father used to say about one field that "there was just about twenty minutes in the year when the soil was in exactly the right condition to work." It was very nearly the truth, too, because I have seen that field turned up in some mighty big clods. On those heavy soils the spike tooth harrow was almost useless and, as a boy, I considered it so for all soils, heavy or light. My experience has taught me better and I have come to believe it one of the most valuable implements for some kinds of soil preparation.

The Spike-Tooth Harrow Best Mulching Tool

There seems no better tool to make a thoro mulch for the corn crop in the first stage of growth. Two years ago I had a very striking experience which convinced me of its value. The plants were just coming thru the ground in a field of Leaming. I was prevented from finishing mulching the field in the middle of the afternoon by rain which continued during the night. About an acre and a half was left unharrowed. When it stopped raining, the ground was too wet to go on again for several days and by this time I had to use the cultivator; I cultivated the entire field. I thought little of the incident but as time went on I noticed that the part of the field which had not been harrowed was very backward in comparison with the remainder of the field. The difference grew more noticeable as the season went on and the harvest showed clearly the advantage of the mulching accomplished with the spike tooth harrow. No doubt the rain made the effect greater because most of it was held in the ground. I had a similar experience even more noticeable with mangels, altho in this case the riding cultivator was used.

There are a number of precautions to be used in handling the spike tooth harrow for mulching corn. It should never be set forward and in some light soils it is necessary to slant the teeth far backward altho a slant of 15 to 30 degrees from the perpendicular gives best results under most conditions. It makes little difference whether you follow the rows, cross them, or work the field from corner to corner, whichever is most economical of turns. I feel now that the spike tooth harrow is most valuable and worth its cost for this one purpose. In the case cited I was satisfied that greater production of corn on the part harrowed more than paid for the cost of it in the one year.

A Careful Driver and a Good Team Do Good Work

Cultivation

From this period on cultivation should be frequent. In the early stages of growth it may be deep, two or perhaps three inches, but as time goes on and the growth of roots increases it should be increasingly more shallow. It must be remembered that it is the light cover of loose soil which forms the mulch and prevents evaporation of soil moisture, and that the moisture in the loose layer is lost by evaporation so that less is lost when only a little soil is stirred. And further, it is not long in the growth of corn before the roots of the plants thoroly ramify the soil from row to row and from the surface to plow depth so that deep cultivation would disturb the tiny rootlets which come to the surface soil to secure the plant-food and moisture concentrated there immediately under the mulched soil.

Cultivation should be continued until the time of planting a cover crop in mid-July or later. Besides maintaining and conserving moisture for the corn, cultivation has much to do with the success of the cover crop, not only in preventing weed growth which is useless and harmful but more particularly in maintaining the soil in a condition fit to promote the germination of seed. Incidentally, the seeds of cover crops should be well covered and placed deep to secure moisture.

Just a word regarding the two-row cultivator. Labor-saving machinery is of the utmost importance under the existing conditions. I debated somewhat before purchasing a two-row machine because I feared it would be difficult to regulate the depth of the outer hoes, and I feared, too, that there would be too much for one man to handle and watch the rows of corn in order not to hoe too many out. It is hard work to ride a two-row cultivator all day and constantly watch the rows. At first the men could say nothing good for it but when they learned that I was persistent they began to forget the complaints and before the end of the season it was classed among the best implements on the farm.

Eradicating Canada Thistles

In the states north of the Ohio River, probably no plant bears such a bad reputation as does the so-called Canada thistle. This marvellously prickly plant abounds in grain fields, pastures, and meadows thruout the Central West, and is locally common in the northeastern states. Canada Thistle, or simply "thistle", has been condemned in the laws of twenty-five states, no other three plants together having received so much unfavorable attention. Certainly no plant is more generally and heartily disliked.

The unpopularity of Canada thistle is due largely to its unsightly appearance and exceedingly spiny leaves, and to its persistent resistance to extermination. Under ordinary cropping systems and with reasonable care, the thistle is at worst a disagreeable nuisance. Generally speaking, it does not injure the quality or quantity of farm products, excepting hay, as much as do quack-grass, wild onion, wild mustard, and others; nor is it as destructive to the grass in pastures and meadows as are a number of almost insignificant little weeds whose very existence is often unsuspected. When left to itself, however, the thistle spreads rapidly, until in a few years it will more or less completely occupy the land, rendering it unfit for farming purposes, and sharply depreciating its market value. The soil upon which Canada thistles flourish is likely to be of good natural fertility, and it usually pays to reclaim thistle-infested fields.

The cause of the remarkable vitality of Canada thistle and the point that distinguishes it from other prickly plants that are commonly mistaken for it is the long cord-like perennial root. This root penetrates the soil at a depth of eight to fifteen inches, or more, and gives rise at frequent intervals to leafy shoots. Thus it will often be found that an entire patch of thistle is attached to one root, and is in reality but one plant. The root is exceedingly hardy, and can live over winter or thru a prolonged drouth in a dormant condition. Pieces of the root that are broken off by a plow or cultivator and carried to other places will await a warm, moist period, and then begin to send up leafy shoots, thus establishing a new patch forthwith. If the leafy stems are cut down, others will be sent up to take their place, and this process may be repeated from two to eight times before the root becomes exhausted. In most localities, the Canada thistle does not produce many good seeds, as the male and female flowers are on separate plants, and not all of the female flowers produce viable seeds. Nevertheless, the seeds are frequently hidden away in straw and hay, and are sometimes present in grass and clover seed and in seed oats. As each seed is equipped with a feathery plume, a small patch of thistles may serve to infest a whole neighborhood.

The point that must be kept in mind, therefore, in fighting Canada thistles is that it is the roots, rather than the tops, that must be killed. Simply cutting off the tops a few times has much the same effect as pruning an apple tree. But if the tops are cut off deep and frequently, the root must eventually suffocate thru lack of leaves. Bearing this in mind, any of the following methods will be found effective:

1. Summer Fallow.—Most suitable for one-half acre or more of thoroly infested land, from which little revenue could be expected anyway. Plow deep in the fall, exposing the roots to the frost. Harrow in the spring to kill seedlings of annual weeds. Let the thistle grow until the first blossoms appear (about June 1) or until there is danger of other weeds going to seed. Plow shallow and from then until frost use disk harrow often enough to prevent thistle leaves from making over four inches of growth. If the thistles get over six inches high at any time, all the previous work will be undone. This applies to all methods. Follow during second year with a cultivated crop, giving it a little extra cultivation and hoeing out individual thistles.

2. Partial Fallow.—(1) For grain fields or old meadows. Cut the crop early for hay, if necessary, to prevent thistles from seeding. Allow thistles to grow for four to six days, then plow, and proceed as in 1 for remainder of season.

(2) For cultivated ground. Allow thistles to grow until first blossoms appear. Plow shallow. When thistles are about three inches high, disk thoroly and plant late smother crops.

3. Smother Crops.—Combination of above. A good method on rich ground. Cut grass or grain early for hay as in 2 (1) above. Plow shallow four to six days later. Leave for four to six days more and disk thoroly Then sow smother crop of buckwheat (4 to 5 pecks), rape (broadcast 6 to 8 pounds), millet (3 to 4 pecks), or fodder corn in check rows. After the crop is off, keep thistles down by disking until frost. Hemp and alfalfa are excellent smother crops in sections where they are grown. Alfalfa may be either spring or fall sown, according to custom, but the surface of the ground must be clean and well prepared before planting.

4. Cultivated Crops.—Most generally useful method. Corn in check rows best crop. Have ground clean before planting. Equip cultivator with nine-inch sweeps instead of ordinary shoes. Keep sweeps sharp and cultivate frequently. Hoe the corn after laying by, and cultivate the ground after harvest with a disk harrow until frost. Repeat second year.

5. Hoeing and Cutting. — Best for small patches. Stake out the patch and visit regularly with a sharp hoe or scythe at least twice a week.

6. Chemicals. — There is no chemical that in reasonable quantities will kill Canada thistles with one application, unless applied directly to the cut root. For spraying use sodium arsenite (a violent poison), two pounds in ten gallons of water; common salt, one pound in 1½ quarts of water; or crude carbolic acid, diluted one-half. If animals are salted on a small patch of thistles, it will finally disappear. Frequent spraying of the thistle with the above chemicals may be used instead of cutting in rocky or other inconvenient places.

The Result of Careless Driving

A Line-Up of Wheat Stacks on Lancaster County Farm. Barn Space Was Saved For the More Valuable Tobacco

THE ACCIDENT

Some Rules of the Road

It was Sunday morning. I was tidying up the car preparatory to its trip to church, when there came a mighty crash and then—silence. The public road running thru our farm passes several hundred yards from the buildings and makes a curve just where our private way meets it. The gutter is spanned by a culvert of concrete, with a wall or parapet at each end, and when I hurried out I found that the western wall had foolishly tried to stop an automobile that had no business there, and was much broken up consequence. The parapet was one foot thick, three feet high above the roadway, and eight feet long, well-built; but it was cracked from end to end and the upper half shoved out of place. Fragments of concrete and pieces of glass were thrown twenty feet away. The car, which had cost upwards of $800 two months before, was wrecked beyond repair; a junk man

refused to consider it worth $50. So that my concrete wall seems to have had the best of the argument, so far.

Five passengers of the misguided car were scattered over the landscape. We collected them, removed them to the house, rendered first aid, and telephoned for the doctor. None were killed and only one badly injured.

I am not writing this to praise my wall or to advertise myself as a builder of walls, but to point a moral; several morals, in fact. The road at this point curves, but both above the curve and below it there is a straight, smooth stretch with a grade of a few feet per mile. Nothing interferes with the view as there are no fences or other obstruction on either side and the concrete wall was back from the middle of the travelled road at least 12 feet. But the curve was the deciding factor that brought about the accident.

Have you noticed how many accidents happen at curves? I do not know what proportion of all automobile accidents happen at curves but it is very large, and the reason is mainly because so many drivers forget or fail to remember in time two important facts they learned, or should have learned, at school. One fact is that there is such a thing as a tangent; and the other is that a car traveling fast will follow the tangent rather than the curve "if you don't watch out". In other words, a car or any other moving body will continue to move in a straight line unless some force makes it move otherwise. In a moving car this force is for the most part exerted by the driver with the steering wheel, and when the driver is otherwise engaged, any mere concrete wall that happens to be on the tangent will suffer. Likewise the car; and, possibly, the inhabitants thereof.

In the case that crashed into our vision that morning there was another factor that helped on to the climax. We have been rather proud of our roadsides and have clipped the grass with the mower at intervals thruout the season until it is of a lawn-like smoothness on both sides of the traveled track which is very narrow, altho the road is the main highway thru the valley and much traveled. There was a heavy frost the night before, the grass was white, and when the outer wheels of the car struck it there was no traction and no departure from tangency, or the straight line. There were non-skid tires, practically new, on all wheels, but they did not avail. We could trace the track of the wheels for a considerable distance and there was no swerving from the straight line. And the moral of this is that grass is not safe to turn out on when passing another or when trying to round a curve; doubly unsafe at high speed on a frosty morning.

When I built the culvert I made it higher than the surface of the public road and then sloped the surface from my bridge south of it to the gutter north of it, thus producing the effect railroads employ of banking the curve—making the outer arc of the road higher than the inner. Vehicles travel much easier round such a curve than if the roadway is flat, the higher side tending to overcome the desire of the car to travel in a straight line. Skillful drivers will also increase the ease of circling a curve by hugging the inner arc or lower side of the road whenever possible. It is always possible when traveling one way, for that is your proper side. When the way is clear and the view open, it may be done going the other way. It is dangerous, however, when the curve is a sharp one and the view obstructed by buildings, fences, brush or growing crops, for you are violating the rule of the road, "keep to the right", and may collide with another car that is running on its proper side. Thus it helps to swell the number of accidents at curves.

Thruout the day and far into the night several hundred cars stopped, singly and in dozens, "to view the remains". There was much marvelling at the wreckage and at the narrow escape the passengers had; and many seemed especially gratified to note the havoc wrought upon my wall. Apparently, had the wall remained intact they would have felt cheated. One might think such an example of the result of intemperate driving would have a sobering effect on those who saw it, but they rattled away as recklessly as tho they were assured that such things might happen to others, but not to them.

There is one safe rule to follow when rounding curves at high speed—always throw off the power and be ready with the brake for instant action. Only a trifle of speed is lost, but the urge of the engine that so often spells trouble is wanting, and danger will be avoided; also funerals.—Howard Mitman, Northumberland Co., Pa.

The Prevention of Potato Scab

Disinfecting Seed Improves Germination and Lessons Scab

The disinfection of seed potatoes by soaking in corrosive sublimate or in formaldehyde is recommended as a measure that will tend to improve the germination and lessen the danger of scab.

Such treatment is, on the whole, profitable, but has several limitations which should be clearly recognized to prevent disappointment. The object of disinfecting seed potatoes is to destroy the germs of scab and other surface parasites which might otherwise be planted with the seed and infect the new crop. Only surface infections are reached by this method. It is only partially effective against deep pits of common scab. Either corrosive sublimate or formaldehyde, as ordinarily used, will destroy infections of blackleg, but neither will reach the internal infections common in tubers from blackleg hills. Neither Fusarium wilt nor late blight infection in potato tubers can be reached by any seed treatment, nor can any of the non-parasitic diseases of potatoes, such as mosaic, leaf roll, and curly dwarf, thus be prevented.

Immense Quantities of Potatoes are Lost Annually by Scab

Select Disease-Free Seed

Clearly, therefore, the most important precaution against these diseases is to select clean, disease-free seed potatoes from healthy, vigorous plants, as determined by field inspection during the growing season and at harvest. Seed treatment should then be applied as an additional precaution. It will not be effective, however, if the soil where the potatoes are to be planted is already full of disease.

Soil Conditions and Potato Diseases

Soil conditions have an important relation to potato tuber diseases, and many of these are widely spread thruout the country, and perhaps native to some soils. Common scab is favored by a neutral or slightly alkaline soil, and seldom gives trouble in acid soils. It, therefore, is increased by liming and by fresh stable manure, wood ashes, and alkaline fertilizers, such as nitrate of soda and ground bone, while acid phosphate and sulphate of ammonia tend to diminish scab.

Rhizoctonia occurs to some extent in nearly all soils, but appears to attack potatoes most when the conditions are unfavorable to the best development of the potato plant. Bring the land to an ideal state of tilth to minimize loss from Rhizoctonia.

Powdery scab is worst on cold, wet, or poorly drained soils. Blackleg, on the other hand, is carried by infective seed. No potatoes showing a deep brown discoloration at the stem end should be planted.

Sulphur tends to prevent common scab. It is not a substitute for corrosive sublimate or formaldehyde, but is a good drier for cut seed. Applied to scab-infected soils at the rate of 500 pounds per acre, it reduces the scab, but such heavy applications can not generally be recommended as profitable. Preliminary experimental trials are advised.

How to Disinfect Seed

It is considered better to treat potatoes before they are cut into seed, especially if the cut seed is to be very small. Put into the solution all the potatoes it will cover and keep the batch covered by the solution for the period named under the treatment being used.

The formaldehyde treatment consists in soaking the potatoes, before cutting, for two hours in a solution made by adding 1 pint of formaldehyde to 30 gallons of water. The solution can be used repeatedly. The gas treatment is no longer recommended.

The corrosive-sublimate treatment is more effective than formaldehyde, particularly against Rhizoctonia, or russet scab, and powdery scab. Corrosive sublimate is used at the rate of 1-1,000 for one and one-half to two hours. Dissolve 2 ounces of the salt in hot water and dilute to 15 gallons. This is a deadly poison. Use with great care. It must be kept in wood, porcelain, or glass vessels, as it attacks metal. Seed so treated must not be used in the household or left where animals can reach it.

In using the corrosive-sublimate dip, it has been found that the solution becomes weaker each time it is used. The degree to which the disinfectant is taken out of the solution varies according to the amount of dirt on the potatoes, the character of the water, and the kind of container. For practical purposes it will be sufficient to add 1 ounce of dissolved corrosive sublimate to each 30 gallons of solution after each batch of potatoes has been treated. When this has been done four times throw away the old solution and prepare new solution.

To treat large quantities of potatoes set several barrels on a slightly elevated platform. Fit a plug in a hole in the bottom of each barrel, fill with potatoes, cover with solution, let stand two hours, draw off solution, and pour into another barrel. Increase the number of barrels in proportion to the quantity to be treated. Another method is to use a large wooden vat or trough, into which the potatoes in sacks are lowered by a rope and pulley and later hauled out, drained, and dried on slatted racks.

Seed potatoes may be treated several weeks before planting, provided they are not reinfected by storing in old containers or storage bins.

Sprouted potatoes are injured by treatment, but will throw out new sprouts. In general, however, potatoes will not be injured by following the above directions. Many growers believe germination is improved by treatment.

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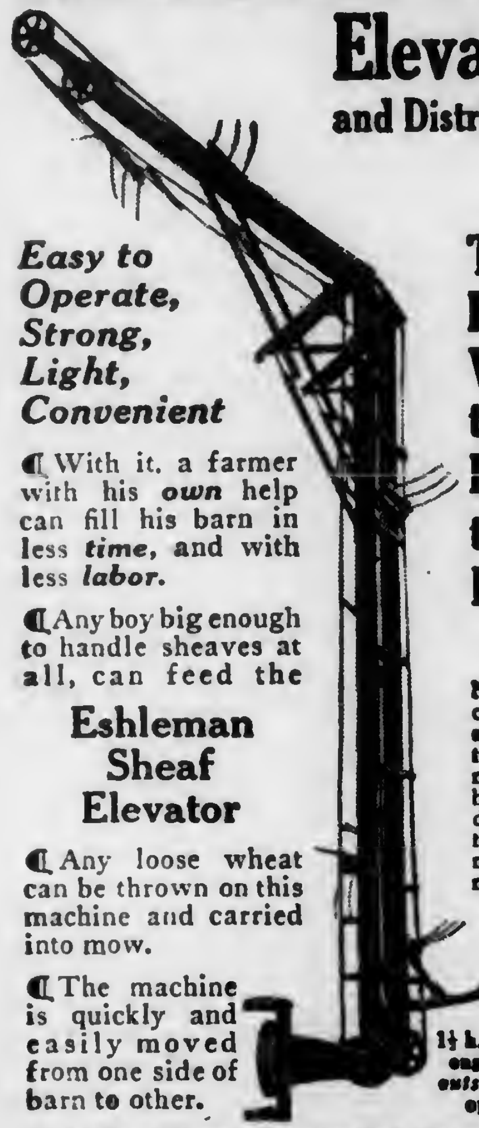

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How Spraying Costs Can Be Reduced

By Dr. J. P. Stewart, State College, Pa.

The present season is apparently out for a record in high costs of farming, and in delays and difficulties in transportation in general. Just now this condition has hit the fruit grower hardest in the matter of spraying, as illustrated by the following letter.

> "Will you please tell me just what kind of a mixture to prepare with which to spray trees for San Jose scale and also for curculio scab and brown rot? Please tell me the ingredients for each and the exact proportions so I can buy them at the drug stores and mix them myself as it is impossible to get them ready mixed, since we can not get the railroad to ship. My neighbors have been waiting for months for shipments of spray mixtures and the railroads simply do not deliver."—H. G. W.

There are two possible reactions to this situation, one is to throw up the job and quit, and the other to readjust a little where it will do the most good, and keep in the game. The correspondent is evidently on the latter trail, but possibly not in the most effective way so long as drug stores are to be the chief supply for the raw materials.

But what are the possibilities, and the most effective re-adjustments that can be made under the present conditions? Evidently the most effective solution to the problem is to make at least part of the spraying materials at home. Let us see how this will work in the case of lime-sulphur for example.

A 50-gallon barrel of commercial lime-sulphur solution now costs the grower at least $8.50 f.o.b. cars at point of manufacture. It weighs about 600 pounds, has a freight rate of 32½c per hundred to Central Pennsylvania, and at least 70 percent of this weight is water and extra container. The best of the commercial materials will yield from 450 to 500 gallons of dormant scale spray.

With the home preparation the equivalent of this barrel of material can be readily made with about 55 pounds of good fresh lime and 110 pounds of powdered commercial sulphur, boiled together in enough water to make a total of 70 gallons of concentrate. This amount of good spray lime now costs about 35 cents and sulphur about $2.81, f.o.b. cars at shipping point, and the freight ranges from 7½ to 28c per hundred. At the highest rate, the total freight amounts to 46c, or a general total of $3.62 for the necessary materials laid down at the station. Allowing two hours for the making, at 25c per hour, and 25c for fuel, the total cost of the home preparation is now $4.37.

The dry preparations avoid the extra freight and hauling, but those composed of soda-sulphur are only safe for dormant applications, and they cost about 8½c a pound. At the rate of 25 pounds per 100 gallons, therefore, which is as weak as they can be used with safety against the scale, they cost about $10.63 for 500 gallons of dormant spray, or a trifle more than the total for the ready-made commercial lime-sulphur.

With bordeaux mixture—the principal fungicidal spray for potatoes and grapes—the situation is very similar. The principal ready-made compounds of bordeaux and lead arsenate are costing approximately 18 to 20c per pound at the local station, and are usually 50 percent water. When used at the rate of 20 pounds in 100 gallons of spray, they therefore carry only 10 pounds of solids and yet cost from $1.80 to $2 per 100 gallons of spray.

When the bordeaux is made at home, however, the full equivalent of those materials can be made with 6 pounds of lime, 6 pounds of copper sulphate and 2 pounds of dry commercial lead asenate. This will cost about $1.35 if the raw materials are bought in considerable quantities. Nothing is allowed in this estimate for the labor of making, which is very simple, and involves but little if any more trouble than is required to work the commercial materials into a satisfactory paste. If the commercial dry arsenate of lime is used instead of the lead, the total cost should be about $1.20 per 100 gallons of spray, with probably no reduction in efficiency. This makes a saving of from $1.00 to $1.50 on each 200-gallon tank of spray, and runs into money very rapidly on the larger plantings.

A much better spray, however, can be made with 8 pounds each of lime and copper sulphate and 2 pounds of the dry commercial lime arsenate at a total cost of $1.40 per 100 gallons, when the arsenate is bought, and this is really the right spray to use on potatoes and grapes, in the writer's opinion. It is also possible to make the lime arsenate paste at home with a fair reduction in cost, but it requires considerable washing to get rid of the sodium by-products and is rather less convenient to handle than the powder.

The production of a better material at less cost will naturally improve the spraying, both in quality and amount, and this should be the net effect of all the economies here indicated. In general these economies are only important where one is using at least 4 or 5 barrels of lime-sulphur concentrate, or about 10 to 12 tanks of bordeaux spray. On smaller quantities the manufactured articles are likely to be preferable, if they can be secured in time and, in general, the prices charged are not unreasonable as compared with other commodities.

To Make Concentrated Lime-Sulphur

If live steam is available, barrels or other wooden vessels can be used in the boiling, otherwise iron vessels should be used. In a cooker holding 100 gallons, or thereabouts, the formula named above can be used without danger of boiling over. For other sizes, follow the general proportions of 1 pound of lime and 2 pounds of sulphur to 1⅓ gallons of final product, and allow sufficient margin to avoid boiling over. For a 75-gallon cooker the following formula is very good:

Quick lime (freshly burnt, 90 percent over CaO), 45 pounds; Sulphur (powdered commercial), 90 pounds; water to make, 60 gallons.

Place part of the water in cooker and start fire or steam. Add lime and sulphur, preferably sifting the latter in, if lumpy. After slaking is well started add remainder of water gradually, but as soon as possible without unduly checking the boiling. Keep volume at or above the 60-gallon mark during as much of the cooking as possible. Stir vigorously during the cooking to keep sulphur pellets broken up. Mild or moderate boiling usually gives better results than violent boiling. The cooking is finished when the sulphur is all dissolved, as indicated by the practical disappearance of the fine sulphur granules in the solution. This usually requires 40 to 50 minutes of boiling.

These directions properly carried out should give a solution testing 1.23 to 1.25 on the specific gravity hydrometer or 27 to 29 degrees Baume. The variations, however, are sufficiently large and numerous to require definite testing of all home-made concentrates before any accurate dilution can be made. This can be readily done with a lime-sulphur hydrometer, which can be obtained from any of the principal hydrometer manufacturers, at a cost of $1.00 to $1.50 for a complete outfit.

To Make Bordeaux Mixture

Copper sulphate (bluestone), 3 or 4 pounds; quicklime (freshly burnt, 90 percent or over CaO), 3 or 4 pounds; water to make, 50 gallons.

This material may be prepared either directly or from "stock solutions". In the former case, dissolve the copper sulphate in 2 or 3 gallons of water, and slake the lime carefully in a separate vessel with only enough water to avoid either caking or "drowning." Then dilute each of the materials to one-half the volume of spray to be made—25 gallons each in the present case—and pour them together at the same time into strainer or barrel, or pour the diluted lime into diluted sulphate solution.

If it is impracticable to dilute each ingredient to half the total volume, then dilute the copper sulphate solution to about ⅔ of this volume in the spray tank, and strain the milk of lime into it with as much dilution as practicable. Stir the mixture thoro and add water to make the required volume. Never pour the ingredients together before diluting at least one of them, and it is preferable to dilute both. Use only wooden or earthen vessels in making this material, as iron and similar vessels are seriously corroded by it. The insecticide should then be added and the mixture should be used at once, as it deteriorates on standing, and the fresh preparation is always the most efficient.

For extensive spraying, stock dilutions of the two ingredients may be made as follows: Dissolve the desired amount of copper sulphate in water, at the rate of 1 pound (or 2 pounds) to the gallon, by suspending the sulphate crystals or powder in a burlap bag just below the surface of the water several hours before the solution is needed. It will keep indefinitely without change, if protected from evaporation. The lime may then be slaked and diluted so as to carry the same amount—1 pound or 2 pounds to the gallon.

Market Garden and Truck Crop Notes

Fertilizing Sweet Potatoes

Potash has always been considered an essential for the production of sweet potatoes. For a year or so we got along without it very nicely because former excessive applications had left a surplus in the soil. Last season, however, there was a different story. The crop suffered severely from the lack of potash in the fertilizer. The yield was shy and some of the storage rots and loss may be blamed on the fact that the crop was developed without the proper fertilizing materials. However, it is very gratifying to know that a very small percentage of potash in the fertilizer seemed to be enough to satisfy the demand for a maximum yield. Furthermore, a light application of well decomposed manure in the row, together with a moderate application of a fertilizer containing 2 percent nitrogen and 9 to 12 percent of phosphoric acid, seemed to produce results equivalent to or better than a much more expensive fertilizer (without manure) containing potash.

Can-House Tomatoes

The Food Administration is particularly anxious that there shall be an increased production of can-house tomatoes this year. Pork and beans, coffee, hard tack and canned tomatoes form a splendid combination of emergency rations. In many sections the acreage can not be increased because much of the ground will be devoted to field corn, sweet potatoes, truck crops and soil improvement crops. The acreage of potatoes will be less than last year since the scarcity of labor will probably prevent a great increase in tomato production. Parts of Maryland and the lower part of Cumberland County, N. J., will have quite an increased planting.

The yield of tomatoes per acre can be materially increased by early plowing, frequent harrowing, early setting of stocky and hardy plants and by generous fertilization.

If time will permit, pull out about 3,000 seedling tomato plants from the thickest places in your plant bed and quickly transplant them into flats with the aid of a spotting board. When these transplanted plants are set in the field they will start off at once and produce from one to four tons per acre more than those plants which suffer from all kinds of weaknesses and setbacks.

Defeating the Crows

Corn-pulling by crows and black birds can be prevented by coating the seed with a thin covering of gas house (coal) tar. The seed is placed in a box or barrel from which the water can escape and a tablespoonful of the tar is added for every peck of seed. Water which is so hot that you can just barely hold your hand in it is then poured onto the tar as it lays on the seed. Stir the seed vigorously so that each kernel becomes thinly painted with tar. If the seed is then spread out to dry for a few hours it may be used in a corn planter without the least difficulty. This treatment does not injure germination and the birds will soon find that the seed is not fit to eat.—R. W. DeBaun.

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PHILADELPHIA, PA., MAY 4, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

The Senate and Labor In spite of the oft repeated warning to "avoid England's mistakes, and the advice to guard against France's errors," the United States Senate goes bunglingly along trying to pass legislation on industrial matters in the same spirit and with the same purpose which that body has always exhibited towards labor. The lesson to be learned from England in this regard is well worth while, since that Government satisfactorily settled the labor problem by the simple process of recognizing the rights and citizen-privileges of producers, and also their sincerity and loyalty. The Senate is evidently too much imbued with the idea that all labor is inoculated more or less with what is worst in the I. W. W. organization.

* * *

Changes in Farm Systems The British Isles have long been noted for their permanent pastures and meadows—some of them having been "down" for generations. Word comes that in these times when the food shortage is so great a great many of these sods are being broken and the land planted to crops which produce more human food per acre than can be produced thru the raising of beef and other meat animals. It has long been a contention of vegetarians that meat eating was an expensive habit. According to European figures, more tillage and less pasture will increase the amount of food produced. It is estimated that the following crops from one acre will provide food for one man for the given number of days: Potatoes, 1,500 days; wheat, 700 days; oats, 470 days; pasture, 40 days. For this reason it is not hard to understand why, as land and production costs rise, it becomes more and more necessary to confine stock-raising to low-priced and less productive acres.

* * *

Political Camouflage It used to be considered a wise thing to do, when the bees were swarming, to beat a dishpan loudly so as to drown the buzzing of the queen bee who might prove to be an adventuress and lead the "swarm" astray. Certain types of politicians have followed this idea by raising a hue and cry about some unrelated matter in order to detract the attention of voters from vital subjects, or to cover ulterior motives. The common people are just now greatly interested in the ratification of the prohibitory amendment, while that class of politicians which travels hand-in-hand with the liquor forces are proclaiming the necessity for an elimination of everything from politics which is not strictly pro-war or business. Strange, isn't it, that they cannot or will not see that the proposed amendment has a direct bearing upon the success of both war and business? But then, their chief concern is the election of their personally-selected candidates. Its but another example of beating the dishpan.

* * *

Let Us Have Facts It has long been recognized that nothing upsets business so much as uncertainty. While this principle has generally been repeated in reference to manufacturing and commerce it is also true with regard to agriculture, and never was there a period of greater uncertainty than now. We have no wish to accentuate that feeling now, but we do wish to protest against a continuation of unwise rulings and the publication of misinforming opinion and misleading figures. There is altogether too much being given out that is not founded upon facts. Forecasts, estimates and reports too often prove to be the result of poor guesses rather than ascertained facts. We feel sure that it would be possible to gather more correct information in relation to agriculture than much that is afloat, but if not, then none at all would be preferable to error. At this time, when so much depends upon conserving every particle of material and every ounce of energy, the nation cannot afford to depend upon guess-work and speculation as a basis for its activities.

* * *

Farmers Efficient President Wilson recently remarked: "Measured by the man test rather than the acre test, the American farmers are the most efficient in the world. They produce less per acre but much more per man. The man test is the better test." We wonder how those critics who have been continually lambasting the American farmer for his inefficiency will like that. It has been a favorable pastime for self-appointed critics to compare the records of production of the hand-worked acres of European countries with those produced by the less expensive methods on the machine-tilled farms of America and jump at the conclusion that our farmers "are the worst farmers in the world," and then proceed to hand out advice.

But the time will probably come when, in order to get increased production for an increased population, it will be necessary to do more intensive and hence more expensive farming. To forestall the conditions of the European peasant from appearing in this country it is time now for American farmers to take a hand in shaping the political and economic policies of the nation by taking a larger and more intelligent part in both. Such activity is also necessary in order to aid in the readjustments which must be made at the close of the war.

* * *

Be Thoro Success with crops of corn and potatoes depends much upon the preparation of the soil. And since the fate of nations may depend largely upon these crops the coming year, it is extremely important that no care be spared to put the soil in the best possible condition for plant growth. Since circumstances did not permit a great deal of fall plowing last year, most of it must be done this spring. For corn, plow as early as the ground is sufficiently dry. Follow immediately with the roller and, if possible, the harrow. In this way the ground will have time to settle and "knit" so that the soil moisture will move freely and induce rapid germination and growth. If any great quantity of vegetable matter is to be turned under, either green or stable manures, it is best to disk thoroly before plowing. This avoids placing a blanket of material beneath the furrow slices so that water cannot come up from below. As to planting time, experiments over a long period show that corn planted at the earliest frost-free date gives the largest yields.

The same rules for plowing apply to potato land. However, while spring-plowing for corn should be comparatively shallow, the soil should be plowed deeply for potatoes.

May Milk Price The Food Administration announcement of the May and June milk price for the Philadelphia district is published on the next page. This agreement represents the efforts of the Food Administration to stabalize prices. As is quite generally known, the price-fixing power is now vested in the Administration thru its local milk commissions and the Federal Milk Administrator. The dealers defend their interests as a well-organized body, and for the past year the producers have been well represented by the Inter-State Milk Producers' Association. Both contend for their "rights" but the real power rests with the Administration. The effort of the Administration is to put the adjustment of prices upon a scientific basis, with regard for all influencing factors. As an example of effort toward stabalization and as an index to what may be looked for in the future, this new price is worthy of some analyses.

The price for the next two months will yield the producers one cent less per quart than the old price. No reduction is made to the consumers. The one-cent per quart spread thus gained by the dealers is to be divided to cover two factors. One-half cent per quart goes to the dealers to cover losses on surplus which is always heaviest during May and June. One-half cent is "reserved as a credit" to be returned to the farmers in next fall's price. The effort is to yield the producers the highest possible price thruout the year, disturb consumption as little as possible and prevent periods of surplus.

The reduction to producers at this time is made in the assumption that milk can be made more cheaply and in greater quantity on fresh pastures of May and June than at any other period of the year. Being cheaper in cost of production the tendency toward over-production must be checked at the time of greatest natural surplus. An accompanying reduction in consumers' price to stimulate consumption for the same period would seem to be a necessary regulation to the same end. But experience has shown that the gains in consumption following such reduction in price do not balance the loss in consumption when prices are later advanced.

But there is still a surplus to be taken care of thru May and June. The condensaries are curtailed in their operations because of a lack of transportation facilities. The butter and cheese markets are in a very unsatisfactory condition. The ice cream and candy trade is shortened by the lack of sugar. The surplus is expected to cause actual loss. One-half cent per quart is allowed to cover that loss. The milk administrator gives the assurance that records will be closely watched and if the actual loss in surplus does not amount to one-half cent per quart, the difference will be credited to the reserve to be applied to farmers' prices next fall. The acceptance of the one-half cent margin further obligates the dealers to carry all of the dairies and not close up certain receiving stations that may be temporarily unprofitable.

The plan of creating a credit reserve to apply on next fall's price is the primary effort to stabalize the market. Over-production is to be checked by the price reduction to producers as noted. The price to producers must be materially advanced later. To prevent a violent reduction in consumption next fall and winter, the reserve is built up now to help cover the advance that must be made producers next fall. In other words, the reserve will permit an advance to producers of several cents per quart with perhaps only half that advance in price to consumers. It is expected that this will permit a just fall and winter price to the farmers without the usual disturbance of the city market.

It will be charged that there is more theory than sense in such market regulation. But it has been fully demonstrated that violent price fluctuations react quickly and seriously in consumptive demands. The market plan that holds consumption to the maximum and yields the farmers the highest net price thruout the year rather than for certain months of the year, is the plan that has been sought. Farmers will object to the present reduction, but if it will help increase the price next fall and winter when feed and operating costs are high, it will be worth while. It will prove or disprove a market theory that is certain to be given thoro trials in the next few years.

HARRISBURG NOTES

The Rural Angle.—One of the noticeable things about Capitol Hill these days is that the men who are filling offices, holding down jobs or warming chairs, are concerning themselves much more than the people of the state about the next Governor of Pennsylvania. There is general recognition that the time has come when the business scheme of the state Government must be changed and the administration conducted with more regard for the people. There are plenty of men on Capitol Hill with breadth of vision and intimate knowledge of affairs in various walks of life, but unfortunately they have not bent themselves to impressing their views or opinions on the legislative and appropriating power. Assurances have been given by some of the aspirants for high place that attention will be bestowed on giving an economical administration of affairs, and that the problems will be studied from the rural angle quite as much as from the industrial angle.

The Highway Work.—The manner in which the hopes of people for better roads are being kept alive is impressive. There is a great demand for better roads, and where it is not keen state authorities have been able to stimulate it and more than one county has agreed to go along on construction on a share-and-share-alike basis, the state paying the bill for advertising and surveys even though they have to be made a couple of times and bids then rejected because the prices are abnormally high. The State Highway department has let contracts for close to $2,000,000 since January 1.

Town Meeting Party Purely Local.—It is interesting to note that the Dauphin County court has held that there is a difference between the city and the country voter and that the right of challenge at a primary is quite a different thing in city streets from what it is in borough streets or along rural highways. The opinion has been given that Philadelphia people who were registered as Republicans before last fall's primary and who voted the Town Meeting party ticket in revolt against prevailing conditions in the Quaker City did not lose their qualifications as Republicans unless they changed their registration and may vote at the Republican primary next month. This decision will affect all cities. It is in effect that such movements as the Town Meeting were purely local and, there being a different system of registration in cities from the form of enrollment in the country, city rows need not affect the men in the fields.

More School Aid.—The state is about to send another half-million dollars to the aid of the high schools. The highway schools are given state aid by a share in the general state school appropriation, but that does not reach and as the State Board of Education had some funds at its disposal thru an appropriation for vocational education which was not all needed, the balance was voted to the high schools, some of which are giving agricultural, industrial or vocational courses. It only serves to emphasize the fact that the whole scheme of educational appropriations must be revised next session with an eye to keeping the rural schools up to standards. This is hard to do because of slender resources.

Liquor People Busy.—Judging from reports coming here the opponents of the prohibition amendment are extremely busy in the legislative districts, and will pass up the governorship when the time comes to elect "wet" members—especially senators.

Many Births.—According to some figures put out at the Capitol the State of Pennsylvania is not so badly off for population. There were approximately 220,000 births in the state last year. The increase per thousand last year was higher than for some time.

The Oleo License Again.—Once more there has been a revival of the perennial move to lower the oleo retail license. It is claimed that it is too high and that it keeps up the retail price. Dairy and Food Commissioner Foust insists that the licenses be maintained where they are.—Hamilton, Harrisburg, Pa. April 29, 1918.

NEW YORK LETTER

Limiting Loads on Highways.—Edwin Duffey, State Commissioner of Highways, issues a statement calling the attention of the people to the need of legislation limiting the loads of motor trucks on State Highways. He says unless this is done it will be impossible to save our main thorofares and keep them open for the use of the army trucks. The largest item of war appropriation of the state this year was $1,000,000 to repair and keep open for military uses the state road from Buffalo to New York City. The federal trucks come within the five ton limits set by the Government for its army, and such should surely be ample for commercial uses. Yet, in 1917, approximately 9,000 trucks registered in the state carry, when loaded, ten tons. Of the 8,000 miles of improved highways in the state many were built a dozen years ago, when the greatest loads ever put upon them did not exceed four tons, including the vehicle. Some of the trucks now registered carry 25 tons loaded, and it is out of the question to allow these on our highways. Only by rebuilding the entire road system of the state can such loads be carried, and an expense of $250,000,000 would be entailed. The state has already expended $85,000,000 on these roads. Only 1,000 of the heavy trucks are owned outside of New York City and of these three-fourths are operated in the larger cities. Immediate action to restrict the use of these on the state's roads is urged, and a bill was introduced at the close of the Legislative session.

Result of Liquor Election.—The 39 cities voting on the liquor question at a special two-day's election, April 16 and 17, went about 50-50 as regards the total vote. As this would have been an impossibility even a few years ago the result is looked on as a great gain for prohibition. Syracuse was the great surprise, going wet by 10,000 majority. Twenty went dry as follows: Auburn, Ithaca, Cortland, Batavia, Binghamton, Canandaigua, Corning, Elmira, Fulton, Gloversville, Hornell, Jamestown, Johnstown, Middletown, Norwich, Oneida, Oneonta, Plattsburg, Salamanca and Watertown. This includes all the bigger cities, except Syracuse, where brewery interests are very strong. The wet cities are: Amsterdam, Beacon, Genessee, Glen's Falls, Kingston, Little Falls, Lockport, Mount Vernon, Newburg, New Rocelle, North Tonawanda, Ogdensburg, Olean, Oswego, Port Jarvis, Rome, Schenectady, Syracuse, Tonawanda and Geneva. These cities may not vote on the question again for three years.

Big Auction Prices.—Auction sales on farms thruout the state have been unusually well attended this spring and prices have been beyond anything ever known before. A Livingsion County veteran auctioneer reports the most sales and highest prices ever known by him. A hay-loader that cost $75 when new a year ago brought $130. Other farm implements with even several years' use have sold for nearly double the first cost. Farmers evidently intend to do their best this year, even if prices are exorbitant on supplies.

Wheat Saving Pledges.—County food administrators are urging the signing of pledges to use no more wheat until the new crop arrives, with very gratifying results. Many individuals are signing and mailing these pledges, while 75,000 club members of New York city have approved the action of their governing boards in announcing that no more wheat will be served by these clubs until the new crop comes, with not a single dissent.

Government Takes Barge Canal.—The Federal Government has formally taken over the new barge canal which forms part of a great waterway from Duluth to New York City. The state tendered the use of the canal to relieve railroads of freight pressure, but retains the title. A great eastward movement of food stuffs, fuel and war freights is expected. The canal will be open to traffic May 15th, and will be open to December 1, as late as weather conditions permit. Probably 20,000,000 tons of freight will be handled this year, most of it coal. The Government will at once build several hundred 700-ton barges, probably of concrete, as they are cheaper, more quickly built and can be built anywhere, releasing room in the shipyards for ocean-going vessels. The barges will be operated in strings of 3 or 4 and will be hauled by power boats. Coal will be hauled overland to Ithaca or Watkins, then transported up Seneca or Cayuga lakes, to the canal, and may be diverted to points in New England when it reaches the Hudson river.

Crops Shifted.—Labor conditions have forced late changes in crop plans thruout parts of the state. Celery growers especially will have to reduce acreage. J. H. Snyder, of Sodus, will plant but 15 acres instead of his usual crop of 75 acres. Beans, cabbage, potatoes and other crops will replace celery. Steuben County has been the greatest potato county, but will this year plant but one-third its usual acreage. In Orleans County the labor shortage will be shorter than one year ago when factories released their help. Farmers are hampered by non-delivery of tractors, which it is now learned will not arrive in time for this season's plowing. Others complain of seemingly needless breakages of not only tractors but of shipments of maple sugar, syrup, eggs and other farm produce. Syracuse factory owners this week placed slips in 25,000 workmen's pay envelopes, saying all who have had experience in farm work will be released until fall, when their jobs may be reclaimed.

Township Repeal Notes.—Educators, boards of directors and district superintendents of schools anticipated the Governor's signing of the repeal of the township school law by concerted action in hiring teachers for rural schools for the coming year wherever possible, giving as a reason for such action the unusual shortage of teachers. How either early hiring or late hiring of teachers is to affect the number obtainable is not easy to see, but early hiring does have the effect of keeping school control out of the hands of the rural districts as long as possible, and is interpreted by the people as such. The real shortage of teachers that exists all over the state can but result in a forced consolidation of country schools and this ought to be welcomed by educators. Even the farmers believe that such consolidation will be their best resort under the circumstances.—F.

MILK PRICE CHANGE

The following announcement from the Food Administration for Pennsylvania gives milk prices to farmers for the Philadelphia district for May and June:

"The price to the farmers for milk during May and June will be 6¾ cents per quart, f. o. b. Philadelphia for 4 percent milk, instead of 7¾ cents, the present price. The price to consumers will remain at 12 cents per quart and 7 cents per pint. This is an increase of spread to the dealers of one cent per quart. Of this one cent, one-half is to go to the dealer for taking care of the surplus milk during May and June, and keep on all their dairies and one-half cent is to be reserved as a credit to be paid to the farmers in higher prices for milk next autumn.

"The Milk Commission approved this plan as essential to keeping a moderate price to the consumer and a fair price to the farmer during next autumn and winter. The books of the dealers will be examined by an accountant for the Food Administration to ascertain whether the loss in handling surplus is equal to one-half cent a quart. If it is found to be less than this, the difference will be used as a further reserve for formers' prices next winter.

"The farmers in the Philadelphia district from January first to May first of this year have received the highest price for milk of any district in the country, and the consumers have had the lowest price for pasteurized bottled milk."

J. T. CAMPBELL DEAD.

Word comes of the death of J. T. Campbell at his home at Hartstown, Crawford County, Pa., on April 22. Mr. Campbell had served for many years as institute speaker, grange lecturer and farm advisor in Pennsylvania, and had formed thousands of close friendships thru his sympathetic touch with farm folks and farm problems. Death was due to acute pneumonia and valvular heart trouble. His going will mean a loss to Pennsylvania agriculture, and will prove a personal loss to thousands of farm families of the state.

PORK PRODUCTION SPECIALIST

Mr. E. Z. Russell, of Nebraska, one of the best known authorities in the country in swine husbandry, has been appointed to take charge of swine investigations and pork production work in the Animal Husbandry Division of the U. S. Department of Agriculture. Mr. Russell is a breeder of 30 years' experience and has been manager of the National Swine Show.

RE-USE OF BINDER TWINE

The Federal Food Administration calls attention to the possible saving of binder twine used in harvesting if some efficient method can be devised. The farmers of United States and Canada will this year use about 300 million pounds of binder twine for which they will pay about $75,000,000. At present twine prices the piece of twine necessary for each sheaf of grain is worth about one-tenth of a cent. The second-hand value of this twine, however, is perhaps one-third of this first value. Therefore the saving is very small on each unit but mounts high in the aggregate. It is said that a prominent fiber manufacturing concern in New York is offering inducements for the perfection of a device that will save twine for re-using.

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First Aid to Food Conservation

Even though tomorrow's sun should rise upon a world at peace it would still be your patriotic duty to conserve your grain crops because a war-weary and hungry world will look to America as a source of food supplies for many years to come. Foremost and essential aids to food conservation are the good, old reliable

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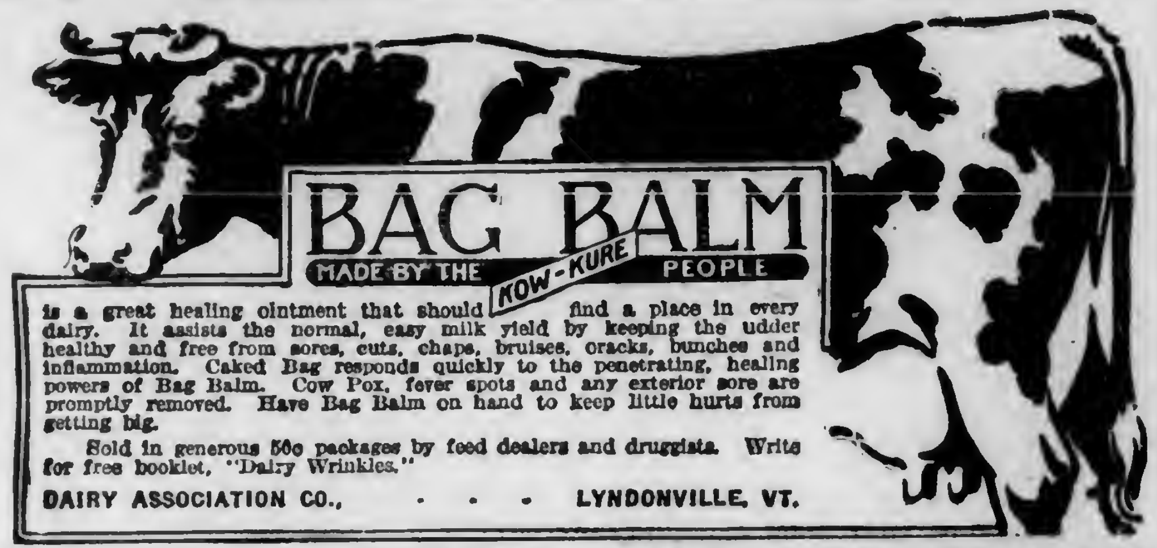

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New Things in Dairying

An Age of Stop, Look and Listen

Sunflower Ensilage.—Count that day lost that does not call the attention of dairymen to some new and important improvement or new discovery in the feeding and management of the dairy. Of course with the high cost of dairy feeds, any new suggestion is of value—during its narration at least. Corn has long been regarded as the standard crop for the silo, but last season was a "dimmer" in corn production. The question is, is there a sure crop. From the Montana Experiment Station comes a report of a three-year's trial with the great Russian Sun Flower as a substitute for corn and report of its complete success. It is said to be a sure crop, a great yielder—20 to 30 tons per acre when cut just as a small part of the flowers are coming into blossom. It is cut and siloed just as is done with corn, is a fine keeper and bulk for bulk in all respects is the equal of corn for feeding and for milk production. It gives no peculiar flavor to the milk, is cleanly eaten by the cows, and if anything more is needed to be said in its favor, reference will have to be made to the state report.

The Motor Trucks

It may not be a new thing in some other sections, but hereabouts the motor truck is fast coming into evidence in the handling of dairy products. Where long lines of paved roads reach out from the city, the milk distributors and dealers in the city send out the big trucks into the dairy sections, and gather up huge loads of milk, some of these trucks returning with something like one hundred 85-pound cans of milk, and take back the empty cans on the return trip. At the start, this saves the farmers on the route from taking their milk to the local train in early mornings, often one to four miles away, and there is no bother about empty cans. The city butchers with their trucks scour the country for butchers' stuff, and return with loaded vans. Yesterday a truck went by with rack attachment, and thereon were four great fat cows speeding cityward at a 12-miles-an-hour gait. "The butcher, the baker and the old junk maker", now all thread the country roads and collectively they have become the collectors of our country produce — for cash down. This is a distinct gain to the farmers in these days of very poor express service, and often poorer net prices from the commission merchants.

Farm Tractors

This seems to be a tractor season as well, and all thru the recent remarkable dry March weather, tractors were seen at work in all directions. The tractors were of several kinds of makes—all the best, but some worked better than others, and some went where others could not. With some, hard or soft ground made no appreciable difference. One thing with all was that so long as the gasoline held out they did not tire out or chafe under the collar. I notice that most drivers try to copy the ordinary horse work. They just plow, then harrow and last drill. If work is to be speeded up, why not do all three operations at the one time, providing of course that the ground is seedable and the tractor has sufficient pull. One thing is certain, the tractor on the large farms is going to do about all of the pull work, including grain and grass cutting and later, the threshing, silo filling and husking.

My neighbor pulled a hay loader with his tractor, using two wagons. He hauled the loaded wagon to the barn and took the empty one back and loaded while the first was being unloaded. And at a steady, even gait, it raced the side delivery rake back and forth across the meadow. Yes, they cost money and will wear out, and will balk now and then when there is a green hand at the throttle. But certainly the country is going to catch up with the city, if it is not already there.

Big Changes

This Old World is having something of a jolt that is putting a lot of old doctrine, custom, economics, methods of finance and about all of our general domestic relations out of commission, and what amounts to about a new world will come upon the scene of action. In spite of what we may desire, the world is going fast into the domain of centralization and one-man directorship. The dairymen had actually centralized into leagues, all over the country, and a committee of three men might be acting for 5,000 farmers or more. Now the government goes a step further and makes dairy prices for both city and country, whether or not satisfactory to the farmers. It is actually military law. Water routes and whole railway systems are now, without much ado, run by one man, and the coal industry is directed by one man for a great nation.

Our inland transportation is another case in point. Motor trucks are almost rivals of the rail lines, not for short hauls, but for 600-mile distances. Yesterday a great line of U. S. Army trucks—ninety-five of them and each one with ten tons of freight, army supplies—went past headed for Baltimore; and strings of them are passing all the time as well as hundreds of private trucks. A trip across the continent does not dismay the auto owner now, and almost every day here, a small fleet of baloons passes overhead, students in training for the aerial post routes. What will be done with the two or three million boys who come back from Europe with wholly new conceptions of the "world's work"? That work classified will have a marked effect on the industries. The woman has come into her own as a skilled worker and with the ballot. She is an equal, even now, in all respects and will never go back into an inferior place. Our schools are to be reconstructed and modernized with useful things taught — not things dusty with the ages. For years we will be a military nation with a sharply drawn line to "Render unto Caesar the things that are Caesar's and unto God the things that are God's." We will have a respect for the law never before known, and class and caste will be about wiped out. The new world will be vastly different from the world of 1900, and it will be welcomed by the great mass of Americans, wherever born. —Chas. Mathew Morgan, Ohio.

MILKING MACHINES SAVE LABOR

The shortage in labor is causing more interest than ever in the milking machine. Milking machines have been on the market more than 25 years but many of them have not been successful. As a result of years of experimenting, machines are now on the market that are past the experimental stage. Milking machines are giving the best satisfaction in hands of many users while others soon discard them. The successful use by many shows that the machine is all right when properly used. Experience has shown that the milking machine saves a great deal of labor, making it possible for one man to milk 25 to 30 cows in an hour, altho extra time is required for cleaning the machine. The machine does not injure the cow in any way and the animals prefer machine to hand milking. It is a question whether the cows milked with a machine hold up in milk toward the end of the milking period quite as well as when hand milked, so that the yield for the year may be a little less. Apparently the machine will do better work than poor hand milkers but it is not quite equal to skilled hand milkers.

When the machine is properly handled the quality of the milk with reference to its sanitary condition is better than when it is hand milked, but too often the machine is not properly cleaned, and then the milk is not in as good condition as that drawn by hand. A farmer who expects to purchase a machine will do well, first of all, to visit some one using a machine of the kind he is considering, and see it in operation so that he may decide for himself whether he wants it. In buying a milking machine use the same common sense that would guide the buyer of any machinery. It is safer to get a make that has been in use for some time, preferably three years at least in order that the defects may have been corrected.

It is doubtful whether a milking machine is practical for fewer than 30 cows. The cost for an outfit for this many cows will vary from $150 to about $450, but if it does its work successfully it is well worth the price.—C. H. Eckles, in Missouri Circular.

NEW YORK CHEESE SITUATION

Dairymen are much interested in the cheese situation. The Watertown Cheese Board held its first informal meeting recently, preliminary to the annual meeting May 4. Dealers are loaded up with cheese costing 26@27c. The holdings in storage are now 38,130,634 pounds, an increase of 225.6 percent over one year ago. The government is in the market for great quantities of cheese for army use at 24c a pound, or less than cost of production. The Watertown Board of Trade is the largest inland cheese board in the country and at Lowville, not far away, is the largest storage plant for cheese in the world. No shipments of cheese are reported yet, excepting one of 200 cheeses at from 20@21c a pound from Gouverneur.

The increasing number of condensed milk plants is all that saves the dairy situation, altho the situation is nearly the same with regard to immense holdings of surplus condensed milk. The Aurora Condensed Milk Company has just opened a condensary at Ogdensburg, and at Potsdam another is being built for them, while their plant at Canton is running at capacity. The Dry Milk Company at Adams will take milk on the Hanover brand plan.—F.

SUMMER SILAGE

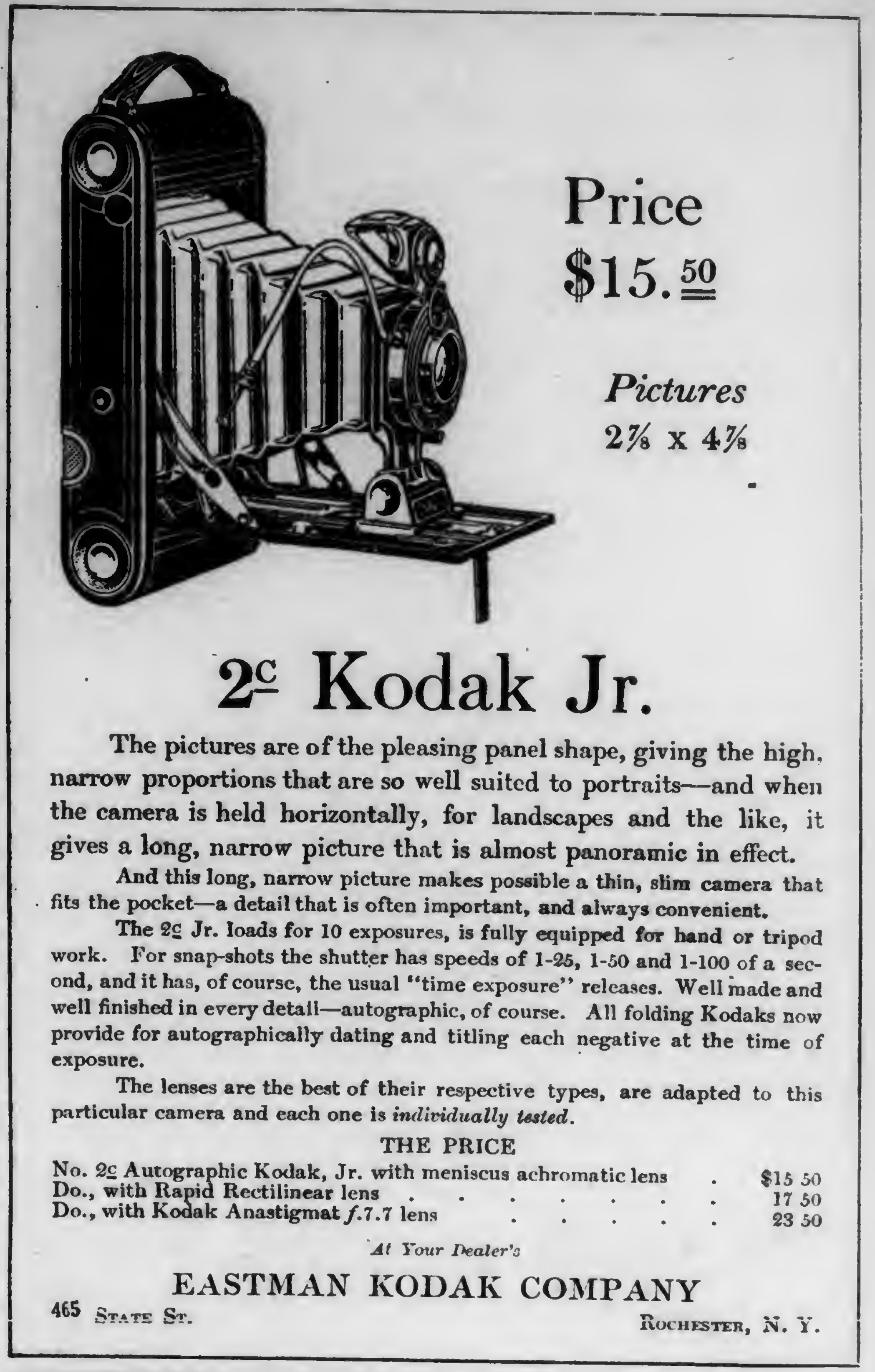
"Will it be possible to hold silage over for use in the summer? The silage was put up last fall and appears to be in good condition. Can I hold it for use late this summer without loss?"—E. W., Susquehanna Co., Pa.

There is no reason why this silage should not keep in good condition if the silo is not defective. If the silage has not been disturbed it should be left as it is until wanted, as the natural spoilage on the top will protect the silage remaining.

Clover of Pencoyd 2nd., Pennsylvania's Champion Guernsey Cow. Owned by T. W. and I. W. Roberts, Montgomery Co., Pa.

On December 6, 1917, Clover of Pencoyd 2nd 35083 completed her year's work with a credit of 16,127.1 pounds of milk and 821.63 pounds of butter fat, making her the champion Guernsey cow of her state for the year, and the second highest Guernsey cow in Pennsylvania, her leader being May Rilma 22761 A. R. 1726, former world's champion cow, with 1,073 pounds of butter fat.

Clover of Pencoyd 2nd cannot be called a heavy milker, but she is a most persistent worker. In her best day she produced 53 pounds of milk, and in her last two months she averaged better than 40 pounds daily. She has developed wonderfully in the past year and is today a better cow in all respects than when she started her test. She is sired by Glenwood's Main Stay 16th 9384, whose seven Advanced Register daughters average 612 pounds of butter fat, all bred and tested by T. W. and I. W. Roberts of Montgomery Co., Pa.



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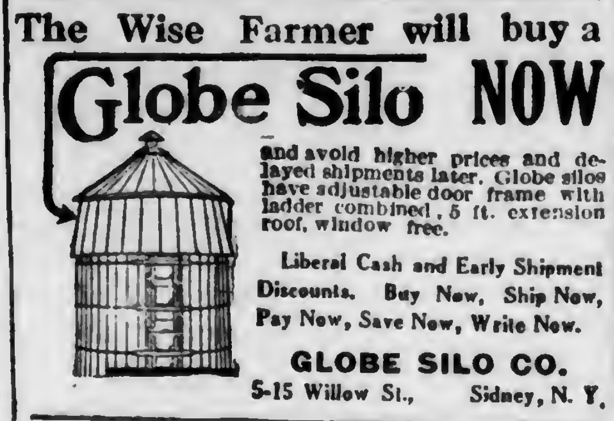

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Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Old Potatoes

Trade has been improving during the week, and prices tended upward generally. A few complaints of car shortage came from western shipping sections. Increased demand is expected to follow the publicity campaign conducted by the Food Administration and the Bureau of Markets. In the Rochester, N. Y., district prices advanced 10c, ruling $1.25 at country loading points, closing steady, with limited demand and movement. At Grand Rapids, Mich., prices advanced 5c, ranging 65@85c, and cars were reported scarce. Price improvement was chiefly in Eastern and Northern shipping sections. New potatoes, with supply increase very fast, declined about $1.50 per bbl., ruling $4.50 per barrel for No. 1 Spaulding Rose or $2.50@3.00 per 100 lbs. sacked.

Tomatoes in Good Demand

Better demand was reported for old stock this week and prices advanced further, some markets, like Philadelphia and Baltimore, now ranging nearly double the average of a month ago, but soft, inferior stock is still selling at low prices. Leading eastern centers quoted sales to jobbers $1.50@2.00 for 100 lbs. for choice yellows sacked. Central and northern markets ranged $1.00@1.25.

Tomotoes in Good Demand

Shipments of tomatoes from Florida east coast district were heavy, 365 cars, besides 25 cars from Mexico. Prices to growers tended higher, ranging $2.65@3.00 per six-basket carrier, f.o.b. cash at shipping points, with active demand. Sales to jobbers ranged generally $3.00@4.00 per carrier. In 1917 for the comparable week growers were being paid $2.65@2.90 per carrier.

Strawberries Lower

The movement is not more than one-third from North Carolina. Total volume increased 291 cars, compared with 157 cars last week. Growers were paid $6.00@7.50 per 32-quart crate, choice stock, and $3.00@3.50 for inferior stock at Chadbourn, N. C. Stock was considerably damaged by rains. Northern markets quoted North Carolina and South Carolina Klondykes lower at 20@38c quart basis closing week, at about 25c average, with fair demand. Growers at Hammond, La., were paid $2.25@3.35 per 24-pint crate and $3.00@5.50 per 24-quart crate closing at the top with receipts light. Sales at auction reached $4.00@4.50. Sales to jobbers ranged mostly $4.00@4.75 per 24-pint crate and $6.00@8.00 per 24-quart crate in northern markets, with fair demand. In 1917 for the corresponding week the range of prices to growers at Hammond was $1.75@2.32 per 24-pint crate and the general jobbing range was $2.25@2.50. In 1916 for the corresponding week the price to growers ranged $1.65@2.20, while the jobbing range with a little below that of 1917.

Other Fruits and Vegetables

The apple market continued rather light with 359 cars, of which about one-third were from New York State and about one-fourth from Washington. Asparagus from South Carolina ranged $4.00@6.00 per dozen bunches for top grades, in Northern wholesale markets, total shipments averaging about 8 cars per day, nearly all from South Carolina and California. Lettuce movement was 159 cars.

THE FIRST YEAR OF THE FEDERAL FARM LOAN SYSTEM

The Federal Farm Loan System has completed its first year of actual operation. The first charter issued to a Federal Land Bank is dated March 1, 1917, and the charters for the other eleven were issued during that month. Borrowing under the Federal Farm Loan System is done through national farm loan associations, and the first charter granted to one of these associations is dated March 27, 1917; so that while most of the work of organizing the banks, systematizing their business, appointing and training appraisers and the like had to be done after the end of March, 1917, it may be said that the banks have just about concluded their first year of operation. A statement of the business done during this first year is therefore of interest.

Before the system was put in operation it was argued that our American farmers would not organize for co-operative borrowing. The answer to this seems to be found in the fact that up to March 31, 1918, 2,808 national farm loan associations were incorporated, representing about four associations to each five counties in the United States. These associations average about twenty members, representing a total membership of about 56,000 farmers.

The twelve Federal Land Banks have received applications for over 120,000 loans, amounting to about $300,000,000. Many of these applications have been rejected, reduced or withdrawn. About 80,000 loans have been approved, amounting to over $160,000,000, and on over 30,000 of these loans money has been paid to the farmers to the amount of about $80,000,000. Many of the loans approved were for reduced amounts which the borrowers declined to accept.

Notwithstanding the unusual expenses incident to the operation of new machinery and to the appraisement and determination of title on many loans that have not yet been closed, the expense of the banks in doing business has been within such limits as to justify the expectation of the Farm Loan Board that these banks will easily be able to operate on a difference of one-half of one percent between the loaning rate and the rate which they pay on their bonds. None of the banks, of course, received any appreciable income from their business during the first half of the year, but during the last half the business of the Spokane Federal Land Bank, for example, was sufficiently profitable to come within about $10,000 of wiping out the excess of expenses incurred in the first half, and the volume of business on its books assures it a handsome surplus for the second year. Every borrower, when he takes out his loan, makes a subscription which increases the stock of the Federal Land Bank to the extent of five percent of the amount borrowed. These stock subscriptions of borrowers, in the case of several of the banks, are now so large that, in accordance with the provisions of the Act, the retirement of the original stock of the banks, which was principally subscribed by the Government, will begin within a few months.

ENGLAND CALLS FOR POTATOES

The following statement by the **British Prime Minister** shows **how** important are potatoes in the present crisis:

"There is no crop under existing war conditions which can compare with potatoes in importance as a food for either man or beast, and it would be quite impossible to plant too many potatoes this spring.

"If we can get a million acres under potatoes in Great Britain this year, the food situation will be safe, and farmers will have rendered an immense service to their country.

"The potato-grower is in the front line of the fight against the submarine. He can defeat it if he chooses, but victory depends on his action and exertion during the next few weeks."

(Signed) Lloyd George,
British Prime Minister.

GATHERED FROM AFAR

Chicago Herald says: "An official report from Paris shows that extensive experiments have been carried on by the French Government to determine the adaptability of seaweed as a substitute for oats as horse feed in the army. The results are reported as gratifying, and the cost is said to be much lower than oats."

Illinois Central crop reports for last week says: "Illinois—Weather generally favorable, with good rains latter part of week. Corn ground about 85 percent plowed; planting will start next week. Oats nearly all planted; about 75 percent up with good stand. Winter wheat in good condition. Iowa—Weather favorable with good rains. Good progress made in corn plowing. Small grains all seeded; early planting up, stand good. Wheat doing well. Kentucky and Tennessee—Weather cool, several heavy rains in Kentucky, which retarded preparations for planting."

Chicago Tribune says: "Most of the corn now coming in is not proving satisfactory and some cash handlers predict that no great amounts of grain will be delivered on contracts. It was said corn appears alright in samples, but becomes spotted and blistered after going thru the driers. Indications point to a decreased movement in the near future of corn and oats as country notices of consignments are now small in number. A number of sections report that comparatively little grain will be shipped until after planting is finished."

Special reports to the Price Current Grain reporter say that small grain crops have been sown at a seasonable time and under the most favorable conditions throughout the entire surplus grain producing territory. Rains have occurred generally so that the soil condition is favorable with the exception of a few scattered localities in each of the different states. The reports indicate an increase in the acreage of corn in Ohio, but some loss compared with 1917 in all the other states. Oats shows a material increase in all cases except in Nebraska and Oklahoma. The acreage under grass and to pasturage generally above a slight decrease. The pig crop compared with last year shows an increase in Ohio, Illinois, Missouri, South Dakota and Nebraska. A slight increase in Indiana and Iowa.

NITRATE OF SODA ARRIVING

The Department of Agriculture announces that the work of transporting and distributing the nitrate purchased by the Government is proceeding as rapidly as possible. Transportation difficulties have been great owing to war demands.

It was originally intended to transport 20,000 tons per month until the entire 120,000 tons had been received, but unavoidable difficulties prevented the carrying out of this program. Up to April 15, 21,536 tons had been received and unloaded at Savannah, Charleston and Wilmington — 17,000 tons of this have actually been shipped to farmers. Two more ships will unload soon and five others are on the way to Chile.

It is believed that the arrangements will meet the demand for those whose orders were received prior to February 4, the date set for closing the receipt of orders.

RECEIPTS AT STOCKYARDS IN MARCH

Receipts of cattle and hogs at stockyards during March of this year were greater than receipts in March, 1917, according to the monthly stockyards report issued today by the Bureau of Markets, United States Department of Agriculture. Receipts of cattle and hogs for the first three months of 1918 exceed receipts for the same period in 1917.

March receipts at 56 yards were: Cattle, 1918, 1,688,029; 1917, 1,324,995; hogs, 1918, 4,372,136; 1917, 3,367,588; sheep, 1918, 1,223,120; 1917, 1,232,543.

More cattle and hogs were slaughtered at 45 cities in March, 1918, than in March, 1917. The figures, giving 1918 totals first, were: Cattle, 997,115—810,507; hogs, 2,625,400—2,220,476; sheep, 653,783—782,552.

Increased receipts and shipments of horses and mules at 43 cities are shown by the report, the March figures, with 1918 given first, were: Receipts, 177,768—109,108; shipments, 114,076—107,109.

Grange

IS BOOZE PATRIOTIC?

We are wondering how any one can possibly defend booze in the name of patriotism. If so, the word must have taken on some very peculiar meaning of late. Is not the entire traffic, from beginning to end, about as unpatriotic as anything can be made? Is it patriotic to convert grain and fruit into poison, with half the world actually starving and the other half on short rations? Is it patriotic, while the nation needs money, to buy booze with money that could buy bonds? Is it patriotic for labor to be used in making and selling booze, that might better be used in manufacturing munitions, raising food, or fighting the Kaiser? Was it patriotic, when fuel was so scarce that the nation had to resort to heatless Mondays, to waste it making booze and warming saloons in which to sell it? Is it patriotic, where every American citizen needs to be at his best, to fill up countless thousands of the men—yes, and women too—with a rank poison whose effects are too well-known to need repeating, thus curtailing the nation's efficiency in every possible direction?

In these critical times, how dare anyone oppose the prohibition movement? It has been aptly noted that "the opposition is narrowing down to a few names that might have been selected from a Berlin telephone directory." Why should not every American voluntarily suspend a traffic so disastrous to the welfare of the country in its time of greatest peril? Is not propaganda in favor of the booze element rather a dangerous form of pro-Germanism?—E. M. A.

LUMBER LAW FOR THE FARMER

"Lumber is money" in these strenuous days, and the farmer who has some growing lumber on the rear of the old homestead is to be envied. Even a five-acre wood lot is not to be despised.

In this connection there are a number of legal points which cannot fail to be of interest to the average farmer, and I trust that the following instances may be of some assistance to the farmer who may find himself in similar circumstances.

Take, for instance, the case of Farmer Brown of Pennsylvania, who sold his farm to one Johnson, but in the deed from Brown to Johnson "said Brown reserves and still owns all lumber growing on said land which will make a log twenty feet long and ten inches at the top, and said Brown is to have twelve months from the date hereof to remove said logs from said land."

At the end of the twelve months Brown had about three quarters of the reserved lumber cut and hauled off, and the next morning Johnson came out where he was working.

"Time's up," he said.

"That's true," admitted Brown calmly, "but the deed stated that 'said Brown still owns' the lumber."

"Correct you are," agreed Johnson.

"Then if I still own it, its my property," argued Brown, "and surely I can take away my own property whether the time is up or not."

"No. Anything you don't take off in the twelve months is mine," declared Johnson.

And Johnson was right, for the general rule is that when land is sold with a reservation of the standing lumber to be removed within a certain time, the reservation only holds such lumber as may be removed during the time specified, and on the expiration of that time the lumber not removed goes to the buyer.

"The reservation in the deed," says the West Virginia Court in a case on the point, "vested in the seller a present title to the standing lumber, but his failure to remove it in the specified time operated to divest the title out of the seller and vest it in the buyer."

The same rule holds in Arkansas, Maine, Massachusetts, Michigan, New Jersey, Ohio, Pennsylvania, West Virginia and Wisconsin.

On the other hand, Brown, instead of selling the land to Johnson and reserving the lumber, might have sold the standing lumber to Johnson with twelve months in which to cut and remove it.

In this case it is plain that any lumber not cut during the twelve months would revert to Brown; but if Johnson cuts lumber during the twelve months but does not remove it, the question then arises whether Johnson can haul away the lumber already cut after the expiration of the twelve months.

He can, for in a case on this very point the Pennsylvania Supreme Court held that where the logs are cut down they become the personal property of the buyer who may remove them after the expiration of the time limit.

The same rule holds in Florida, Michigan, Minnesota, Wisconsin and other states.

In a majority of the states, however, the rule is that the buyer is only entitled to whatever lumber he can cut and haul away within the specified time.

This is the law in Arkansas, Kentucky, Louisiana, Mississippi, Montana, New York, North Carolina, Tennesssee, Oregon and Vermont.

Thirdly and lastly, Brown might have sold the standing lumber without specifying any time in which it was to be removed, and then it would be necessary to determine what time the buyer would have to cut and remove the lumber. Brown might say that he had to take it off in a week, and the buyer could argue that he had fifty years.

In this case the Courts of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Massachusetts, Michigan, New Hampshire, North Carolina, Pennsylvania and Tennessee have held that the buyer must remove the lumber within a reasonable time.

As to what is a reasonable time it is impossible to lay down any general rule which will apply to all cases. If the matter comes into court it will be left to say what is a reasonable time, considering all the circumstances of the particular case, such as the quantity and size of the lumber, the ease or difficulty of cutting and hauling it, the distance it has to be hauled, etc. — M. L. Hayward, Canada.

CIVIL SERVICE EXAMINATION

The U. S. Civil Service Commission announces an examination to fill positions open as market information assistants. The examination will be held May 21. For full information address Civil Service Commission, Washington, D. C.

Hay-Field Economy

CHAMPION, Deering, McCormick, Milwaukee and Osborne Mowers, Rakes and Tedders long ago became necessities in American farming. Year after year they have entered meadow and hayfield and made ready many millions of acres of hay for barn and stack. On thousands of farms, mowers, rakes and tedders, with one or another of the above names, do their work with satisfaction and little attention, and are put away until next year.

When you buy a mower, rake or tedder with the name Champion, or Deering, or McCormick, or Milwaukee, or Osborne on it, you may be certain that it has every really good improvement ever made in hay machines. You may know that there is no skimping in any parts; there never was, in International Harvester machines.

Choose an International Harvester mower, rake, and tedder. This means good, easy hay making, long service, and prompt repair service if you need it. Champion, Deering, McCormick, Milwaukee, Osborne — safe names in the haying season. WARNING: This is a year of big demand, scant supply, and handicapped shipping. Act early and be certain. See the dealer — write to the address below for folders.

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For Sale One Iron Age Power Sprayer with 100 Gallon tank and double action pump; used two seasons. One 3-4 T. AutoTruck, in good shape, cheap. L. F. Nicholas, RR No. 1, Mt. Bethel, Pa.

"Up To Date" Automatic Poultry Feeder and Exerciser

We have several hundred of these Machines which were manufactured before the advance and which we are going to close out at a low price. This enables you to buy at a considerable saving, considering the high cost of material and labor. This Feeder is rain, bird and rat-proof, adjustable for Baby Chicks or large fowls; strongly built of heavy galvanized sheet steel, 4 or 8-qt. sizes, price only **$4.00** Freight or parcel post prepaid. Order quickly. Check, Stamps or Money Order.

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An absolute fact. A Jersey farmer brought his assortment of old bags to us and asked us what they were worth. We told him and gave him on the spot check for $148.46. Previously he had been offered $90.00 on the same allotment of bags. (Name and address of farmer given to any one on request.)

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In business 30 years and absolutely dependable. You get a square and honest deal from this concern. We pay top market prices and send check or pay cash immediately on receipt of goods. Write us for price list or bring your bags to us yourself. Phone us, if desirable, and compare our prices with others.

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for unloading hay with Gas Engine. Can be operated from load. Has quick return drum and band brake. Price right. For Circular address
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Poultry

SPRING FEEDING OF HENS AND YOUNG CHICKENS

The poultry keeper finds two kinds of feeding necessary during the early summer months—one for the young stock and the other for the laying hens. It goes without saying that the two classes should be kept and fed separately. Oftentimes it is advisable to divide the young stock into two lots, one lot being composed of the young birds intended for the market or table, and the other of those which are to be retained for laying or breeding purposes. However, chickens are generally marketed at such an early age that it does no harm to feed the same rations to all right along except that the market chickens should be penned and given liberal rations of fat-forming foods for about a week before being sold.

In feeding laying hens the object should not be to keep them fully supplied, but rather in a condition eager for a little food all the time. Scratching is sometimes more important than feeding, and it is not necessary to feed more often than twice a day, morning and evening as a noon meal usually so satisfies the fowls that they will not be inclined to scratch and exercise. The hen that has to hustle for part of her living will be laying eggs when the overfed hen is digesting her food and quietly waiting for her owner to bring more.

As a rule, hens will give better results if compelled to come off the roosts in the morning and scratch for their breakfast, than if permitted to walk up to a trough and fill their crops. The morning feed of grain may be scattered in litter after the fowls have gone to roost at night, so they can begin to feed as early in the morning as they desire. In the evening the fowls may be given all they will eat; they will digest before morning all the crop will hold.

With the variety of food obtainable in the summer time, even for confined fowls, there is little excuse for having overfed birds. If the hens cannot run at large they can be provided with lawn clippings or grass cut especially for them. Chickens will never refuse green food, and will usually turn from grain to eat grass or chopped green stuff, especially if they are kept in a small run. Most farm flocks, however, have such wide range that it is never necessary to cut grass or other green food. Indeed, during the late spring and summer all feeding, except the morning meal of grain, may well be discontinued. But until after harvest grain cannot be obtained on the range and some should be supplied each day, preferably early in the morning.

In feeding the young stock it is well to bear in mind that the same rule holds true of chickens that is seen in the growth of other young stock. All young creatures have larger stomachs in proportion to total weight than have adults, because the young creature is fitted to build itself. It should, therefore, be kept growing. The earliest growth is always cheapest, because of active stomach and pliable body then. If any young creature be neglected or stunted its muscles become rigid, and never again will they be so elastic. Never again can food so easily stretch the muscles over flesh deposits.

By diligent regularity in care and feeding, it is easily possible to make chickens average two pounds at nine or certainly ten weeks of age. In the hands of a careless feeder dry food is safer, but puddings accelerate growth if they are skillfully handled. They must never be sloppy nor fermented. Make fresh each time. Stir with milk or scalding water and feed when very slightly warm, just what will be eaten promptly. From two to six weeks of age of chicks is the time when puddings are most effective. When the frames are well stretched and formed to bear fat it is time to begin the feeding of corn.

A chicken is not composed entirely of flesh but largely of bony structure, which requires mineral matter, or there may be deformity and slow growth. Plenty of small but sharp grit should be available at all times. The chicks should also have grass runs, both because they require the grass and the exercise afforded while securing it. Comfortable quarters at night, with abundance of dusting places and shade in warm weather, add to the growth of chicks.

It is generally more profitable to sell the market chickens when they weigh from one and one-half to two pounds than to hold and feed them for greater weights. As the weight increases there is a proportionate decrease in price as the season advances, so that the sum received for the chickens, no matter what their weight, seldom varies more than a few cents. The margin of profit is decreasing all the time, however, because of the additional labor and feed bestowed after the two-pound limit is passed.—W. F. Purdue, Ind.

STOVE BROODER MANAGEMENT

In brooding chicks with the stove brooder we have found that 150 to 200 is enough for each stove. We do not use curtains on the deflector because the temperature is likely to become too hot under the curtains and of course it is too cold outside. Then the chicks can find no place where they are comfortable. By using the deflector without curtains the chicks can select the distance from the stove where the temperature suits them best.

All of the hard coal ashes from the stove are emptied on the ground where they can be eaten by the chicks. The young birds seem to find in the ashes, mineral elements which they crave. We have the best success with brooder stoves when they are not filled clear to the top with coal. Then it is easier to note the condition of the fire by poking down thru the unburned coal. The fire can be left in good condition at night and a little experience enables the operator to determine how much fuel will be necessary to keep up a brisk fire until morning. With the stove brooder there seems to be more danger of overheating than underheating. For summer brooding when the weather is very warm it pays to watch the fires carefully and have a large open front space on the colony house where the brooder is installed. This will insure a fair amount of fresh air at night and help reduce the risk of overheating the house.—R. G. Kirby, Mich.

POULTRY PLANT SANITATION

A Berks County hired man, in search of a job, once told me he

worked for a poultry plant a few miles away which he described as "the most sanitarium poultry farm in the state." I told him many of my neighbors were really running "sanitariums" for sick hens instead of egg-producing plants. In these days of efficiency in poultry production we all aim to be sanitary in our methods, but many of us fall down on the job.

In my own experience I realize that an ounce of prevention is worth a pound of cure, and there is hardly a week that some part of the equipment does not receive a good dose of disinfectant. Houses, coops, incubators, brooders and fences come in for their share of germ-killing efforts.

The battle to get rid of mites, lice and disease germs is a constant one and one that requires the best efforts of the poultryman. There are few of us who can claim a victory for any length of time. The idea that the presence of parasites on poultry is a natural condition, like fleas on dogs, is a mistake one, and was probably invented by some poultryman who was too lazy to protect his flocks from the ravages of these pests. It is a fact that lice are found on very young chicks, but they come from the mother, who unavoidably distributes them to her brood. Every nest is a refuge for them, every roosting board a breeding place and in many instances they infest the brooder houses and the coops.

I have found no better way of ridding the poultry yard of these pests than by a good, strong disinfectant; one that will not only kill lice and mites and destroy disease germs and odors, but will not injure the birds. I formerly used crude and refined carbolic acid, but I found it was both dangerous and expensive. There are a number of commercial preparations on the market at the present time which are just as good disinfectants as carbolic acid, yet they do not stain the plumage of the birds and may be handled without danger to the attendant of the flock

No poultryman who expects to keep his birds in healthy condition should be without a sanitary schedule. Once a week—preferably on a Saturday, for visitors generally flock to the place on Sundays—I make it a rule to disinfect the premises. The dropping boards and runs are cleaned, the houses and coops thoroly sprayed with a liquid disinfectant, and a "drive" made on all places where lice, mites or disease germs may lurk. Care is taken to reach all corners, cracks and crevices, for these are the harboring places for mites.

Houses should be well ventilated and admit the sunshine as much as possible. There is nothing so good for the flocks as plenty of sunshine, and it is the cheapest thing we can offer them these days.

On the other hand, nothing favors the increase of lice, mites or disease as dampness, filth and darkness. As often as I get the time from other duties—not less than four times during the outdoor season—I thoroly whitewash the interiors of the houses, using four or five ounces of a disinfectant in the whitewash. This may seem like going to a great deal of trouble and expense, but I find that it pays in better health, increased vitality, comfortable and contented hens and a better egg yield.—A. J. Bradley, Montgomery Co., Pa.

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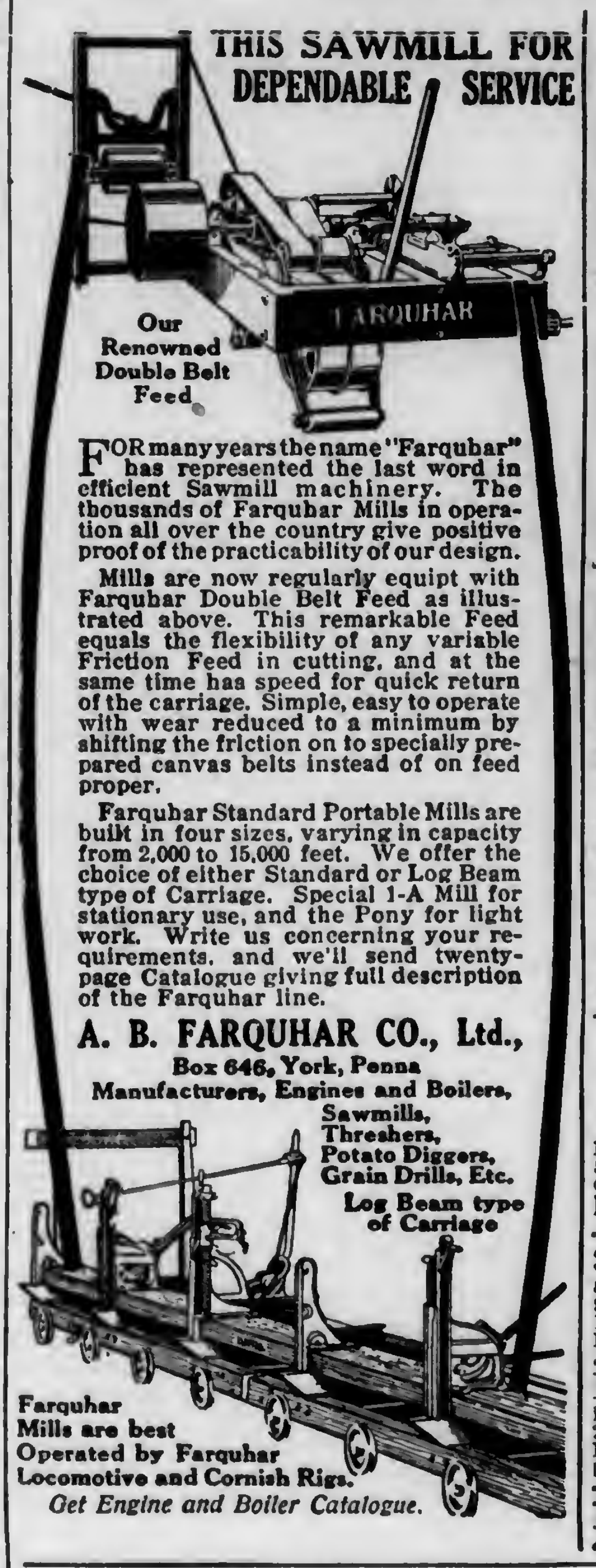

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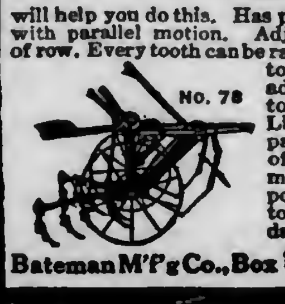

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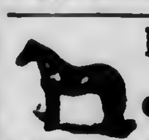

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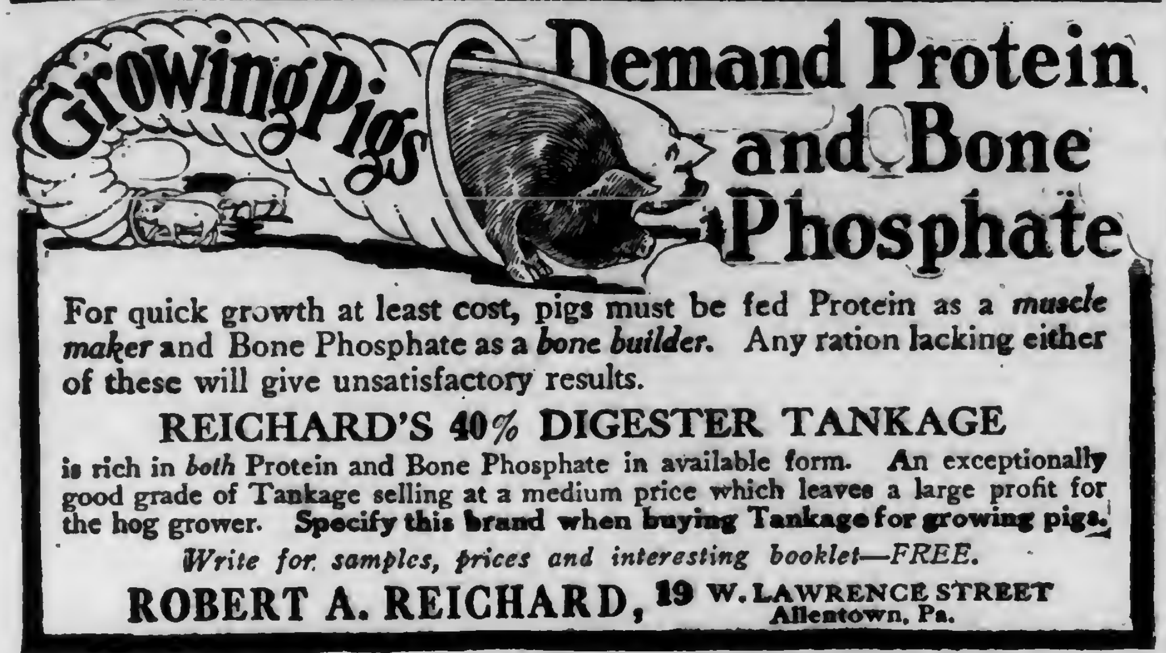
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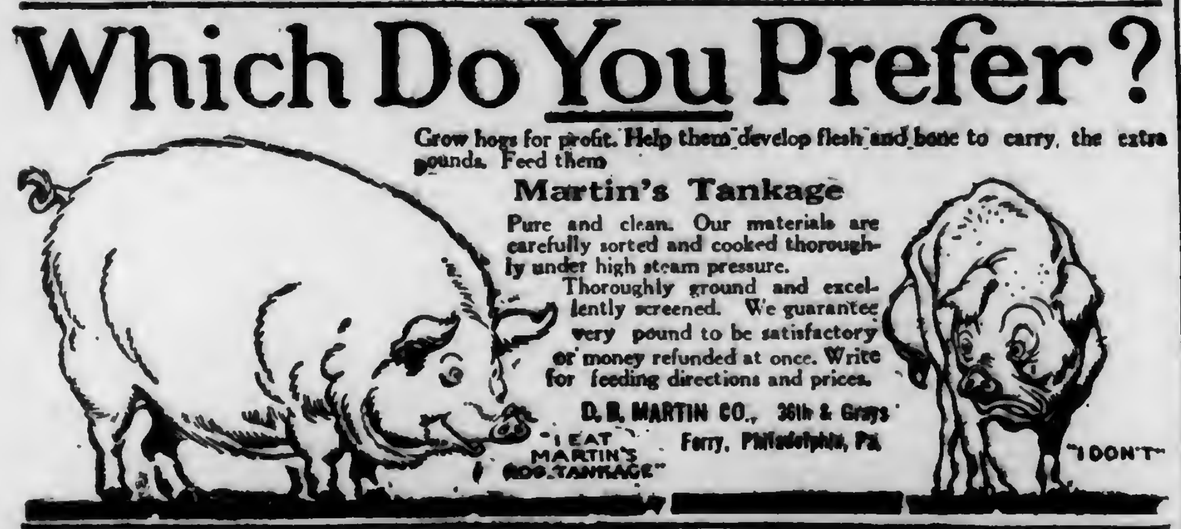
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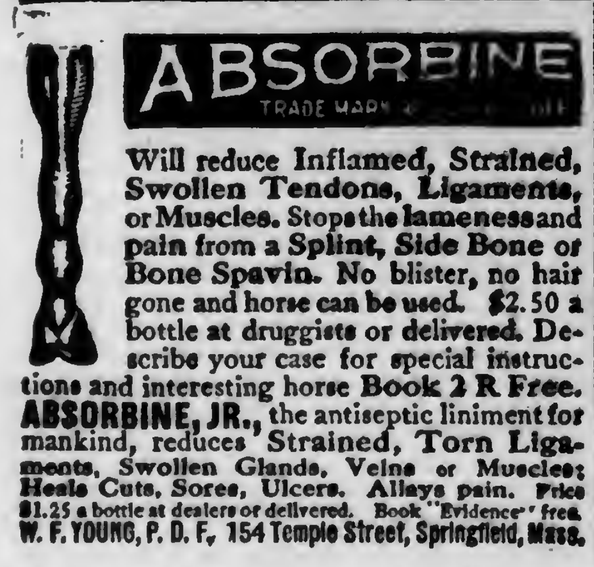
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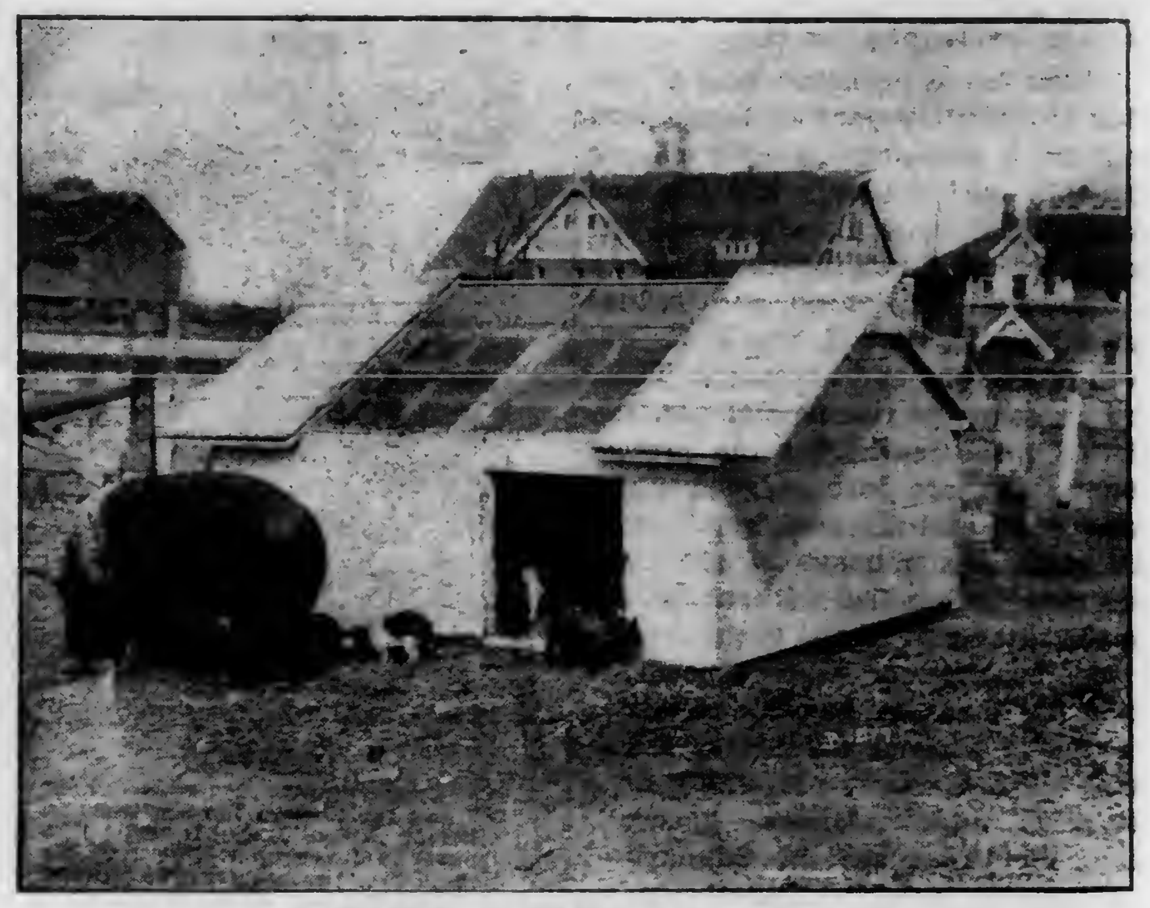
Live Stock

BREED ALL THE GOOD MARES

All good mares should be bred to the best available stallions this spring. The breeder of good Percherons never faced a more favorable future. Draft horses are urgently needed for war, city and farm use. Not more than 1,000,000 of the 21,000,000 horses on the farms and ranches of the United States will, at maturity, weigh over 1,600 pounds and classify as drafters. No other nation has draft seed stock in sufficient supply to produce a draft surplus of consequence. The United States alone can be counted upon to produce the draft horses, which the world needs.

Exports of horses to Europe for war purposes from September 1, 1914, to January 31, 1918, a period of 41 months, totalled 983,899 horses valued at $207,283,114, and 343,435 mules valued at $67,390,991. In addition to this the United States Army purchased more than 300,000 head of horses and mules between June 1, 1917 and March 1, 1918. Additional purchases for war use depend on the length of the war, transport space available and number of troops used. One horse or mule is reckoned on every four men put in the field, exclusive of cavalry; and the importance of cavalry, somewhat obscured during the last three years, is likely to receive greater emphasis as the battles approach open field warfare.—Wayne Dinsmore.



Sunlight in Colony Hog House

DRIED PRESSED POTATOES FOR SWINE

Two investigators of the Department of Agriculture have been making experiments with feeding dried pressed potatoes to swine. The experiment was conducted to determine the value of dried pressed potato in a ration for fattening hogs when supplemented by feeds rich in protein, and the effect of dried pressed potato on the quality of meat produced. The experimental feeding was continued for 56 days. The animals selected for the work were 12 high-grade Berkshire pigs between 5 and 6 months old, averaging approximately 150 pounds in weight, and quite uniform in age, quality, breeding and weight. The rations for the experimental feeding were as follows:

Lot 1.—(Check lot) 6 parts corn meal, 1 part tankage.

Lot 2.—6 parts dried pressed potato, 1 part tankage.

Lot 3.—6 parts dried pressed potato, 1 part linseed-oil meal (old process).

Lot 4.—6 parts dried pressed potato, 1 part fish meal.

The pigs in all of the lots ate well and regularly, and not one went off feed during the test. Small quantities of feed were left in the troughs after feeding time, but this was due to the fact that the pigs were given an excess quantity of feed. All of the pigs were in good, thrifty and growing condition when the experiment began, and they maintained good condition and health during the progress of the test. At the end of the test it was found that Lot 1 excelled all the others with respect to rate of gains, amount of feed consumed to produce 100 pounds of gain, and average final weight. They consumed a daily ration of 6.4 pounds, made a daily gain of 1.57 pounds, and required 403 pounds of feed to produce 100 pounds of gain.

The lot receiving dried pressed potato and fish meal (Lot 4) was a very close second to the check lot, and there was but 13 pounds difference in favor of the hogs in Lot 1. The pigs in Lot 4 consumed a daily ration of 5.7 pounds, made a daily gain of 1.32 pounds, and required 428 pounds of feed to produce 100 pounds of gain. The pigs in Lot 3 consumed a daily ration of 5.3 pounds, made a daily gain of 0.91 pound, and required 584 pounds of feed to produce 100 pounds of gain. The pigs in Lot 2 returned a smaller amount of gain for the feed consumed than any other lot.

Judging from the results obtained from the feeding experiment, the Department feels justified in concluding that dried pressed potato, when supplemented with a high-protein feed, is very efficient in producing rapid gains and a high finish when fed to swine. Altho dried pressed potato is a rather bulky feed, it has been demonstrated that pigs are able to consume a sufficient quantity to lay on good gains. Mixing or soaking with water for 15 or 20 minutes before feeding has proved to be the best method of feeding dried pressed potato. To give the best results, dried pressed potato must be fed in combination with other feeds in which the percentage of protein is high.

DRY QUARTERS FOR SHEEP

The sheep is a native of high, dry surroundings, therefore we must imitate nature in the care of the flock to obtain the best results. In order to keep the animal's vitality at the highest possible point, plenty of exercise and abundance of fresh air should always be provided. Nature has made ample provision to keep the animal warm, therefore a dry open shed is all that is neded for mature sheep. Very little trouble will be experienced from colds and pneumonia if dry well-ventilated quarters are provided.

Another vital factor in the health of the flock is the water supply. There is not an infectious or a parasitic disease known to sheep, according to the Pennsylvania State College, that is not transmitted by water. Too much emphasis cannot be laid on having the water pure and uncontaminated. The all too common practice of allowing the flock to drink from stagnant pools or even from streams that drain from other sheep pastures cannot be too strongly condemned. As long as such practices continue, parasitic infestation is certain.

PASTURES FOR HOGS

With spring almost at hand it is time that we turn our attention to providing some sort of pasture for our hogs the coming summer. No farmer can afford to be without it, nor can he over-estimate the importance of summer pasturage in producing cheap pork and profitable pork.

There are a number of crops adaptable to such pasture. The resourceful farmer soon learns that a sort of rotation can be worked out so that there will be available hog pasture from spring until fall. A very fine rotation of crops for hogging down can be arranged as follows: Beginning in spring, rye and hairy vetch green, Canada field peas and oats, rye and vetch ripe, rape, corn and soy beans. The hogs are taken from one plot to the next, in order. This plan is not workable on all farms, but may be modified to fit many.

Pasture alone will not produce cheapest pork. We must feed grain, but only a little is needed. If corn is at hand, only a minimum amount need be fed to secure good results if hogs are on good pasture. Alfalfa can be used very well as a pasture crop. Hogs fed 2 percent of their weight in corn daily and allowed to pasture on alfalfa will give the best and quickest gains of any combination known. But the majority of farmers do not have the alfalfa to pasture. For this reason I have given the above plan.

The crop most widely grown here for hog pasture is rape. Generally it will furnish ample pasture for 15 to 20 hogs per acre for about 12 weeks. By sowing successive plots, rape pasture may be provided for a much longer period. For best results sow about six pounds per acre. It also gives good results if we sow about a bushel of oats with grain drill following the sowing of the rape. Also run some clover seed thru the seed attachment.

Some of our past experience with pasturing clover is worth mentioning. We generally allow the hogs to have the run of the wheat and rye fields after the grain is hauled to the barn. By this time the young clover is large enough to allow light pasturing. Many pasture it with cattle to prevent it going to seed in the fall, but we prefer letting the hogs have it. If we turn the hogs in a piece of clover about the middle of May we find that if it is of average growth it will carry 10 to 12 hogs per acre. We must be careful to avoid pasturing it too hard. Mammoth clover serves well for this purpose if enough hogs can be turned in to keep it down till about June 10 or 15. When on clover, from one to three pounds of corn should be fed daily for best results.

We manage to have fields so fenced that the hogs can follow all harvested crops and pick up the waste. We thus eliminate all waste by turning it into pork. A few years ago a man was counted no farmer at all if hogs were allowed to eat up a crop that could be harvested. Today it is different. He is not in the game unless he has hogs to utilize the waste and he may profit by having a crop or two per year to hog down.—Warner E. Farver, Holmes Co., O.

WOOL PRODUCTION AND CONSUMPTION

The Department of Agriculture issues the following on wool stocks and records of wool production and consumption in this country:

The supplies of wool in the United States are large for this time of the year, just prior to the taking of the new clip, according to a statement issued by the United States Department of Agriculture in an article in the forthcoming yearbook. Imports of wool have been greater than usual during the last few years, with the result that stocks have gradually accumulated in dealers' and manufacturers' hands. At the beginning of this year these stocks amounted to about 617,000,000 pounds in terms of raw wool, and the prospective clip added to the pulled wool will make available in this country about 900,000,000 pounds in 1918.

A Fine Start For the Season's Crop

Imported Wool Not Included

This is about 250,000,000 pounds over the manufacturers' consumption in 1916, and does not take into consideration any wool which we may import in 1918. During recent years imports have exceeded the total production of raw wool in the United States by 12 to 20 percent. The demand for wool, of course, has increased greatly because of the requirements of the army, and it is difficult to estimate how great the needs will be in 1918.

Since 1914 the consumption of raw wool per capita has been increasing, according to the statement in the Yearbook article, but prior to that date for many years the per capita consumption had been decreasing.

Record of Consumption

In the fragmentary record of the consumption of raw wool and of the net manufactured wool in the foreign trade, as far as the latter can be estimated, it seems that the ultimate consumption of wool per capita averaged 5.85 pounds in six of the ten years, 1875-1884, and 5.14 pounds per capita in the four years, 1911-1914, followed by 7.93 pounds in 1915 and 6.25 pounds in 1916. In recent years more wool in manufactures was exported than was imported, and hence the lower ultimate per capita consumption of all wool than manufacturers' per capita consumption of raw wool.

Average For Three Years

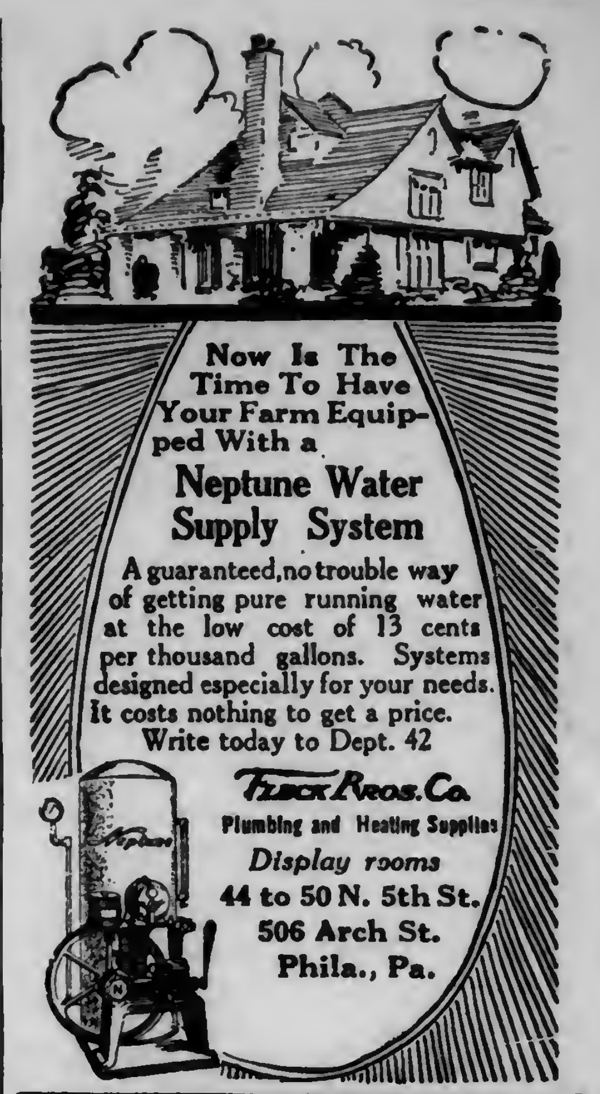
The wool clip and pulled wool of this country amounted to 306,500,000 pounds yearly in the decade 1905-1914, but in the last three years the average has been 287,000,000 pounds. By the time that the present war had begun to affect the situation, foreign wool had about equaled domestic wool in the national consumption, and since the war began it has largely exceeded domestic wool in consumption.

FEDERATED MEAT PRODUCERS' ASSOCIATION

The Federated Meat Producers' Association was formed at a meeting of cattle and hog men from eight central-western states at a recent meeting at Purdue University, Ind. The purposes of the Association are to unite all of the producers of the central west with common aims and to insure the meat production asked for by the Government; to organize the producers to back up their representative in the Food Administration and to see that the commission recently named by the President be properly informed. Invitations will be issued to other state bodies to become members of the Association which will perfect permanent organization at a meeting to be held at Manhattan, Kan., May 16.

According to some milk-production cost surveys that have been made in New York it has almost seemed that some farmers have tried to see how many cows they could support. Be sure that the cows are doing the supporting.

It takes less time, labor, and seed to make a test than it does to replant. And almost any corn planted this spring without forehand knowledge of germination will have to be replanted at a time when there will be a greater scarcity of seed and less assurance that it will sprout.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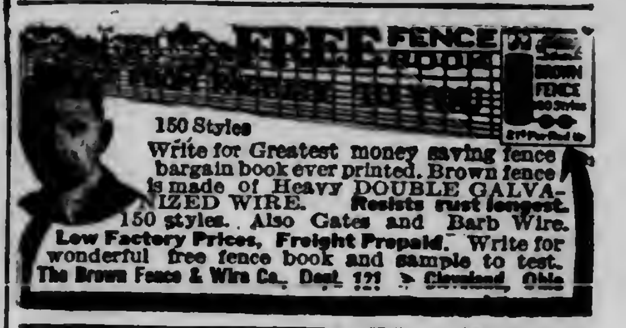
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Complete Talking Machine $2.95
"More than a Toy"
The *Baby* phonograph has heavy metal case, beautifully black enameled and spring motor which plays 3 or 4 Little wonder or Emerson records (or any record up to 7 inches) with one winding. Reproduces songs or music with volume and precision. Wonderful Values—Post paid upon receipt of price.
The Baby Phonograph Co. Dept. 33 Elyria, O.

Too Late to Classify

Cumberland County Breeders' Sale
Wednesday, May 22
at the
Carlisle Fair Grounds
Carlisle, Pa.
on Lincoln Highway
60—Registered Holsteins—60
Good records, good breeding, choice individuals. Send for catalogue. Come to the sale
I. V. OTTO, Rt. 6, Carlisle, Penna.

Percheron Stallion Bred from good imported stock, for sale or let on shares. Black. Weight 1700.
BARTON MARTIN. Clarence Center, N. Y.

REGISTERED DUROCS
Immune sows bred to Defender boar. Prices reasonable.
L. M. TAYLOR. MILLERTON, N. Y.

Cabbage Plants frostproof, early and late varieties. 500 $1.50, 1000 $2.50. Tomato 100 75c postpaid. Satisfaction guaranteed. Councill's Plant Farm, Franklin, Va.

WANTED A thoroughbred Newfoundland (DOG) Puppy.
P. H. SHRIVER, Taneytown, Carroll Co., Md.

Baby Chicks For Sale. Buff Leghorn, White Wyandottes, Barred Rocks and Mixed. JOHN WARD, Buckeye Hatchery, Millerstown, Perry Co., Pa.

Reg. Berkshires by Beauty's Masterpiece 3rd. Spring pigs, either sex, $10 each. R. S. GOOD, PEACH BOTTOM, PA.

HOLSTEIN BULL, age seven months, average record of grandams 31 lbs. Evenly marked. Well grown. Price $75. Oaks Dairy Farm, Wyalusing, Pa.

JACKS FOR SALE By
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Household

CORRECT MEASURING FOR MODERN RECIPES

Time was when the cook took a pinch of this and a handful of that, and "threw them" together and produced something, which, tho usually good when that particular cook made it, proved uncertain for others because of too indefinite directions.

With the advent of cooking teaching as a real science, all this has changed. Recipes have to be accurate; uniform measures become a necessity. Otherwise in a class of twenty students we would have twenty different results if those same students were asked to measure a spoonful of flour. To one girl a spoonful would mean all that her spoon would hold; to another it would mean slightly rounded perhaps, etc. To relieve this difficulty a regular system of measuring has been adopted.

Let us consider the first essential for accurate measuring. These are our utensils—a measuring cup of aluminum, glass or tin, a teaspoon, a tablespoon and a common case knife, or preferable a limber spatula. The measuring cup is divided into thirds and fourths, and is itself a half pint measure. Measuring spoons holding one-fourth, one-half, one teaspoonful and one tablespoonful are obtainable, and are more accurate than common spoons, which vary some what in size. However, they are not so necessary as measuring cups, for ordinary cups vary so considerably.

Flour, meal and powdered sugar should be sifted once before measuring. Soda, baking-powder, etc., should be stirred before measuring. All measures are made level.

Dry materials are put into a cup lightly with a spoon, being careful not to pack or shake down. The spatula should be used to level off the top. Fats, such as butter and lard, should be packed, then leveled. A cupful of liquid is all the cup will hold and carry without spilling. To measure a spoonful, dip the spoon into the ingredients, fill, lift and level. To measure one-half spoonful, first measure a whole level spoonful, then divide into halves lengthwise, and push one-half off. For a quarter spoonful, divide a half spoonful crosswise. For one-eighth spoonful, divide one-fourth spoonful crosswise. Thirds are obtained by dividing a spoonful crosswise twice. Less than one-eighth spoonful is called "a speck" or "a few grains;" or "a speck" is as much as will lie on the tip of a pointed knife.

These are standard cooking school measures and the ones used by the culinary experts of today.

Measuring Equivalents

The following table of equivalents will be useful to the cook:

Three teaspoonfuls, 1 tablespoonful; 16 teaspoonfuls, 1 cupful; 1 cupful, ½ pint; 1 gill, ½ cupful; 2 cups liquid, 1 pound; 4 cups sifted flour, 1 pound; 3 cups unsifted flour, 1 pound; 2 cups fat, 1 pound; 2 cups solid meat, 1 pound; 2 cups granulated sugar, 1 pound; 2⅔ cups brown sugar, 1 pound; 2⅔ cups powdered sugar, 1 pound; 5 cups ground coffee, 1 pound; 8 large eggs, 1 pound; 9 medium eggs, 1 pound; 10 small eggs, 1 pound; 2 tablespoons liquid, 1 ounce; 1 square chocolate, 1 ounce.

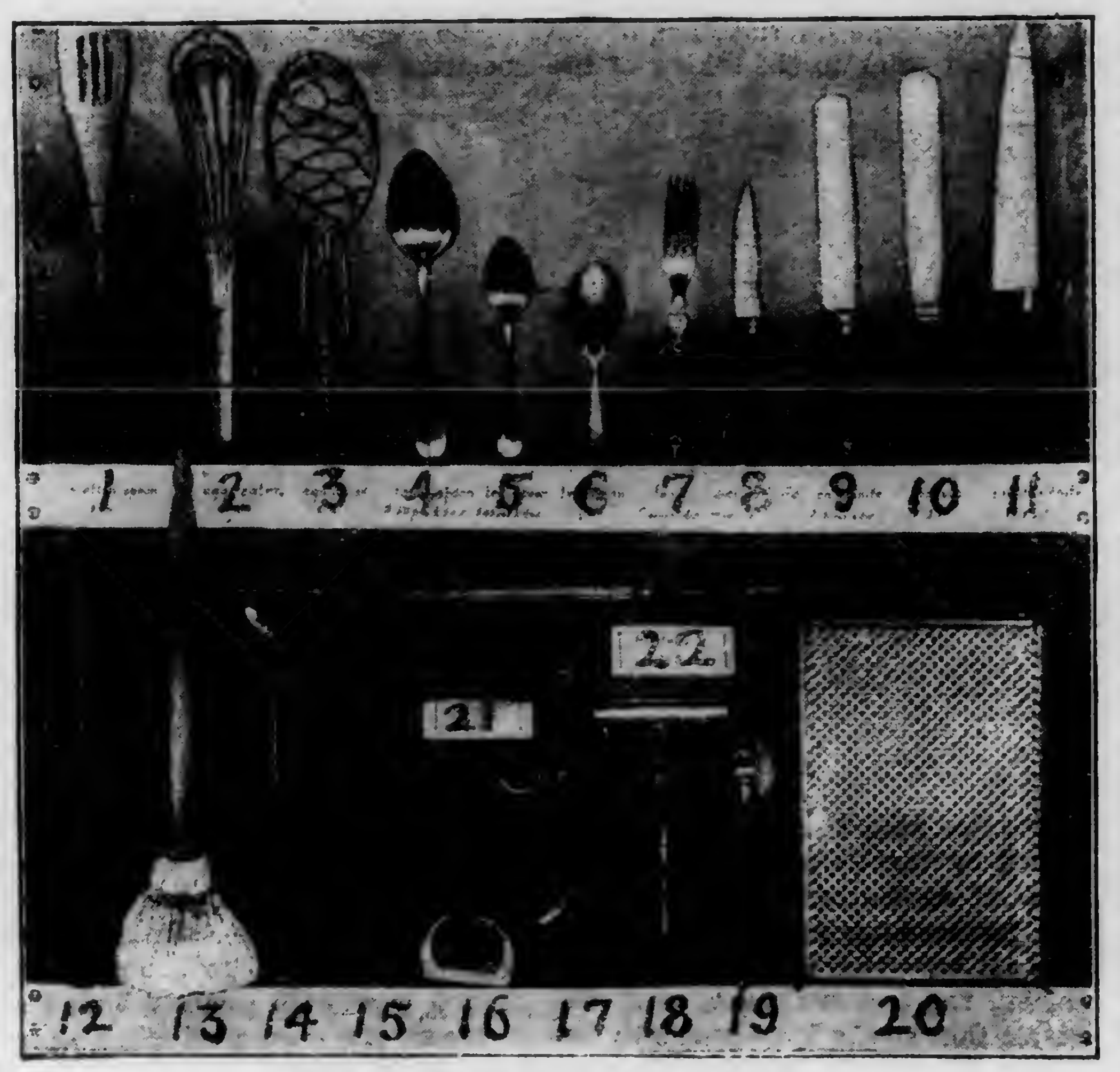
While this table is not complete it covers all commonly used equivalents.

UNUSUAL PIES UNUSUALLY GOOD

Rice Pie Crust.—Line a greased pie pan with cold boiled rice, bringing the rice well over the edge of the pan and shaping it with a spoon dipped in milk. Bake the crust in a moderate oven until it is slightly brown. Use the crust like any pastry for a one-crust pie.

Sour Milk Pie.—Ingredients: 1 cup buttermilk or thick clabbered milk, 2 tablespoons cornstarch, mixed with 4 tablespoons cold water, ¾ cup maple syrup, 2 egg yolks (beaten), 1 lemon (juice and grated rind), 1 tablespoon melted butter. Heat the milk in a double boiler. When it is warm, add the cornstarch mixed with cold water. Cook the mixture until it is thick, then add the other ingredients, and cook until clear. Turn it into a baked rice crust, cover with the following meringue, and bake in a slow oven 25 minutes.

Meringue for Sour Milk Pie.—Whites of 2 eggs, 4 tablespoons maple syrup, ¼ teaspoon vanilla. Beat the egg whites until they are stiff, add the syrup gradually, and then the vanilla.



SMALL TOOLS FOR THE COOK

1, Wooden stirrer; 2, 3, egg whips; 4, 5, large and small mixing spoons; 6, egg drainer; 7, steel fork; 8, peeling knife; 9, 10, limber knives; 11, carving knife; 12, ice-pick; 13, dish-swab; 14, soap shaker; 15, vegetable brush; 16, plate scraper; 17, tack puller; 18, apple corer; 19, can opener; 20, grater; 21, whetstone; 22, knife sharpener.

Cottage Cheese Pie.—Ingredients: 1 cup cottage cheese, ½ cup maple syrup, ⅔ cup milk, yolks of 2 eggs (beaten), 2 tablespoons melted butter, salt, ½ teaspoon vanilla. Mix the ingredients in the order given. Bake the pie in one crust made of rice as directed above. Cool it slightly, cover with meringue, and brown in a slow oven.

Lemon Cheese Pie.—Ingredients: 1 cup cottage cheese, ⅔ cup honey or ¾ cup corn syrup, yolk of 1 egg (beaten), ⅔ cup milk, 2 tablespoons butter, 2 tablespoons cornstarch, juice and grated rind of 1 lemon. Heat the milk, add the sweetening and the cornstarch, and cook the mixture until it is thick, stirring it constantly. Then add the egg, and cook the mixture until the egg thickens. Add the cheese, the butter, the juice and the rind of the lemon. Pour the mixture into a well-baked rice crust. Cover it with meringue, and brown in a slow oven. —U. S. Food Administration.

EGG BREADS FOR SPRING BREAKFASTS

Eggs and milk are plentiful and now is the time to make egg breads. The milk and eggs that go into muffins and cakes are not lost; you get it all back in the bread. There is more food in cornmeal and rice muffins than in wheat biscuit, and we'll help considerably in averting a wheat famine if we serve these muffin breads at our meals at least twice a day until August first.

Below are suggestions for seven breakfasts and recipes for seven egg breads:

Sunday

Menu.—Cornmeal waffles, honey rice and milk.

Recipe for the Waffles.—Ingredients: ½ cup cornmeal, ½ cup, 75 percent wheat flour, 1 tablespoon melted butter, ½ teaspoon soda, 1 cup boiled rice, 2 eggs well beaten, 1 teaspoon salt, 1 cup sour milk. Sift together the flour, soda and salt; add the other ingredients and beat thoroly; have irons hot and well greased.

Monday

Menu.—Corn, rice muffins, baked potatoes, chicken hash.

Recipe for Muffins.—Ingredients: 1 cup cornmeal, 1 cup boiled rice, 1 cup milk, 2 eggs, 1 tablespon fat, 1 teaspoon salt, 2 teaspoons baking powder. Mix the cornmeal, rice, milk and shortening together; beat 5 minutes; then add the well-beaten eggs, beat 2 minutes, then add the baking powder. Bake in hot greased muffin tins or in shallow pan. Boiled hominy may be used in the above recipe instead of rice.

Tuesday

Menu.—Buckwheat muffins, boiled hominy, bacon.

Recipe for Wheat Muffins.—Ingredients: 1 cup milk, 1 tablespoon fat, 1 tablespoon syrup, 1 egg, 1 teaspoon salt, 4 teaspoons baking powder, 1 cup 75 percent wheat flour, ⅞ cup buckwheat flour. Sift the dry materials together. Add to the cup of milk the melted fat, syrup and beaten egg. Combine these two mixtures, stirring lightly without beating. Bake about 30 minutes in a moderately hot oven.

Wednesday

Menuu.—Spoon bread, baked potatoes, salt fish.

Recipe for Spoon Bread.—Ingredients: 1 cup white cornmeal, 1½ cups boiling water, 1 cup sweet milk, 1 teaspoon salt, 2 teaspoons baking powder, 2 eggs. Sift the meal into a bowl. See that the water is boiling vigorously. Pour over the meal, stirring at the same time. When lukewarm, add the sweet milk, the well-beaten egg yolk and beat thoro. Add the baking powder and last fold in the stiffly beaten whites. Pour into a hot, well-greased baking dish and bake in a moderately hot oven thirty minutes. Serve from the baking dish with a spoon.

Thursday

Menu.—Rice crumpets, syrup, oatmeal.

Recipe for Crumpets.—Ingredients: 1½ cups milk, 1 tablespoon fat, 3 eggs, 1 teaspoon salt, 2 teaspoons baking powder, 1 cup boiled rice, 1 cup cornmeal, ½ cup 75 percent wheat flour. Combine as for muffins. Cook on hot greased griddle.

Friday

Menu.—Barley muffins, hash-brown potatoes, bacon.

Recipe for Barley Muffins.—Ingredients: 1 cup milk, 1 tablespoon fat, 1 tablespoon syrup, 1 egg, 1 teaspoon salt, 4 teaspoons baking powder, 1 cup 75 percent wheat flour, 1½ cup barley flour. Follow the directions for making buckwheat muffins.

Saturday

Menu.—Oatmeal muffins, creamed potatoes, scrambled eggs.

Recipe for Oatmeal Muffins.—Ingredients: 1 cup milk, 1 tablespoon fat, 2 tablespoons syrup, 1 egg, 1 teaspoon salt, 4 teaspoons baking powder, ½ cup 75 percent wheat flour, 1½ cup oatmeal. Sift the salt, baking powder and the flour together, mix in the oatmeal. Add to the cup of milk, the melted fat, syrup and beaten egg. Combine these two mixtures, stirring lightly without beating. Bake about 30 minutes in a moderately hot oven. Use granulated oatmeal or put rolled oats thru food chopper.—U. S. Food Administration.

THE POTATO AS FOOD

What body need does the potato serve? The proportions of its separate food elements are: Water—75 to 80 percent; carbohydrate (chiefly starch)—18 to 20 percent; protein—2 to 2½ percent; fat—trace; mineral matter—1 percent.

Since the amount of protein is small, the potato is not highly valued as a body builder. The chief food element of the potato is starch, therefore, one of its values must be that of a fuel food. That is, it furnishes energy for muscular work.

Its large amount of water and its fiber (included in the carbohydrate) put the potato in the class of bulky foods, especially valuable for supplying balast to diet.

The mineral matter in potatoes is very valuable, containing as it does potash, phosphorus, iron and other mineral substances.

The potato also seems to contain some of the little understood substances which appear to be essential to growth and health.

In addition to these actual food values which are so desirable, the potato can be prepared in a variety of ways, a fact which prevents monotony in its use, and it can also be used in rather large amounts. Because of the scarcity of wheat, a wider use of potatoes should be made from now until wheat harvest sends the new wheat to mill.

Two of the less used but desirable potato dishes are: Shepherd's pie and potatoes with cheese, prepared the same as macaroni and cheese. In place of macaroni use cold baked or boiled potatoes. These suggestions come from the Pennsylvania State College home economics extension department.

THE INDOOR CLOSET

Last fall we installed one of the indoor chemical closets advertised in Pennsylvania Farmer. After using it all winter we feel that we can safely recommend it to others, especially where the outdoor privy has to be used by delicate women. Some of these outdoor closets that I have in mind are nothing more than a few boards fastened together and resting above ground on foundations of loose stones. They are not only unsanitary breeding places for vermin, but unsafe and cold to use during our long cold winters. The indoor closet takes up little room, is clean, safe to use and is a perfect boon to country women, especially if there is sickness or old people in the home.

We empty ours about once in 16 or 18 days. There are three in the family who use it during that time. I wash and scald and air the container before recharging it with the chemicals. To two gallons of water we add the powdered chemical, then pour over the top the chemical oil. This oil entirely covers the water, and makes it odorless and safe to use.

These closets may be set up anywhere in the home where there is access to a chimney for the small vent pipe, or this pipe may be carried up thru the roof. If used according to directions and properly set up, they will be satisfactory in every way.—Mrs. A. A. K., Lackawanna Co., Pa.

HOT MILK DRINKS

Hot milk is a restful drink when one is tired, and a sleep-inviting drink before going to bed. Hot milk is an agreeable change to offer children and a nutritious addition to the supper meal. Why not hot milk between meals instead of the customary piece of bread? Heat it in a double boiler, and don't let it boil.

Cocoa. — Children should have milk, yet some dislike it. Cocoa, the universal favorite, is a solution. Cocoa and bread make a good supper. For children less cocoa can be used than the recipe calls for, and they like it just as well. Ingredients: 1 teaspoon cocoa, 1 teaspoon sugar, ½ cup water and ½ cup milk or 1 cup milk. Mix the sugar and cocoa, and stir in enough boiling water to make a paste. Add ½ cup boiling water, cook 15 minutes. Add the milk, heat and serve. If all milk is used, boil the cocoa and sugar with just enough water to make a thin paste. They add the milk.

Cafe au Lait.—For the grown-ups French coffee or cafe au lait (coffee with milk) is a nourishing drink as well as a stimulating beverage. Make strong black coffee, and while hot add to it one-third or one-half as much scalding hot milk. Cover and set in boiling water until needed. Add cream when served.

Egg Broth.—This hot drink is a meal in itself. It is especially useful for babies over a year old and for invalids. Ingredients: 1 egg, ½ teaspoon sugar, 1 teaspoon butter, 1 pint hot milk, ½ teaspoon salt. Beat the egg and sugar together; add the hot milk and butter, and beat thoroly. Add the salt and serve at once. —U. S. Food Administration.

SMALL vs. LARGE KITCHENS

As a rule the small kitchen is the handy kitchen, tho much may be said in favor of the big, roomy, airy farm-house workroom. We prefer just space enough to hold the necessary furniture and allow room enough to move about conveniently. The amount of furniture really essential may be largely a matter of individual taste, but personally I like, first of all, a good range in a well-lighted location; sink and dish cupboard to the left, tho if the dining room happens to be reached easiest from the right side of the range it is very obvious that dish-washing should be done on this side also.

A small work table beside the cabinet is a great convenience, as the cabinet is a little crowded if one is doing very much cooking or baking at one time. It is a question at our house which could be spared with least inconvenience, the range or the cabinet. My cabinet holds everything required for baking than can be kept in a warm place, and as it stands in a corner between two windows, one of which is a very efficient cooler, everything can be kept there in winter and everything but milk and butter in summer. I can stand at the cabinet and prepare absolutely anything in the baked line, and only one step is required to reach the oven.

I know of one good housekeeper who insists that the kitchen should be large enough to accommodate whatever service it may be required for, which includes a cool corner and an easy chair, a couch for the temporary invalid where he may be waited on without unnecessary steps, and a shelf of good books for the spare minute while watching something in the oven. However, I'd rather have these in the next room, so that the door could be shut if, for example, the invalid wants to nap.—Mrs. E. M. A., Chautauqua County, Pa.

POTATO OMELET

Beat together two eggs and a cup and a half of milk. Season with salt and pepper and add a bit of baking powder. Slowly add this to one and a half cups of mashed potato—shredded lightly with a fork if cold—and when smooth pour into a hot frying pan and brown in butter, allowing the egg to set. This may be served with poached eggs if desired or minced ham may be added.—E. P. L., Philadelphia.

PENNSYLVANIA FARMER PATTERNS

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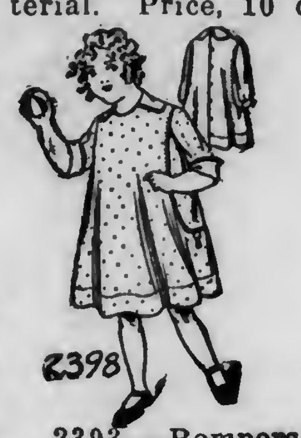
2398.—A Bit Different.—This dress is easy to develop. You may have it with the sleeve in wrist length or with a short, elbow sleeve. Pattern is in 4 sizes: 2, 4, 6 and 8 years. Size 3 requires 2½ yards of 36-inch material. Price, 10 cents.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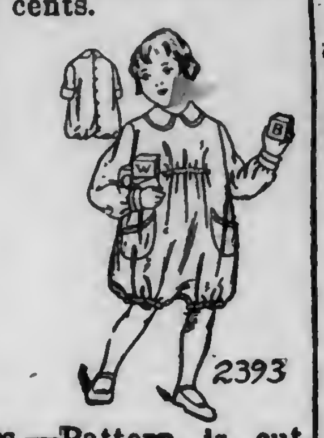
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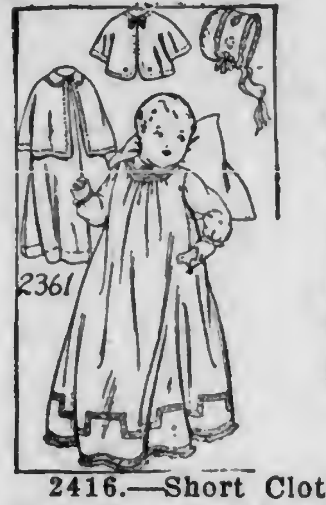
2393.—Rompers.—Pattern is cut in 4 sizes: 1 year, 2, 3 and 4 years. Size 4 requires 3½ yards of 24-inch material. Price, 10 cents.

2361.—Some Things for Baby.—This set comprises a cloak with cape, a dress, a cap and a kimono jacket. Pattern comprises all of the styles illustrated. It is cut in one size only. The cloak requires 3⅜ yards. The dress requires 2⅝ yards. The cap requires ½ yard. The kimono requires ¾ yard of 36-inch material. Price, 10 cents.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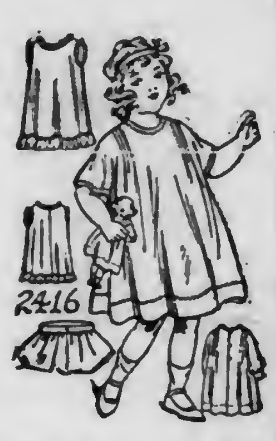
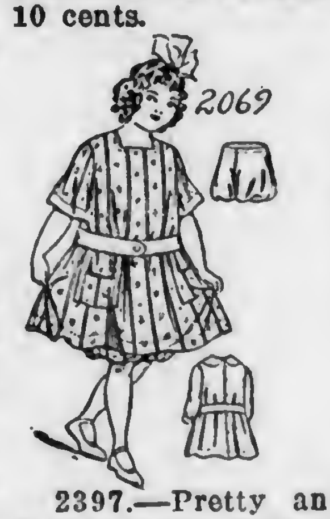

2416

2416.—Short Clothes Set. — The dress is neat and easy to make. The sleeve, cut in one with the body portions, may be finished in wrist or elbow length. The slip petticoat could do as a dress for warm summer days. The drawers are cut on comfortable, loose lines. Pattern is in 5 sizes: 6 months, 1 year, 2, 3 and 4 years. The dress will require 2 yards of 36-inch material. The petticoat, 1⅝ yards of 27- or 36-inch material. The drawers, 1¼ yards of 27- or 36-inch material, for a 3-year size. Price, 10 cents.

2069.—Play Suit.—It may have a collar or be finished with cool, square neck outline, have wrist-length sleeves with a band cuff or short sleeves. The bloomers are cut with comfortable fulness and will take the place of underskirts. Pattern is cut in 6 sizes: 2, 4, 6, 8, 10 and 12 years. Size 8 requires 3 yards for the dress and 1⅝ yards for the bloomers, of 44-inch material. Price, 10 cents.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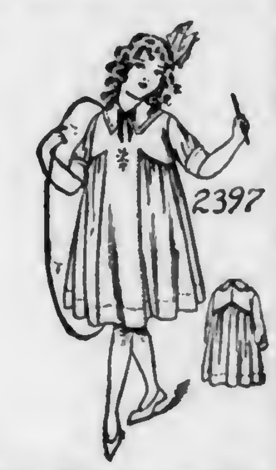
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2397.—Pretty and Simple.—This design is cut with the front in yoke panel effect. The skirt portions are full and gathered. Pattern is in 5 sizes: 2, 4, 6, 8 and 10 years. Size 6 requires 3⅛ yards of 36-inch material. Price, 10 cents.

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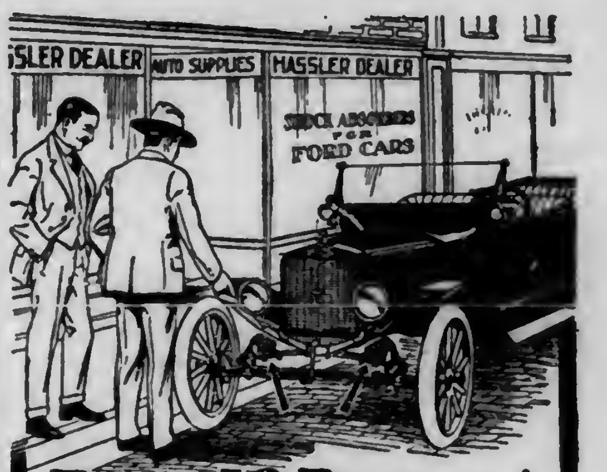

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34x4	8.50	37x4½	10.00

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The Nightman's Story

By Frank H. Spearman

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His full name was James Gillespie Blaine Lyons; but his real name was Bullhead—just plain Bullhead.

When he began passenger braking the trainmaster put him on with Pat Francis. The very first trip he made, a man in the smoking car asked him where the drinking water was. Bullhead, tho sufficiently gaudy in his new uniform, was not prepared for any question that might be thrown at him. He pulled out his book of rules, which he had been told to consult in case of doubt, and after some study referred his inquirer to the fire-bucket hanging at the front end of the car. The passenger happened to be a foreigner and very thirsty. He climbed up on the Baker heater, according to directions, and did at some risk get hold of the bucket—but it was empty.

"Iss no vater hier," cried the second-class man. Bullhead sat half way back in the car, still studying the rules. He looked up surprised but turning around pointed with confidence to the firepail at the hind end of the smoker.

"Try the other bucket, Johnnie," he said, calmly. At that every man in the car began to choke; and the German, thinking the new brakeman was making funny of him, wanted to fight. Now Bullhead would rather fight than go to Sunday School any day, and without parley he engaged the insulted homesteader. Pat Francis parted them after some hard words on his part; and Kenyon, the trainmaster, gave Bullhead three months to study up where the water cooler was located in Standard, A pattern, smoking cars. Bullhead's own mother, who did Callahan's washing, refused to believe her son was so stupid as not to know; but Bullhead, who now tells the story himself, claims he did not know.

When he got back to work he tried the freight trains. They put him on the Number Twenty-nine, local, and one day they were drifting into the yard at Goose River Junction when there came from the cab a sharp call for brakes. Instead of climbing out and grabbing a brakewheel for dear life, Bullhead looked out the window to see what the excitement was. By the time he had decided what rule covered the emergency his train had driven a stray flat half way through the eating house east of the depot. Kenyon, after hearing Bullhead's own candid statement of fact, coughed apologetically and said three years; whereupon Bullhead resigned permanently from the train service and applied for a job in the roundhouse.

But the roundhouse—for a boy like Bullhead. It would hardly do. He was put at helping Pete Beezer, the boiler washer. One night Pete was snatching his customary nap in the pit when the hose got away from Bullhead and struck his boss. In the confusion, Peter, who was nearly drowned, lost a set of teeth; that was sufficient in that department of the motive power; Bullhead moved on, suddenly. Neighbor thought he might do for a wiper. After the boy had learned something about wiping he tried one day to back an engine out on the turntable just to see whether it was easy. It was; dead easy; but the turntable happened to be arranged wrong for the experiment; and Neighbor, before calling in the wrecking gang, took occasion to kick Bullhead out of the roundhouse bodily.

Nevertheless, Bullhead, like every Medicine Bend boy, wanted to railroad. Some fellows can't be shut off. He was offered the presidency of a Cincinnati bank by a private detective agency which had just sent up the active head of the institution for ten years; but as Bullhead could not arrange transportation east of the river he was obliged to let the opportunity pass.

When the widow Lyons asked Callahan to put Jamie at telegraphing the assistant superintendent nearly fell off his chair. Mrs. Lyons, however, was in earnest, as the red-haired man soon found by the way his shirts were starched. Her son, meantime, had gotten hold of a sounder, and was studying telegraphy, corresponding at the same time with the Cincinnati detective agency for the town and county rights to all "hidden and undiscovered crime," on the Mountain Division—rights offered at the very reasonable price of ten dollars by registered mail, bank draft or express money order; currency at sender's risk. The only obligations imposed by this deal were secrecy and a German silver star; and Bullhead, after holding his trusting mother up for the ten, became a regularly installed detective with proprietary rights to local misdeeds. Days he plied his sounder, and nights he lay awake trying to mix up Pete Beezer and Neighbor with the disappearance of various bunches of horses from the Bar M ranch.

About the same time he became interested in dentistry; not that there is any obvious connection between railroading and detective work and filling teeth—but his thoughts just turned that way and following the advice of a local dentist, who didn't want altogether to discourage him, Bullhead borrowed a pair of forceps and pulled all the teeth out of a circular saw to get his arm into practice. Before the dentist pronounced him proficient, though, his mother had Callahan reduced to terms, and the assistant superintendent put Bulhead among the operators.

That was a great day for Bullhead. He had to take the worst of it, of course; sweeping the office and that; but whatever his faults, the boy did as he was told. Only one vicious habit clung to him—he had a passion for reading the rules. In spite of this, however, he steadily mastered the taking, and, as for sending, he could do that before he got out of the cuspidor department. Everybody around the Wickiup bullied him, and maybe that was his salvation. He got used to expecting the worst of it, and nerved himself to take it, which in railroading is half the battle.

A few months after he became competent to handle a key the nightman at Goose River Junction went wrong. When Callahan told Bullhead he thought about giving him the job, the boy went wild with excitement, and in a burst of confidence showed Callahan his star. It was the best thing that ever happened, for the assistant head of the division had an impulsive way of swearing the nonsense out of a boy's head, and when Bullhead confessed to being a detective a fiery stream was poured on him. The foolishness couldn't quite all be driven out in one round; but Jamie Lyons went to Goose River fairly well informed as to how much of a fool he was.

Goose River Junction is not a lively place. It has been claimed that even the buzzards at Goose River Junction play solitaire. But apart from the utter loneliness it was hard to hold operators there on account of Nellie Cassidy. A man rarely stayed at Goose River past the second paycheck. When he got money enough to resign he resigned; and all because Nellie Cassidy despised operators.

The lunch counter that Matt Cassidy, Nellie's father, ran at the Junction was just an adjunct for feeding train crews and the few miners who wandered down from the Glencoe spur. Matt himself took the night turn, but days it was Nellie who heated the Goose River coffee and dispensed the pie—contract pie made at Medicine Bend, and sent by local freight classified as ammunition, loaded and released, O. R.

It was Nellie's cruelty that made the frequent shifts at Goose River. Not that she was unimpressible, or had no heroes. She had plenty of them in the engine and the train service. It was the smart-uniformed young conductors and the kerchiefed juvenile engineers on the fast runs to whom Nellie paid deference, and for whom she served the preferred doughnuts.

But this was nothing to Bullhead. He had his head so full of things when he took his new position that he failed to observe Nellie's contempt. He was just passing out of the private detective stage; just getting over dental beginnings; just rising to the responsibility of the key, and a month devoted to his immediate work and the study of the rules passed like a limited train. Previous to the coming of Bullhead, no Goose River man had tried study of the rules as a remedy for loneliness; it proved a great scheme; but it aroused the unmeasured contempt of Nellie Cassidy. She scorned Bullhead unspeakably, and her only uneasiness was that he seemed unconscious of it.

However, the little Goose River girl had no idea of letting him escape that way. When scorn became clearly useless she tried cajolery—she smiled on Bullhead. Not till then did he give up; her smile was his undoing. It was so absolutely novel to Bullhead—Bullhead, who had never got anything but kicks and curses and frowns. Before Nellie's smiles, judiciously administered, Bullhead melted like the sugar she began to sprinkle in his coffee. That was what she wanted; when he was fairly dissolved, Nellie like the coffee went gradually cold. Bullhead became miserable, and to her life at Goose River was once more endurable.

It was then that Bullhead began to sit up all day, after working all night, to get a single smile from the direction of the pie rack. He hung, utterly miserable, around the lunch room all day, while Nellie made impersonal remarks about the colorless life of a mere operator as compared with life in the cab of a ten-wheeler. She admired the engineer, Nellie—was there ever a doughnut girl who didn't? And when One or Two rose smoking out of the alkali east or the alkali west, and the mogul engine checked its gray string of sleepers at the Junction platform, and Bat Mullen climbed down to oil 'round—as he always did—there were the liveliest kind of heels behind the counter.

Such were the moments when Bullhead sat in the lunch room, unnoticed, somewhat back where the flies were bad, and helped himself aimlessly to the sizzling maple syrup—Nellie rustling back and forth for Engineer Mullen, who ran in for a quick cup, and consulted, after each swallow, a dazzling open-faced gold watch, thin as a double eagle; but Bat at twenty-one was pulling the fast trains and carried the best. And with Bullhead feeding on flannel cakes and despair, and Nellie Cassidy looking quite her smartest, Mullen would drink his coffee in an impassive rush, never even glancing Bullhead's way—absolutely ignoring Bullhead. What was he but a nightman, anyway? Then Mullen would take as much as a minute of his running time to walk forward to the engine with Miss Cassidy, and stand in the lee of the drivers chatting with her, while Bullhead went completely frantic.

It was being ignored in that way, after her smiles had once been his, that crushed the night operator. It filled his head with schemes for obtaining recognition at all hazards. He began by quarrelling violently with Nellie, and things were coming to a serious pass around the depot when the Klondike business struck the Mountain Division. It came with a rush and when they began running through freight extras by way of Goose River short line, day and night, the Junction station caught the thick of it. It was something new altogether for the short line rails and the short line operators, and Bullhead's night trick, with nothing to do but poke the fire and pop at coyotes, became straightway a busy and important post. The added work kept him jumping from sundown till dawn, and kept him from loafing daytimes around the lunch counter and ruining himself on fermented syrup.

On a certain night, windier than all the November nights that had gone before, the night operator sat alone in the office facing a resolve. Goose River had become intolerable. Medicine Bend was not to be thought of, for Bullhead now had a suspicion, due to Callahan, that he was a good deal of a chump, and he wanted to get away from the ridicule that had always and everywhere made life a burden. There appeared to Bullhead nothing for it but the Klondike. On the table before the moody operator lay his letter of resignation, addressed in due form to J. S. Bucks, superintendent. Near it, under the lamp, lay a well-thumbed copy of the book of rules, open at the chapter on Resignations, with subheads on—

Resign, who should.

Resign, how to.

Resign, when to. (See also Time.)

The fact was it had at last painfully forced itself on Bullhead that

he was not fitted for the railroad business. Pat Francis had unfeelingly told him so. Callahan had told him so; Neighbor had told him so; Bucks had told him so. On that point the leading West End authorities were agreed. Yet in spite of these discouragements he had persisted and at last made a show. Who was it now that had shaken his stubborn conviction? Bullhead hardly dared confess. But it was undoubtedly one who put up to be no authority whatever on Motive Power or Train Service or Operating—it was Matt Cassidy's girl.

While he reread his formal letter and compared on spelling with his pocket Webster, a train whistled. Bullhead looked at the clock: 11.40 P. M. It was the local freight, Thirty, come in from the West, working back to Medicine. From the East, Number One had not arrived; she was six hours late, and Bullhead looked out at his light, for he had orders for the freight. It was not often that such a thing happened, because One rarely went off schedule badly enough to throw her into his turn. He had his orders copied and O. K.'d, and waited only to deliver them.

It was fearfully windy. The 266 engine, pulling Thirty that night, wheezed in the gale like a man with the apoplexy. She had a new fireman on, who was burning the life out of her, and as she puffed painfully down on the scrap rails of the first siding and took the Y, her overloaded safety gasped violently.

When the conductor of the Number Thirty train opened the station door, the wind followed him like a catamount. The stove puffed open with a down draft, and shot the room full of stinging smoke. The lamp blaze flew up the chimney—out—and left the nightman and the conductor in darkness. The trainman with a swear shoved-to the door, and Bullhead, the patient, turned over his letter of resignation quick in the dark, felt for a match and relighted his lamp. Swearing again at Bullhead, the freight conductor swaggered over to his table, felt in all the operator's pockets for a cigar, tumbled all the papers around, and once more, on general principles, swore.

Bullhead took things uncomplainingly, but he watched close, and was determined to fight if the brute discovered his letter of resignation. When the trainman could think of no further indignities he took his orders, to meet Number One at Sackley, the second station east of Goose River. After he had signed, Bullhead asked him about the depot fire at Bear Dance that had been going over the wires for two hours, reminded him of the slow order for the number nine culvert and as the rude visitor slammed the door behind him, held his hand over the lamp. Then he sat down again and turned over his letter of resignation.

To make it binding it lacked only his signature—James Gillespie Blaine Lyons—now, himself, of the opinion of every one else on the West End; that he was just a natural born blooming fool. He lifted his pen to sign off the aspirations of a young lifetime when the sounder began to snap and sputter his call. It was the despatcher, and he asked hurriedly if Number Thirty was there.

"Number Thirty is on the Y," answered Bullhead.

Then came a train order. "Hold Number Thirty till Number One arrives."

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Inner armor for auto tires. Prevent blowouts and punctures. Double tire mileage. Easily applied to any tire between casing and tube. Prices low, details free. Agents wanted. Liberal profits. Am. Auto Accessories Co. Dept. 711 Cincinnati, O.

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No. 125175, for sale. Foaled April 19, 1916.

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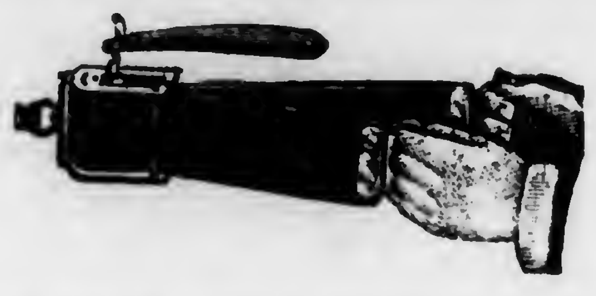
No More Dull Razors for those Who Use the

NEVER FAIL RAZOR SHARPENER



This illustration shows the method of sharpening an old style razor with the Never Fail Razor Sharpener. The razor is simply pushed into the receiver and is adjusted automatically so as to bring it against the leather at the proper bevel, and it is always held in the same perfect adjustment. No screws to turn, or spring to place. Any razor ever made can be sharpened by this machine. No exceptions are allowed. The thick or thin, broad or narrow, old style or safety, any blade and every blade. You simply push the razor into the machine, as it hangs on the hook and pull the ends of the leather. Nothing to get out of order. Nothing to break.

Don't throw your old safety blades away. A special device is included for inserting safety blades so that they can be sharpened just the same as an old fashioned razor.

Given as a reward for a club of two subscriptions to January 1, 1920, at $1.00 each.

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Makes *Any* Washing Easy

There is an easier way to wash than wearing out your back and the clothes over the washboard. Put 20 Mule Team Borax Soap Chips in the wash water and save two-thirds in time and labor. The Borax softens the water, loosens the dirt and makes the soap work. Use

20 MULE TEAM BORAX SOAP CHIPS

this way to get best results:—

Make a Soap Jelly by adding three tablespoons of Chips to a quart of water and boil. Put enough of this solution into the wash-water to make a good suds and soak or boil clothes as usual. Will not shrink woolens or injure fine fabrics. An 8 oz. package of 20 Mule Team Borax Soap Chips equals 25c worth of ordinary laundry soap.

It's the Borax with the soap that does the work.

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FOR USE IN LAUNDRY & KITCHEN
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TOWER'S FISH BRAND REFLEX SLICKER

Practical as a plow, and just as necessary. Make every rainy day count.

Waterproofs Absolute are Marked thus—

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IRONCLAD KHAKI TWILLS

GUARANTEED FAST WEARS LIKE LEATHER

Uncle Sam's Fighting Boys Wear IRONCLAD KHAKI *Twill Cloth*

You men and women of his "home guard" should wear this patriotic economy cloth, too. It's fast sulphur dyed and wears like leather.

SHIRTS, PANTS AND OVERALLS made of the genuine Ironclad Khaki (the kind Uncle Sam uses) carry the yellow "army" label, like the above. Look for it in the garment before you buy.

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ALL the comfort, health and convenience of furnace heat, freedom from annoyance and danger of stoves without tearing up your walls for pipes or flues or heating your cellar.

The only pipeless furnace which completely incorporates correct principles of pipeless heating. Greater warm air capacity and scientifically proportioned heating surface insure constant circulation of warm, moist air in sufficient volume to heat comfortably the entire house.

MUELLER PIPELESS FURNACE

Especially designed and built for pipeless heating. Exclusive features of construction found in no other pipeless furnace make it the ideal pipeless system and absolutely reliable. Burns hard or soft coal, coke or wood. Saves one-third or more on fuel. Quickly installed in old or new homes. Sold under binding guarantee. Write for free booklet "Heating Your Home" and name of nearest dealer.

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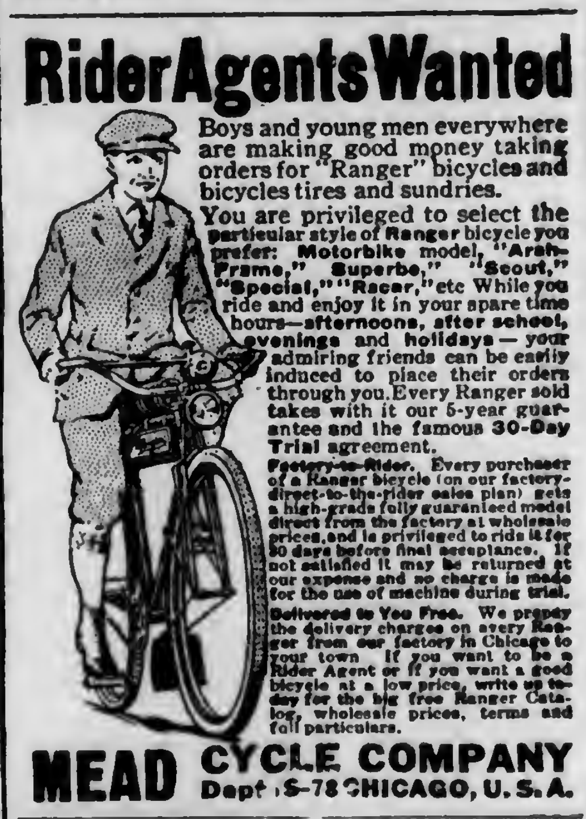

Rider Agents Wanted

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You are privileged to select the particular style of Ranger bicycle you prefer: Motorbike model, "Arch-Frame," Superbe," "Scout," "Special," "Racer," etc While you ride and enjoy it in your spare time hours—afternoons, after school, evenings and holidays—your admiring friends can be easily induced to place their orders through you. Every Ranger sold takes with it our 5-year guarantee and the famous 30-Day Trial agreement.

Factory-to-Rider. Every purchaser of a Ranger bicycle (on our factory-direct-to-the-rider sales plan) gets a high-grade fully guaranteed model direct from the factory at wholesale prices, and is privileged to ride it for 30 days before final acceptance. If not satisfied it may be returned at our expense and no charge is made for the use of machine during trial.

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40 designs—all steel. Handsome, costs less than wood, more durable. We can save you money. Write for free catalog and and special prices.

KOKOMO FENCE MACH. CO.
453 North Street, Kokomo, Ind.

SAY you saw the advertisement in Pennsylvania Farmer when you are writing to our advertisers.

Binder Twine Granges, Farmers' Clubs get our price. Farmer agents wanted. Write us. Theo. Burt & Sons, Melrose, Ohio

Bullhead repeated the order, and got back the O. K. He grabbed his hat and hurried out of the door to deliver the new order to the local freight before it should pull out.

To reach the train Bullhead had to cross the short line tracks. The wind was scouring the flats, and as he tacked up the platform the dust swept dead into him. At the switch he sprang across the rails, thinking of nothing but reaching the engine cab of the local—forgetting about the track he was crossing. Before he could think or see or jump, a through freight on the short line, wild, from the West, storming down the grade behind him, struck Bullhead as a grizzly would a gnat—hurled him, doubling, fifty feet out on the spur—and stormed on into the East without a quiver out of the ordinary. One fatality followed another. The engineer of the short line train did not see the man he had hit, and with the nightman lying unconscious in the ditch, the local freight pulled out for Sackley.

Bullhead never knew just how long he lay under the stars. When his head began to whirl the wind was blowing cool and strong on him, and the alkali dust was eddying into his open mouth. It was only a matter of seconds, tho it seemed hours, to pull himself together and to put up his hand unsteadily to feel what it was soaking warm and sticky into his hair; then to realize that he had been struck by a short line train; to think of what a failure he had lately acknowledged himself to be; and of what it was he was clutching so tightly in his right hand—the holding order for Number Thirty. He raised his reeling head; there was a drift of starlight through the dust cloud, but no train in sight; Number Thirty was gone. With that consciousness came a recollection—he had forgotten to put out his red light.

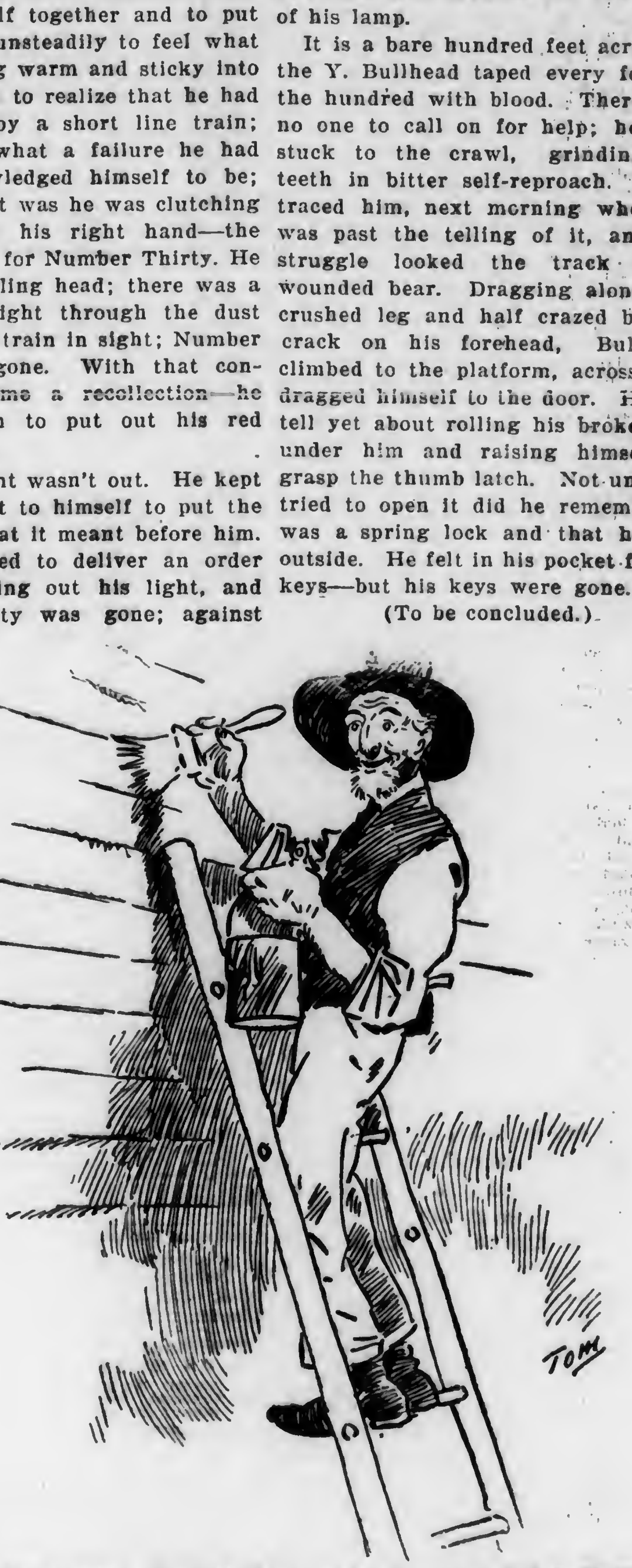
His red light wasn't out. He kept repeating that to himself to put the picture of what it meant before him. He had started to deliver an order without putting out his light, and Number Thirty was gone; against Number One—a head and collision staring the freight and the belated passenger in the face. Number Thirty, running hard on her order to make Sackley for the meeting, and One, running furiously.

He lifted his head, enraged with himself; enraged. He thought about the rules, and he grew enraged. Only himself he blamed, nobody else—nobody else—studying the rules for a lifetime and just when it would mean the death of a trainload of people forgetting his red signal. He lifted his head; it was sick, deadly sick. But up it must come, Thirty gone, and it wabbled, swooning sick and groggy, as he stared around and tried to locate himself. One thing he could see, the faint outline of the station and his lamp blazing smoky in the window. Bullhead figured a second; then he began to crawl. If he could reach the lamp before his head went off again, before he went completely silly, he might yet save himself and Number One.

It wasn't in him to crawl till he thought of his own mistake; but there was a spur in the sweep of that thru his head. His brain, he knew, was wabbling, but he could crawl; and he stuck fainting to that one idea, and crawled for the light of his lamp.

It is a bare hundred feet across to the Y. Bullhead taped every foot of the hundred with blood. There was no one to call on for help; he just stuck to the crawl, grinding his teeth in bitter self-reproach. They traced him, next morning when he was past the telling of it, and his struggle looked the track of a wounded bear. Dragging along one crushed leg and half crazed by the crack on his forehead, Bullhead climbed to the platform, across, and dragged himself to the door. He can tell yet about rolling his broken leg under him and raising himself to grasp the thumb latch. Not until he tried to open it did he remember it was a spring lock and that he was outside. He felt in his pocket for his keys—but his keys were gone.

(To be concluded.)



Uncle Amos says: "Clothes don't make the man, but a decent suit is mighty comfortin'. A coat of paint don't make a house, but it helps make the house a home. The biggest and best thing on the farm is the home and this coat of paint is goin' to add to the home comfort."

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 29, 1918.

With supplies of old potatoes more than equal to the demand and Florida new potatoes increasing in supply faster than the demand, the market is weak and declining. Pennsylvania potatoes are selling all the way from $1.25@1.75 per cwt., mostly from $1.45@1.60. New York State potatoes are selling generally from $1.40@1.50 per cwt. Delaware Hoosiers are moving slowly from $1@1.15. While the quality and condition of Florida new potatoes is generally good, the demand and movement are slow and the market only fair with No. 1 barrels selling mostly at $5@5.25, with an occasional few at $5.50. No. 2's in barrels are selling at $4.50@4.75; No. 1's in 150-lb. sacks, $3.50@3.75; No. 2's at $3@3.25. Bushel crates are commanding from $1.15@1.35, and hampers from 75c@$1.25.

Sweet potatoes are in light supply and the market is firm. New Jersey stock is selling at $1.40@1.50 per ⅝-bushel for No. 1, with medium at $1@1.15, and seconds 50@60c. Southern sweets in bushel hampers are selling generally from $1.50@2 for prime, with seconds and mediums at $1@1.25.

Vegetables

Asparagus is now in quite free supply from New Jersey and there is also considerable coming from Delaware and Maryland points. The market is somewhat lower. New Jersey Collossal is selling at 27@35c per bunch; fancy, 22@25c; primes, 15@20c, and culls, 12@15c. Maryland and Delaware asparagus is ranging from 12@30c per bunch as to size and quality. Green asparagus always sells at 3@5c per bunch higher than the white, grade for grade. Fancy green and wax beans are in light supply and prices are ruling firmer and higher, best selling at $3@3.25 per hamper, with poor at $2@2.50. Artichokes are a little easier, as the quality is poor. Boxes are selling at $2.50@3.50, with half boxes at $1.25@1.75. New beets are in very light supply and the market is firm and active at 6@7c per bunch. Old carrots from nearby points are still in evidence and selling at $2@2.50 per barrel, while new carrots from southern points sell from 20@25c per dozen bunches.

Old cabbage is still arriving in small quantities, but the season is nearly over and most of the offerings are very poor and have to be trimmed before selling. Prices range from $20@30 per ton as to quality. New cabbage is arriving very freely, but demand is quite active and the movement is good at $2.75@3 per crate for the best, with poor at $2@2.50. Hampers range all the way from 75c@$1.25. Celery is extremely scarce, one car selling early this week at $4@4.50 per crate. Cucumbers when fancy are meeting an active demand at $3@3.50 per bushel hamper; choice, $1.75@2.50. Egg plants continue in light supply and are showing little or no change. Best sells at $3.50@4 per crate, and choice and small sizes at $2.50@3. The little horse radish that is now coming is selling slowly at $3@5 per barrel. Good fancy kale is very scarce and when here commands good prices; one or two cars early in the week selling from $2@2.25 per barrel.

Southern lettuce is not bringing the high prices that it was last week as the quality is not so good and the trade is being better supplied from nearby points. At this writing South Carolina is selling from 75c@$2.25 per hamper; North Carolina from $2@2.25. Pennsylvania lettuce is now arriving quite freely and meeting an active demand at $2.50@4 per barrel of 50 heads. Mushrooms are showing practically no change from last week's decline and the market is now ruling steady at 30@40c per pound. The few lima beans that have been on the market have been selling from $4@5 per hamper; but as heavier supplies are now looked for, lower prices will probably prevail. Old onions are selling up to $2.50 per cwt. for the best, with other poor and sprouted selling at irregular prices, ranging on down as low as $1.25. New Texas onions, which were selling last week from $2@2.50, are now selling at $1.50@2.25 per crate. Strictly fancy peas continue very scarce and bring good prices, best selling at $3@3.50 per bushel hamper, with 30-quart drums at $5.25@5.75. Parsley is about steady at $2@2.50 per barrel.

Radishes are showing a big range in both quality and price; best Norfolk selling at $1.50@2 per hamper, with poor at 75c@$1. Best Mississippi radishes are selling from $5@7 per barrel, with some very poor as low at $2. Peppers continue in light supply and show little if any change from last week's prices, best selling at $3.50@4, with poor at $2.25@2.50. Pennsylvania and New Jersey rhubarb is in quite free supply, but meeting an active demand at 2@3c per bunch. Nearby scullions continue plentiful and low, ranging all the way from 75c@$1.25 per 100 bunches. Squash continues scarce and when fancy sells quickly at $2.25@2.50 per crate. Norfolk spinach has taken a sharp advance. Last week good spinach was selling at $1.50@1.75, and at this writing best grades are selling from $3.50@4 per barrel. The supplies of tomatoes continue light and prices show another advance over that reported in these columns last week. Good fancy 144's are now selling at $3.50@4 per crate, while choice 180's bring $3@3.50. Culls and gems are ranging all the way from $1.50@2.50 per crate. There is no change in white turnips, but they are still selling at $2.50 per barrel. Watercress continues about steady at 2@2½c per bunch.

Fruits

The supply of fresh fruits continues extremely low. Apples are in light supply and the market rules firm and active at the advance reported in these columns last week. Baldwins are selling from $4@6.50 per barrel generally, with extra fancy up to $7. Ben Davis are selling mostly from $4@5, with now and then an extra fancy lot at $4.25@5.50. Ganos are also selling from $4@5.50. A few Russetts are arriving and selling from $5@6, and one car of Albemarle Pippins brought up to $7. Box apples are somewhat higher than last week, Winesaps selling all the way from $1.75@3.60 per box; Newtown, $2.25@2.90; Arkansas Blacks, $2@2.75. Although strawberies are gradually increasing in supply, offerings are still far below normal for this season of the year. At this writing the bulk of the berries are arriving from North Carolina and selling mostly at 18@20c per quart, with poor at 14@16c. Pineapples are showing little or no change, ranging from $3.50@5 per crate as to size.

Poultry

There is a good active demand for live poultry of all kinds, offerings of which are moderate at about the following range of price: Fowls, 33@35c; staggy young roosters, 24@26c; old roosters, 22@23c; ducks, 26@30c; geese, 25@26c; guineas, per pair, $1.50@1.65; pigeons, per pair, 35@50c.

Eggs

The egg market continues to run along steadily from day to day, fluctuating slightly from time to time according to the supplies and the demand. Taking it as a whole eggs average about steady. Receipts are fairly liberal, but under the good demand supplies are kept well cleaned up. At this writing nearby current receipts are selling at 36; nearby firsts, 37½; westerns, 35½@37c, and Southerns, 34@35c.

PITTSBURGH PRODUCE

Pittsburgh, Pa., April 29, 1918.

The movement of country produce is broadening. Distributors in the coal mining and steel producing districts are steady buyers in this line. Consumers in those sections are earning large wages and they are living well, especially as far as eating goes. In vegetables there is a steady demand for potatoes, onions, beans, lettuce, asparagus and other standard descriptions.

Potatoes, car lots, $2.45@2.65 sack; sweets, $2.25@2.60 hamper. Onions, yellow, $2.50@3 sack; do., Spanish, $2.50@3 crate. Cabbage, $2.75@3 bbl. Parsnips, 50@60c bu. Carrots, 45@55c doz. Lettuce, $1.25@1.75 hamper. Celery, $2@2.50 crate. Tomatoes, $3@4 crate. Radishes, 15@30c doz. Beets, 50@60c doz. bunches; asparagus, $3@5 box; cucumbers, $2@2.75 hamper; rhubarb, 10@15c bdl. Apples, $4@7 bbl; $1.50@2.75 box. Strawberries, $3.25@7.50 per 24 qt. crate; $8.50@9 per 32 qt. crate.

Poultry.—Hens, 34@40c lb; springers, 35@40c; broilers, 42c; roosters, 32c; ducks, 38@40c; turkeys, 38@43c.

Dairy Products.—No change was made in the price of butter at Chicago and last week's prices are still in force. Receipts of eggs are falling off and the market is steadier.

Elgin prints, 46@47c; Elgin tubs, 46@46½c; Ohio and Pennsylvania dairy, 41@42c; cooking butter, 33@34½c. New York cheese, 28@29c; do., Ohio, 26½@27c. Selected eggs, 37@38c; eggs at mark, 34@35c. Goose eggs, $1@1.10 doz; ducks eggs, 38@40c.

Grain and Hay.—No. 2 yellow car corn, $2@2.05 bu; No. 3 yellow shelled, $1.80@1.85; No. 2 white oats, 95½@96c; No. 3 do., 94@94½c bu; standard oats, 95@95½c bu; No. 1 timothy hay, $28@28.50 ton; No. 2 do., $24.50@25. No. 1 light mixed, $24@25. Rye straw, $16@16.50. Oat straw, $14.50@15. Wheat straw, $14.50@15.

LANCASTER PRODUCE

Lancaster, Pa., April 29, 1918.

This was asparagus day on the local markets, and prices which were held at twenty cents last week dropped today to fifteen cents a bunch. Some sales were reported at ten cents late in the day. There was an over-supply of eggs, and prices ranged from 33 to 35 per dozen. Hundreds of dozens were unsold at the close of business. Good-sized new potatoes sold for seventy cents a half-peck, but the demand was light.

Butter and Eggs.—Creamery butter, 55@60c per pound; country butter, 55@58c. Fresh eggs, 35c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 10@15c bunch; new beans, 50@60c ½ pk; tomatoes, 15@20c bx; sweet potatoes, 25@30c ½ pk; new potatoes, 70c ½ pk; potatoes, 50c@$1.00 bu; 10@15c ½ pk; lettuce, 10@12c head; apples, 25@35c ½ pk.

Grain Market.—Milling wheat, $2.05; new ear corn, $1.60; rye, $1.90; oats, 80c; No. 1 timothy hay, $28; clover hay, $25; wheat straw, $17; oat straw, $10.

BALTIMORE PRODUCE

Baltimore, Md., April 29, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.25@1.35 cwt; do., New York, $1.25@1.35; Eastern Shore, $1@1.10 cwt. Sweet potatoes, yellow, $3.50@4 bbl; $1.50@1.75 hamper. Asparagus, $2@3 doz. Beets, 3@5c bch. Cabbage, new, $2@3 crate. Celery, Florida, $2@2.75 crate; do., native, 5@6c bch. Cucumbers, $2.75@3.25 crate. Lettuce, $2@3 basket. Onions, yellow, $1.50@1.75 cwt; red, $1.25@1.50 cwt. Radishes, $1@1.50 basket. Tomatoes, $2@3 crate. Rhubarb, $2 per 100.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5; New York State, $4@6; do., No. 2, $2.50@3.50. Strawberries, 15@25c qt.

Butter.—Creamery, western, extras, 43@44c; firsts, 42@43c; pound prints, 45@46c; do., firsts, 43@44c. Nearby creamery, 40@41c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 36c; Eastern Shore and Virginia, 36c; Southerns, 35c.

Live Poultry. — Chickens, 38@40c; do., springers, 55c@60c; old roosters, 18c; ducks, 27@30c; pigeons, 40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $32.50; 31.50. No. 1 clover mixed, $30.50@31.50; standard timothy, $31.50@32; No. 2 timothy, $31; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@ No. 2 $28.50@30. No. 1 straight rye straw, $20; No. 1 tangled, $17.50@18.50; wheat straw, $15@17; oats straw, $16@19.

Grains.—Wheat, bag lots, $2@2.15 bu. Corn, bag lots, white, $1.60@1.80 bu; yellow ear corn, $8.50@8.75 bbl. Standard white oats, 92@92½c; No. 3 white, 92c. Rye, No. 2 western, $2.10@2.40; bag lots, $2@2.25.

YORK PRODUCE MARKET

York, Pa., April 29, 1918.

Quotations remained the same as for last week. There were plentiful supplies of all staple products. Shipments of greens are plentiful. Potatoes move very slowly and at various prices, in fact, whatever a man thinks he can get for them without moving. Ranges in price were from 35c to 65c per bushel.

Eggs.—32@34c per dozen.

Butter.—Country, 45@48c lb; separator, 50@54c lb. Milk, 10c quart.

Poultry.—22@25c lb; dressed, 75c@$1.75 each.

Vegetables.—Potatoes, 5@10c ½ pk; cabbage, 5@10c hd; lettuce, 5@8c hd; beets, 3@5c bch; radishes, 5@7c bch; onions, 3@5c bch; lima beans, 18c pt; soup beans, 15@17c pt; corn meal, 10@12c qt; turnips, 20@25c ½ pk.

Country Butchering.—Sausage, 32@40c lb; pudding, 28c lb; cured meats, hams, 42@45c lb; sliced, 45@64c lb; bacon, 60c lb; bologna, 15c ¼ lb; dried beef, 15c ¼ lb; lard, 30@35c lb.

Retail Grain Market.—Wheat, $2.25; corn, $2; oats, $1.20; rye, $2.10; bran, $2.60 cwt; middlings, $3 per cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.72; oats, $1; rye, $2; bran, $50 ton; middlings, $58 ton.

NEW YORK PRODUCE

New York City, April 29, 1918.

Butter and cheese prices remain practically as those of last week. Arrivals of eggs are liberal with market irregular; live poultry in light supply. Potatoes weak. Most vegetables in liberal supply.

Butter. — Creamery, extras (92 score), per pound, 44@45c; higher score, 45@46c; thirds to firsts, 38@43½c; state dairy, 36@42c; ladles, 32@35c.

Cheese. — Colored specials, 25@25½c. Daisies, 24@25½c.

Eggs.—Fresh gathered extras, 38@38½c; extra firsts, 36½@37c; nearby white, fine to fancy, 41@42c; ordinary to good, 38@40c; browns, 38@39c.

Vegetables and Greens.—Asparagus, fancy $3@4 doz. bchs.; prime, $2.50@3; culls, $2.00@2.25. Beets, per bbl. $1@2. Onions, per 100-lb. bag, 50c@$2.25. Potatoes, Jersey, $1.25@1.50 per 100 lbs. Carrots, 75c @$2.25 per barrel.

Apples.—Winesap, $4@7; York Imperial, $3.50@5.50; King, $4@7; Baldwin, $4@7; Northern Spy, $4@8.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 29, 1918.

Beef Cattle.—The market for steers ruled a shade easier under a slow demand and fairly liberal offerings. Bulls and cows were in light request at former rates. Calves also were quiet and unchanged.

Steers, choice, $14@15.85; common to fair $12.50@14; bulls, $10@12.50; extras, higher; bulls, common, $8.50@10; cows, fat, per lb., choice, 9@10½c; fair to good, per lb., 7½@9c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $18@18.50; fair to good, $16.50@17.50; common, $13@15; Tennessee and southern, $9@16.

Sheep and Lambs.—Offerings of sheep and lambs were only moderate and prices generally ruled steady under a fair demand.

Sheep, wethers, extra, $14.50@15; good to choice, $13@14; medium, $11@12; common, $8@9.50; ewes, heavy, fat, $13@14. Lambs, choice, $20.50@21; do., medium, $18@19; inferior, $15@16.50.

Hogs.—Demand was fair and values generally ruled steady, with offerings only moderate. Quotations for best western, $20.

City Dressed Stock.—The market was generally steady, with offerings moderate and demand fair.

Steers, 21@26c; heifers, 21@23c; cows, 16@22c; calves, 27@28c; southern and barnyards, 20@22c; calves, 27@28c; country dressed, 23@25c; sheep, choice, 27@29c; do., extra, 30c; lambs, 32@34c; hogs, 25¾@26c.

LIVE STOCK MARKETS

New York, April 29.—Beeves.—Receipts, 250; steady; steers, $11@16.35; bulls, $8@13; cows, $5@10.50.

Calves.—Receipts, 6230; lower at $10.50@15.75; culls, $9@10.

Sheep and Lambs.—Receipts, 3950; wooled wethers, $18; clipped, $15; clipped ewes, $12.50; wool lambs, $20@20.50; clipped, $16.50@17.50.

Hogs.—Receipts, 7000; weak; no prices quoted.

Pittsburgh, Pa., April 29.—Cattle higher; supply, 50 double carloads; prime, $15@16.

Sheep.—Steady; supply, 10 double decks; prime wethers, $14.25@14.75; culls and common, $6.50@9; lambs, $10@18; veal calves, $13.50@14.

Hogs.—Lower; receipts, 45 double decks; prime heavies, $17.50@17.90; mediums, heavy, light yorkers and pigs, $18.20@18.30; roughs, $15@16.15.

Lancaster, Pa., April 29.—Cattle. Receipts 211 head; market dull, prices low; good to choice steers, $13@14; common to mediums, $10.90@11.90; good to choice heifers, $10@11.25; common to medium heifers, $8.25@9.25; good to prime cows, $9.50@10.75; medium to good cows, $8.50@9.50; fairflesh and medium killers, $7@8.25; bologna cows, $5.15@5.60; calves, best grades $14.50@14.90; common grades, $11.75@13.50; good to prime bulls, $11.75@12.50; common to medium bulls, $9.80@10.90.

Hogs.—Receipts, 181 head; market slow; prices lower; best grades, $18.25@18.75; roughs, $16@16.75.

East Buffalo, N. Y., April 29.—Cattle. Receipts, 5400; slow and easier, prime steers, $16.50@16.75; a few, $17; shipping steers, $16@16.25; butchers, $11.75@15.75; yearlings, $13@15.50; heifers, $10@14; cows, $6.50@13; bulls, $7.50@12; stockers and feeders, $7.50@11; fresh cows and springers, $65@140.

Calves.—Receipts, 2800; steady, $7@14.50.

Hogs.—Receipts, 12,500; easier; heavy, $18@18.10; mixed and yorkers, $18.10@18.15; light yorkers, $18@18.15; pigs, $18; roughs, $16@16.25; stags, $13@13.50.

Baltimore, Md., April 29.—Beef Cattle.—Young, fat steers, weighing 1,000 to 1,200 pounds, 11@12c; steers, under 1,000 pounds, 9@10c; oxen, 7@9c; bulls, 8@9c; large young cows, in good order, 7@8c; cows, poor to medium grades, 4@5c; fresh cows with calf, head, $40@75; poor, thin, meadow stock, 4@5c.

Calves.—Choice, handy-weight veals, 15c; do., heavy, fat veals, 13½@14c; good veals, 13½@14c; heavy, smooth, fat calves, head $18@20; heavy or rough calves, head, $14@16; small, thin calves, head, $8@10.

Sheep and Lambs.—Choice, fat sheep, 12c; fair sheep, 6@8c; inferior, rough sheep, head, $2.50@4; old bucks, as to quality and condition, 8@10c; spring lambs, fat, 35 to 40 pounds, 20@21c; do., poor to fair, 18@19c.

Live Pigs.—Pigs, as to size and condition, apiece, $4@6; shoats, apiece, as to size, $6@8.

NEW YORK HAY AND GRAIN

New York City, April 29, 1918.

Feed.—There was no demand of any importance reported. Rye middlings are exhausted on the spot and mills are not willing to sell, either for prompt or future shipment. Small offerings of barley feed were made at $37 per ton. Corn feed meal is in a little stronger position, due to the recent strength of cash corn. Linseed meal was easier and the warmer weather, together with the opening of pastures, has greatly relieved the pressure for supplies. However, consumers have supplies, either on hand or contracted for, sufficient to carry them for some time and are not interested now. Quotations (prompt Western shipment): Rye middlings nominal; oat feed, $30 per ton; barley feed, $37; linseed meal per ton, $57; corn feed meal, $56.50 per ton.

Hay and Straw.—Market holds firm on all descriptions, but the very poorest stock which is still in some surplus. Offerings of high grades at all terminal points are light.

Hay.—No. 1, prime, $30@32; No. 2, $27@29; fancy clover mixed, $25@27.

Straw.—No. 1 rye, $18.

Corn.—No. 3, $1.65@1.80.

Oats.—No. 2 white, 94½@95½c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., April 29, 1918.

Baled Hay and Straw.—Receipts, 36 tons of hay. Hay of fine quality was firmly held, but much of the supply was of undergrade stocks, which was dull and weak. Straw was pretty well cleaned up at steady prices.

Timothy hay, according to location—No. 1 large bales, $29@30; No. 1, small bales, $29@30; No. 2, $27@28; No. 3, $23@25; sample, $19@20; no grade, $14@18; clover-mixed hay, light mixed, $27@28; No. 1, do., $25.50@26.50; No. 2, do. $24@25.

Straw. — No. 1 straight rye, $21@22; No. 2 do., $20@20.50; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1, wheat straw, $19@19.50; No. 2 do., $18@18.50; No. 1 oat straw, $19@19.50; No. 2 do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $1.75@1.77.

Oats.—No. 2 white, 97½@98c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., April 29, 1918.

Butter.—There was a good inquiry for solid-packed creamery as well as for prints, and the market advanced 1c, with supplies well cleaned up.

Western, fresh, solid-packed creamery, extra, 46c; higher-scoring goods, 47@48c; extra firsts, 45@45½c; firsts, 47@48c; seconds, 41@43c; sweet creamery, extra 47c; under grades, 42@46c; nearby prints, fancy, 50c; do., average extra, 47@49c; firsts, 45@46c; seconds, 42@44c; special brands jobbing at 51@53c.

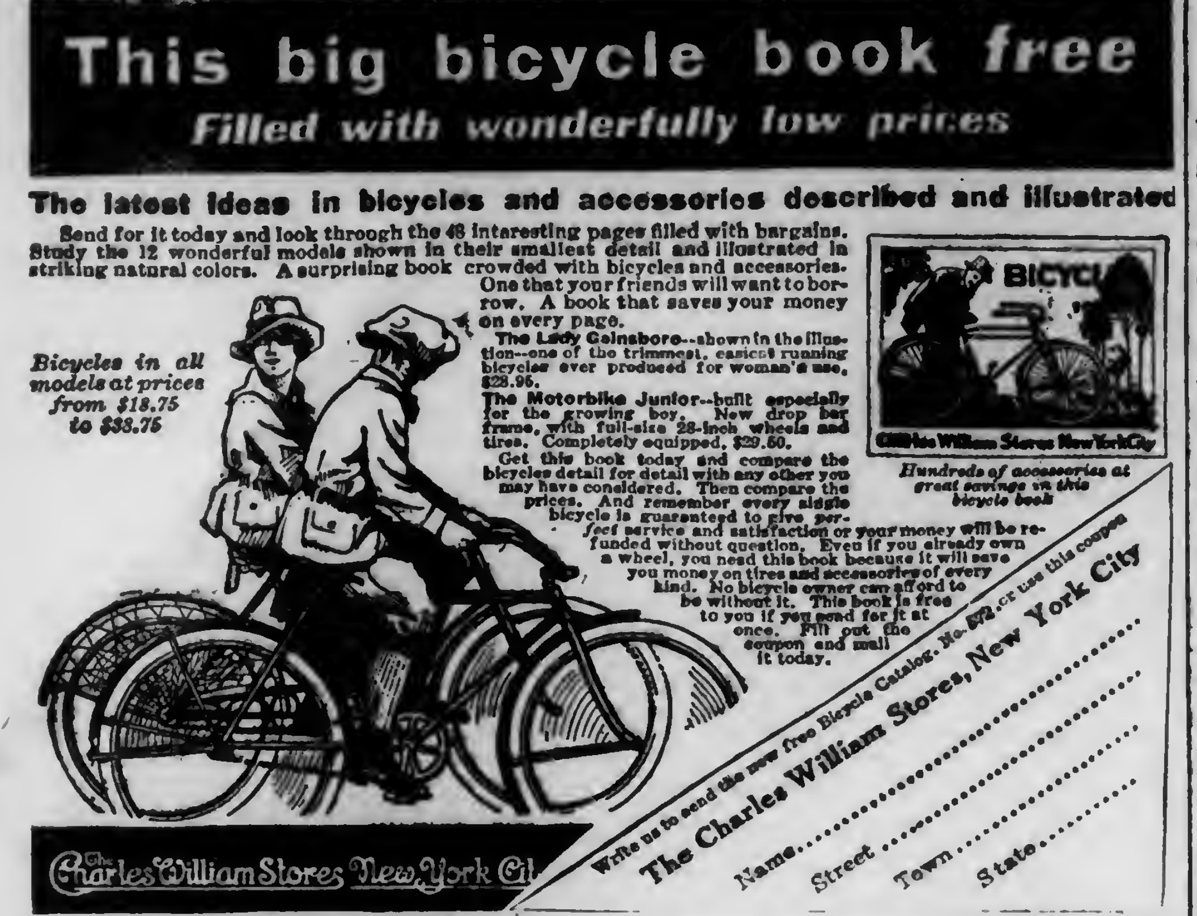
Receipts, as compiled by the Bureau of Markets, 2180 tubs of butter and 8552 cases of eggs.

NEW YORK MILK MARKET

New York City, April 29, 1918.

The market is seriously over-supplied. The Federal Milk Commission established the rate of $2.34 a hundred for 3 percent milk for May and then added 12 cents a hundred recoup to the producers, making the total for 3 percent, $2.46; for 3.6 percent, $2.70, or approximately 5.75 cents a quart; for 4 percent, $2.86. Retail rate on bottled Grade B delivered was dropped a cent to 13 cents and other rates to consumers to correspond, probably to encourage consumption and a means of reducing surplus. Receipts of milk and cream in 40-qt. cans for the week ending April 27 were as follows:

Railroad	Milk	Cream
Erie	37,920	2,357
Susquehanna	5,720	18
West Shore	10,770	1,075
Lackawanna	64,287	2,019
N. Y. Central (long haul) .	127,890	2,985
Ontario	42,957	4,728
Lehigh Valley	47,496	1,084
New Haven	5,910	12
Pennsylvania	11,201	235
Other sources	7,287	225
Totals	361,438	14,729
Same week last year	375,674	17,332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As a war measure, Mount Sinai Hospital School of Nursing is entering a special class, June 15th, 1918. Recognizing the need for additional nurses for military and civilian purposes, the Mayor's Advisory War Committee of Cleveland, and the Western Reserve University have made this Course possible, the former, by supplying the funds, and the latter by offering its facilities for a ten weeks' course in theory. Students will live at the hospital which is in close proximity to the University. No tuition will be charged for the course at the University. Living expenses will be met by the Hospital. This plan offers unusual opportunities to qualified young women wishing to serve their country. Applications should be made at once to Miss C. A. Wheeler, Principal of Mount Sinai Hospital School of Nursing, 1800 East 105th Street, Cleveland, Ohio.

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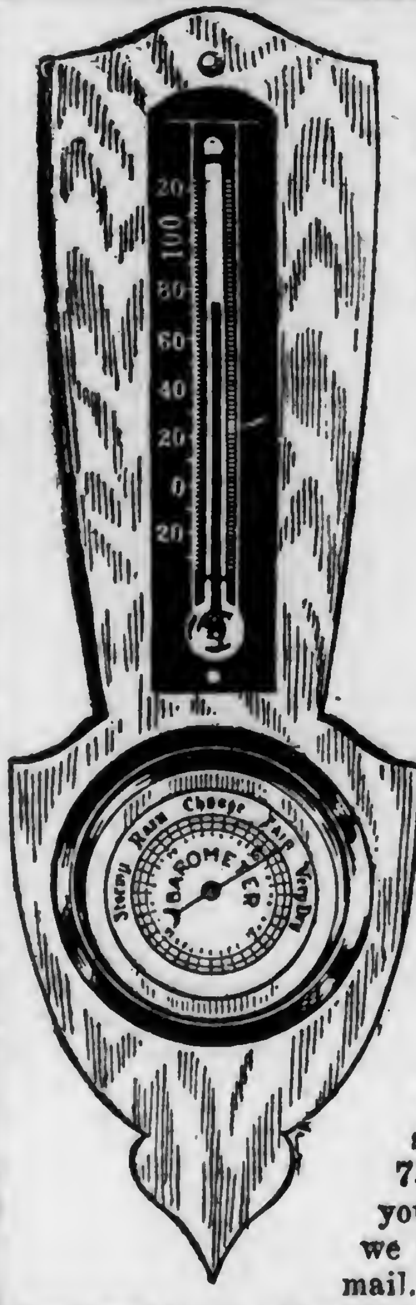
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CONSERVING THE FARMER

It can not be too often said, or too literally accepted as a basis of reasoning, that farming is first of all a mode of life, radically differing from city life or life in army cantonments or sea-faring life, but as complete in itself as any one of the others. The man is on the farm because he enjoys that kind of life—or else he will not stay there. In controlling the processes of nature so as to provide for the wants of that kind of life, he produces a surplus; and that surplus goes to feed those who dwell in the cities and do not feed themselves. In a very real sense the surplus is a by-product of living on the life.

In growing his own supplies the farmer never dares calculate closely. Uncertainties of weather conditions make necessary that if he would have enough he must make allowance for bad seasons, and plant for more than enough.

Farm machinery and improved implements have made it very much easier to plant and care for the crops necessary to sustain life and make it enjoyable on the farm but that made possible also the cultivation of larger areas with the same application of energy. It worked to increase the surplus. The farmer worked just as hard, and lived no more rounded and complete a life. But the incidental surplus became of greater importance—a surer supply for the town dweller. But one must not lose sight of the fact that a man is a farmer at all because he likes the life, and that his contribution to the tables of those who do not produce their own food is an incident to his own living well. If the farm life be impaired or rendered unpleasant, the surplus will vanish.

There is now an insistent call to speed up production—to increase efficiency. The farmer is as patriotic as anybody, and will do what he can. But the result will not be what the city advisers expect. Either he will preserve his life—the farm life and ways—unimpaired, or he will strain himself to the breaking point and in no long time be eliminated from the producing class. It is a curious fact that none of the advisers, of those who are out to "help the farmer," ever think of asking him what kind of help he needs.

One starts a scheme to put out tractors on the farms instead of horses, and is peeved because the farmer who knows that a three-mile-an-hour tractor dragging his two-horse implements will do no more than a working team, and knows that it takes close to four figures of cold cash to install a complete outfit of plows, harrows, rollers, drills, etc., to utilize the power of the tractor. Another says the Government has gone to some trouble to provide farm loan banks, and the farmer has nothing to do but plunge his arms in to the elbows and expand production. He feels sore about that "conservatism", too. But no wise, no successful farmer, counts on his crop of anything until he has it safely housed, and he ventures no further in the gamble with the season coming than he feels able to stand loss. The wise ones are very slow to respond to such well-meant but most viciously dangerous offers of help.
school boys for farm help, and the high school boy can't be taught how little his help is worth in money.

One set want to turn out the high Some are urging women to take up the work, conditioning it all the while that there shall be a man around to do the heavy work. In common sense, what farm work is not heavy work? Where is the snap? Is it following a team all day with nothing to do but walk, and lift the plow around once in a while? Is it tramping after a harrow, or dumping 167-pound sacks of fertilizer into a drill or 120-pound sacks of wheat? Is it riding a roller and climbing down to load on 50- or 100-pound stones to get them out of the field? Is it loading manure or throwing it off? Is it pitching sheaves of grain high on a wagon and building a load that will hold until it reaches the barn door? Is it throwing up cocks of hay on the wagon on a fiery June afternoon, or packing it back in the mow? Is it cutting corn, or hauling in the fodder? The farmer keeps saying that to produce more he needs skilled help, that can get a day's work done in a day. Why not believe him?

The city man with half a dozen hens in his back yard, to whom he feeds his table scraps and garbage, counts his eggs clear gain. But when he plans a 10,000-hen ranch he must reckon all expenses as outlay or he goes under. The farmer who provides amply for his own needs and something over a guaranty against a short season, has his surplus cost covered in the original estimates, and what is left over is like the city man's eggs, in a sense clear gain. He is not too fussy about what they sell for. In moderate quantities therefore, farm produce will always be cheap. But now that he is called upon to feed not only the United States but all Europe, he must either count in every last item of costs and get it out of the crop or he must sacrifice about all that makes country living worth while.

Scientists and schools and other agencies have for the better part of a century been teaching the farmer efficiency. They all get impatient with him. He does things in the old way, and he won't keep books, and he won't co-operate. Much of the science merely tells him why the ways he knew as a boy were good. His father grew clover; the son hears that it harbors nitrifying bacteria. The father raised thrifty shoats with the help of skimmed milk. The son reads about vitamines. There are many shorter cuts now, but most of the teaching means more work for more dollars, and the dollars are secondary to wholesome living, with the real farmer. Everybody teaches the farmer; and the farmer still loves his own needs and goes his placid way. There were cellars of apples before lime-sulphur was invented. Normally the farmer would live on as suited him, and not worry a lot about the teachers. But now, he wants to help feed the world in its need, and his boys are drafted into the army and his hired men working in the munition factories.

There is real danger that he will so far sacrifice his living conditions in the effort that he can not maintain his place on the farm at all. No man for long will work sixteen hours a day in all weathers for the money only. He must find a reward of pleasure in it; and no man will cut out all his pleasures on any plea of duty without breaking down. It is time the doctors were considering the matter of the conservation of the farmer himself.—Chas. H. Darlington, Chester Co., Pa.

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He traces twice to King Segis through his two best sons; Johan a McKinley Segis with a 40-lb. dam, and King Segis Pontiac with a 37.20-lb. dam.
No. 8—Born December 11th, 1917. He is nicely marked, of good conformation and a show calf in every way. His dam, K. S. P. C. Peg 326111, is a 17.42-lb. Jr. three-year-old daughter of King Segis Pontiac Calamity, a 28-lb. son of King Segis Pontiac Alcartra. His 15 nearest dams average 25.6 lbs. butter in seven days.
No. 15—Born December 22nd, 1917. He is about even in color, long, straight back, deep bodied and a show bull in every respect. His 10 nearest dams average 28.4 lbs. butter in seven days. Dam: Queen Nazli De Kol Segis 226241, A. R. O. at 3y. 559.90 lbs. milk, 20.02 lbs. butter. She is a granddaughter of De Kol Beets Segis.
No. 20—Born January 7th, 1918. This bull is a little more black than white and an extra good individual for one of his age. He comes from heavy producing dams. His ten nearest dams average 27-lbs. Dam; Queen Greenwood Concordia De Kol 161413, A. R. O., 476 lbs. milk, 22.08 lbs. butter. Her dam is a 27-lb. cow with a 26-lb. dam.
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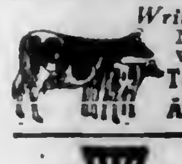

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Fifteen miles from Philadelphia
High Butter Fat Bulls—For Sale
Several Beauties. Ready For Service.
Dams
Penshurst Oxford Lass 9,022 lbs. milk, 619 lbs. butter as a 2-yr.-old.
Sultans Figgis, 10,847 lbs. milk, 756 pounds butter.
Penshurst Mona 2nd 8,755 lbs. milk, 551 lbs. butter.
All by sire whose dams milked 14,184 pounds milk in a year, 833 pounds butter at 2 years.

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Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.
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Reg. & Grade Holsteins 30 head reg. heifers, $250 each; cash or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

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Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M. E. Basehoar, Crystal Spring Stock Farm, Littlestown, Pa.

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Indigestion.—I have a work horse that seems to bloat after each feed, but he never appears to be in pain. He is uneasy as if uncomfortable, but is working on farm every pleasant day. What can I mix with feed that will relieve him? J. H., King, Meadville, Pa.—Feed more oats and less corn, also furnish him with clean, well-cured fodder. Mix equal parts cooking soda, ginger, gentian and powdered wood charcoal, and give hime a tablespoonful at dose in feed. 3 times a day. It is perhaps needless for me to say that his bowels should be kept open, also exercise him daily

Sore-Back.—We have a horse that is troubled with sore back, caused by bad fitting saddle. Have applied different commercial remedies but none seem to effect a cure. This horse is doing farm work, but is seldom driven on road. W. L. M., Elysburg, Pa. First of all, either discard saddle pad you have been using or select a good fitting one. Unless it is necessary to use saddle, leave it off, then his back will heal. Apply equal parts oxide zinc and boric acid to sore, twice daily.

Sprained Tendon.—Have a three-year-old colt that sprained tendon of fore leg some ten days ago and is still going lame, especially when trotting. I am anxious to keep on working him, but he is only doing light farm work. P. G., Jamestown, N. Y.—Clip hair off tendon and apply equal parts turpentine, aqua ammonia and olive oil, lightly, once a day, evenings preferably. He should not be driven faster than a walk until he recovers.

Lice.—We have an old brood mare that is not with foal. She appears to be alive with lice. I would like to know of an inexpensive remedy to destroy them. O. J., Lancaster, Pa.—Apply one part coal-tar disinfectant and thirty parts water, 3 times a week. You will simplify your work by clipping her.

Two Holes in Teat.—I am a reader of Pennsylvania Farmer and would like to know if you can tell me how to cure one of my heifers. She has two holes in same teat. Milk flows from both openings when she is milked. The one hole is midway between end of teat and udder. F. C. M., Dresher, Pa.—Unless you can secure the services of a competent veterinarian to operate on her, leave her alone. There is grat danger of infecting the udder. She can be milked thru a milking tube, however, this is quite likely to result in udder infection, for it is no easy task to keep the milking tube perfectly clean and free from infection.

Garget.—I have a cow about five years old and in good condition, that suddenly developed a caked udder. Most of the trouble is in one quarter. She milked all right in the morning, but in the evening her bag was caked. This cow came fresh some four months ago. I feed her corn, oats and commercial dairy feed. For roughage I fed alfalfa and corn fodder. W. E. C., Elysburg, Pa.—If you will apply one part fluid Extract of Poke and four parts olive oil, twice a day, with plenty gentle hand rubbing it will help her udder. Give her one dram potassium iodide at dose in either feed or drinking water, three times a day. If the udder remains hard, apply iodine ointment daily. You can secure this ointment at any drug store.

Knee-sprung.—We have a four-year-old horse that has crooked knees, but he has never shown any lameness. Can he be cured and worked every day? H. S. K., Jamestown, N. Y.—Doubtless this horse I advise you to leave him alone as has had crooked knees from birth. his knees can not be straightened.

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd. BONNYMEADS FARMS, R. D. 1, Harrisburg, Pa.

Reg. Jerseys From some of the most noted blood in the world.
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Do you know that the chicks hatched by your hens cost you 22 cents each? They do. Let us prove it to you.

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Do you want the best for your foundation stock, or new blood for your flock? Then order from an Old Established Breeder. We are not a Hatchery.
Single Comb White Leghorns Only
Our prices are as low as can consistently be named under present conditions.
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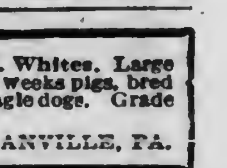

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COUNTY NOTES

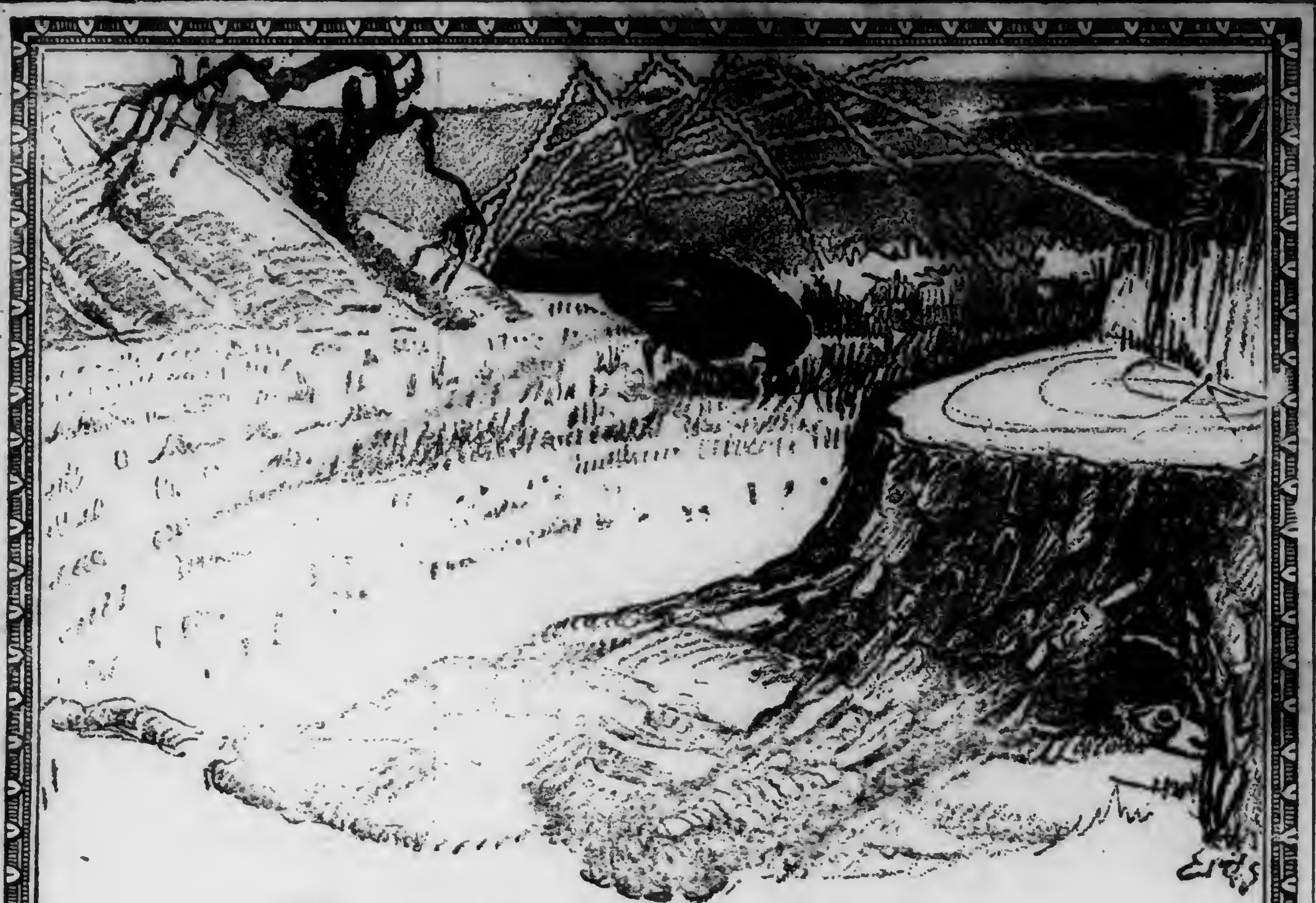
Lebanon Co., Pa., (S.E.) April 15.—Weather was cold and rainy all last week. This week promises to be warm and seasonable spring weather. Wheat is looking better after the soaking rain of last week and promises a fairly good crop. Most of the farmers are busy plowing. Some are trying tractor plowing for the first time this spring. About 50 tractors were bought in this county this spring. Quite a few acres of navy and marrow beans will be planted this year. Corn and oats will have a normal acreage. Potatoes will be reduced in acreage owing to the below production price of this tuber. Many farmers have put out tobacco seed beds and the acreage will be slightly increased. Corn is $1.80; oats, $1; potatoes, 65c; eggs, 32c; butter, 60c. Many automobiles and Liberty bonds are being sold in this neighborhood, the farmers taking their full share of both. Our poultry farmers and fanciers are busy hatching and brooding chicks for the coming year. They must, however, either have lower feed costs or get more for their eggs or they can not continue in the business.—Leonard F. Strickler.

Mifflin Co., Pa., (E.C.) April 15.—Weather the latter half of March was fair and warm. Farmers were plowing; a few sowed oats. April fair one week. On the 8th it rained, then four days snow with a strong east wind. A few crossroads could not be traveled until yesterday noon; snowfall two feet. Still much snow. Little farming done this week. Public sales passed off with most everything selling high; horses and cattle selling very high. Wheat in the ground looking well. Wheat, $2.05; rye, $1.60; corn, $1.20; oats, 75c; butter, 40c; eggs, 28c; apples, 80c; potatoes, 75c. While help is scarce farmers are active in producing all the crops they can. Many farmers will plant sugar cane for syrup to help increase the sugar supply.—J. H. Byler.

Lancaster Co., Pa., (S.E.) April 1[illegible].—Fair and warm at present. Last week witnessed a return of winter. We had snow, rain, wind and a very heavy ice storm that did damage to early fruit and put the telephone lines entirely out of commission. Live stock is in good condition and commands high prices. Winter wheat is very poor, due to freezing out. Good fields are scarce; some have been worked up and sown to oats. Grass fields are looking fairly good. Upon opening their cribs this spring many farmers found that their corn was badly spoiled, due likely to the fact that the corn froze last fall before it was fully matured. The early nice weather has given farmers a chance to get much of their spring work done. Potatoes and oats have been planted and much sod has been plowed. Wheat, $2; corn, $1.70; oats, $1; straw, $19.—J. Henry Haverstick.

McKean Co., Pa., (N.) April 15.—Weather has been good most of the past month; last week we had about 8 inches of snow. Live stock is not looking so well as earlier. Hay is getting scarce and is bringing $18 to $20 in barn. No oats in yet. Oats, $1.12 bu; corn, $3.90 cwt; bran, $55 ton; potatoes, $1.20 bu. Much manure was hauled out last week on the snow. Plowing is being done some on hillsides. Labor scarce, as everywhere else.—R. C. Fuller.

Tioga Co., Pa., (NC) April 24.—We had 20 inches of snow in three days last week. The farmers have the manure about all hauled out. Wheat is looking fairly good. Many horses for sale about here but most of them are light in weight. Cattle and sheep wintered fairly well. Farmers are plowing where the ground is dry enough. No potatoes planted yet. Young stock is looking good and the pastures are starting nicely. Farm help is very scarce as most of the young men have joined the army. Potatoes sell at 73 cents per bushel; apples, $1; oats, $1.40; onions, 75 cents; wheat, $2.25; eggs, 35 cents; butter, 55 cents; heavy horses, $500 to $600 pair; cows, $75 to $100 each; pigs, $12 to $13 pair; sheep, $18 to $20 each.—L. D. W.



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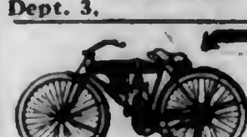

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Getting Better Seed Potatoes

Increasing Crop Production by Seed [illegible]ction

By C. H. MYERS,
CORNELL UNIVERSITY

Library Ag'l College Experiment Station

Great emphasis is now placed on the question of the production of all food supplies. There are many factors concerned in production. For the purpose of this discussion it may be said that these factors may be roughly classified under two headings, as external and internal. The external factors constitute the environment and as examples of these may be cited the soil with all its varied forms of nutriment, the rainfall, sunshine, wind, cultivation, disease and the like. Proper preparation of seed-bed, intelligent use of fertilizers, protection from fungous and insect pests, and thoro cultivation should be practiced in order to obtain our maximum production of crops. The writer would in no wise detract from the importance of these external factors, which are partially, at least, under our control. But it is desired to call attention to the importance of the internal factor, which the plant-breeder calls heredity and which may be used to good advantage in increasing yield of food stuffs. The farmer may have prepared and fertilized his ground ever so well; he may practice the best system of cultivation; and he may protect his crops from fungous and insect enemies; but he has not done his best unless he has used seed with a good heritage behind it, coming from a high-producing strain.

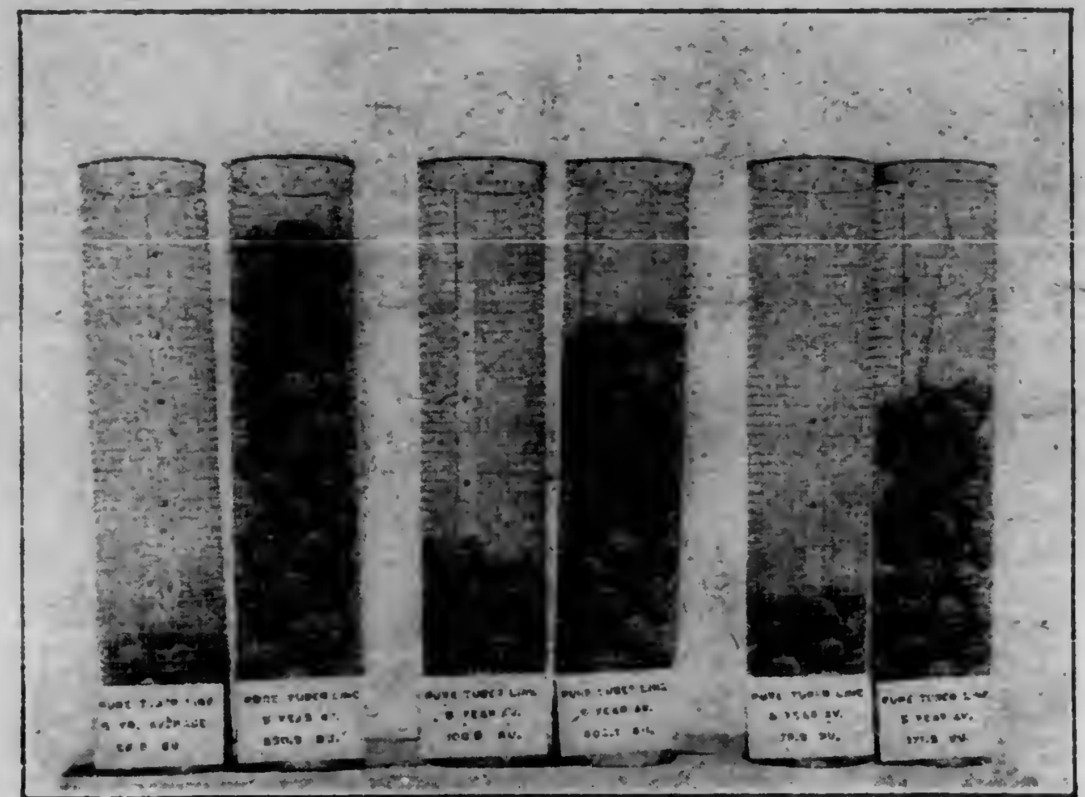
Some of the principles of plant breeding have been applied by farmers for a long while. In an ancient Chinese encyclopedia some principles of selection are outlined. Color of animals was given attention in Genesis, indicating that the ancient Israelites practiced some selection in animal breeding. Cereals have always played an important part in human existence and varieties of these were in cultivation before the time of the ancient Egyptians and the Lake Dwellers of Central Europe. Records show that cereals were cultivated by the Chinese and Egyptians three to four thousand years before Christ. It is not presumed that a very elaborate system of plant breeding had been developed at that time, but certainly selection of some sort was practiced. Even tho it may have been performed unconsciously and without a reference to particular methods, it has had its effect in the improvement and development of domestic plants.

One of the main advantages to be derived by making this factor of heredity work for us is that it is a permanent effect. By breeding we not only increase the yield of a given crop for this year but the result is a permanent one, for a good strain of seed once procured will maintain its good qualities year after year, if proper care is taken to keep it from becoming mixed with inferior sorts.

Potato Breeding

The fundamental principles of plant breeding apply to all crops. We need only to adapt the method to the particular crop with which we are working. The present article deals with the work as applied to potatoes and is based mainly upon the results obtained in the experimental work of the Department of Plant Breeding at [illegible] York State College of Agriculture, altho re[illegible] to other work are made.

[illegible]re two methods which may be employed [illegible]ding potatoes, viz., hybridization and selec[illegible]. The term breeding is sometimes taken to mean only the process of hybridizing or crossing one plant with another, while the process of selection is not considered a phase of breeding. Even when hybridization has been performed it is still necessary to practice selection before the desirable types may be secured. Selection must always accompany hybridization. The process of selection, however, may be used to good advantage alone and serves to isolate superior strains which already exist.



Each Cylinder Represents Five-Year Average Yield of Two Strains Each From Three Different Varieties

Hybridization of Potatoes

The potato is reproduced by cuttings from the tuber, which is an underground stem, rather than by seed. The formation of potato seed balls is a comparatively rare occurrence, altho not as rare as is sometimes supposed. Under favorable conditions, certain varieties give a heavy yield of seed balls. These seed balls are usually the result of chance fertilization and thus may be called accidental or natural hybrids as contrasted with artificial hybrids which are produced by breeders under control conditions. That is, the pollen is transferred by hand from the anthers of one plant to the pistil of another. The seed, then, which comes from a seedball, either natural or artificial, contains the characteristics of two different parents which may not be even of the same variety.

The progeny from the second generation of such a cross is likely to consist of various types. Some may be like the parents, while others may have different combinations of the parental characters. In order to attain success with this method a very careful study needs to be made of all the individuals coming from a cross and this study must extend over three or more generations.

In making artificial hybrids the technique must be thoroly understood if a reasonable degree of success is to be attained. Professor Stuart, of Washington, in Department Bulletin No. 195, has described this technique accurately. Probably no one has added more to our knowledge of this matter than he, yet he is able under most favorable conditions to get but little more than 28 percent of his crosses to set seed.

Two Strains of Potatoes From Same Variety. Compare Center Row With One Next on Left

It is true that most of our American varieties of potatoes have originated as seedlings. Some of these have come from controlled or artificial crosses but probably the majority have come from accidental seed balls which were planted and tested by such men as Goodrich, Bresee, Pringle and Coy. Probably, if we desire new varieties of potatoes today, they can best be obtained by crossing between the varieties already existing. Owing to the difficulties of technique and the time and labor involved, such work can probably best be done by experiment station men, seedsmen and the like.

Among the thousand or more varieties of potatoes which are listed today, there is enough variation to allow of considerable improvement being made by practice of a good system of selection. For the practical farmer and potato grower this is the best method.

Principles Underlying Selection

The success of selection depends upon the amount of variation to be found in the crop with which we are working. As a general statement we may say that no two plants or animals are exactly alike, even tho they may develop under practically the same conditions. Applying this statement to potatoes, we conclude that any given variety is composed of a mixture of strains, each differing slightly from the other. We may choose 200 tubers from a bin of potatoes of one variety. These tubers may appear very much alike in regard to their uniformity, size, color, depth of eyes, and the like. Indeed, from external appearances we would judge that one of these tubers was just as good as another. But when we test the performance of these 200 individual tubers by the use of the tuber unit method, we see that they belong to different strains. As an example, in such a test from a co-operative breeding plot the poorest unit yielded at the rate of 25 bushels per acre, while the highest unit yielded at the rate of 320 bushels per acre. From which unit would you have preferred to save seed?

Selection does not produce anything new. It merely isolates what already exists. In this connection, selection is synonomous with isolation. After a desirable strain has been obtained in this manner, continued selection within this strain will not produce a change, unless there occurs one of those striking and comparatively infrequent variations which the plant-breeder calls bud-sports. That is, the different strains within a variety are permanent and are not changed by selection. They are separated from each other, and, since they differ, give the impression that the variety has been changed. It has been changed only in that certain undesirable strains have been eliminated and the average thereby raised. For example, in a certain variety, which has been studied carefully in the Cornell experiments, six strains have been isolated. Their average yield over a period of five years is shown in the following table:

TABLE I

Five-year average yield of six strains isolated from one variety of potatoes.

Strain	Bu. per acre
1	46
2	164
3	59
4	178
5	30
6	201
Ave.	113

The average yield of the six strains is 113 bushels per acre. Considering only the three better strains the yield is 181 bushels per acre. To carry the illustration further, if that particular variety had consisted of the six strains, only, the average yield for five years would have been 113 bushels per acre. If by selection the planting had been made to contain only the three good strains, the yield for the same period of time would have been 181 bushels per acre.

The action of selection as a means of isolating and eliminating inferior strains has been demonstrated by many experiments. Other experiments have been made which show the lack of effect of selection within the strain, at least as far as practical work is concerned.

Methods of Selection

There are two methods of selection which may be used by the practical grower. The first of these is known as the tuber unit method, first described by Dr. H. J. Webber in 1908. This method is probably adapted to the use of experiment station workers, and to those farmers who wish to develop a business in pedigreed seed potatoes. The detailed method will not be described here, since it is available from other sources. It has been thoroly tested out by experimenters and has proved successful. By its use, high yielding strains may be isolated from a commercial variety, and the yield thereby increased. As stated before, it does not create anything new, but merely searches out by a study of individuals what already exists. It is mainly a process of elimination of inferior strains altho it enables us to propagate new forms which may arise by bud variation.

Seed Balls Produced in Strain of Rural New Yorker

Mass Hill Method

The method of mass hill selection is much simpler than the tuber unit method. In the long run it will result in the isolation of superior strains, but it will require a longer period of time. Only a limited number of potato growers will use the tuber unit method but every one who saves his own seed should at least practice mass hill selection.

A Bud Sport. Tuber of Two Colors, Dividing Line Passing Thru Eye No. 5. Plants Produced From This Eye Had Tubers of Both Colors in the Hill

The method of procedure is to dig a large number of hills by hand, perhaps two thousand or more, each year. The tubers from the best of these hills are selected by inspection and thrown together to be planted in an increase seed plot, which can be located in a section of the regular field. This seed plot will furnish a supply of seed potatoes to be used in the regular field, and it should have newly selected hills brought into it each year from the general field or from other sources, as may be available.

Running-Out of Seed

There is much discussion concerning the "running-out" of seed. There are farmers who believe that with potatoes, as well as with other crops, a change of seed from time to time is desirable and, therefore, they send away for seed. This practice has probably been followed more especially with potatoes than with other crops.

The facts of the case cannot be disputed if by "running out" is meant that the productivity of a given variety has decreased. It is a well established fact that certain varieties, e. g., the Early Rose, do not seem to be as productive as formerly. It is a popular opinion with many potato growers that this variety has run out, and it is true that it is not now grown to anything like the extent it was ten or twenty years ago. Other examples of apparent running-out might be given. On the other hand, there are varieties today which have been in existence for from 25 to 50 years, and are still considered good. Professor Zavitz, in Ontario Bulletin No. 239, gives the yields of five different varieties which have been grown upon the same farm for 26 years without any apparent signs of running out. In this instance no form of hill selection was practiced.

It has been suggested that this degeneration of potato varieties is due to the fact that they are propagated by cuttings rather than by seed, and that this process of asexual propagation tends to a condition of varietal senility. This opinion is probably suggested by the fact that with many species of plants as well as of animals there appears to be an increase of vigor attendant with cross fertilization. This has led to a popular opinion that crossing is necessary to maintain vigor and that a crop like the potato, which is propagated vegetatively, gradually deteriorates. There are, however, many other plants which are not propagated by seed but which, nevertheless, do not seem to run out. As examples of these might be mentioned bananas, hops, strawberries, sugar cane and many grasses.

In the writer's opinion it is doubtful if there is an actual varietal senility in the potato. There is rather a running out or degeneracy due to contributory causes. Among these may be mentioned unfavorable climatic conditions. It is well known that hot, dry weather has a deteriorating effect on potatoes. There are certain regions where for this reason it may be advisable to use imported rather than home-grown seed. Potatoes may also degenerate on account of attacks by certain diseases which affect the yield and which are carried over by the tubers from one generation to another. Still another cause may be attributed to lack of care in selection of seed. A large number of growers make no selection whatever and sometimes have even planted culls. This procedure would tend to a condition of degeneracy. A small potato may be all right for seed, if it comes from a good yielding hill, but to plant small potatoes selected indiscriminately from the bin is a bad practice.

Most of these contributory causes may be practically controlled by some efficient method of hill selection. This statement, of course, does not apply to those regions where the environmental effect mentioned above makes it apparently impossible to produce seed potatoes. But in those localities, where conditions are favorable to seed potato production, the running out may be prevented by hill selection. No potato grower, whether he has a large or small acreage, can afford to plant seed which has not been selected in such a manner so that it is known to have come from a high-yielding strain. Unless he does this he is not taking into consideration the important factor of heredity, which will work efficiently for him in producing a larger yield of potatoes.

Soils Deficient in Potash.—Certain bottom lands and sandy soils are naturally deficient in potassium and this element must be supplied to such soils in order to get the best results in the growing of crops. The usual plan has been to apply potash fertilizer to such land in the form of mineral salts which until recently have been largely imported from the potash mines of Germany, the annual importation being about 500,000 tons. Since the war this supply has been cut off and it has been almost impossible to purchase potash fertilizers.

Will it Help Win the War

The great crisis that now confronts us, as a nation, has simplified our standards of living into two great groups—soldiers and food. The thoroness and rapidity with which this has been done are remarkable. In doing them we have made costly and stupid blunders that have taxed our patience to the limit, but blunders in such a colossal undertaking were to be expected, and in spite of them we have built these two great and potential units — the military forces and the food forces. They are inseparable, for one is directly dependent upon the other and both must be maintained and pushed to the limit. The work of building our armies belongs essentially to the urban population with as little help as possible from the farms, while the work of the food army belongs entirely to the rural population. That the farms should be called upon to furnish a certain number of soldiers is perhaps inevitable, but how far can this sort of a policy go without seriously disturbing the balance.

No better test can be applied to any policy today than that suggested by Mr. Daniel Willard, President of the Baltimore and Ohio Railroad, in a recent speech. He said that the question, "Will it help win the war?" should be applied to every contemplated act. In other words, if a policy does not directly and clearly aid our fighting forces or our food forces, it will not help to win the war and should be discarded or laid aside until the war is over. If we ask, "Will it help win the war?" if we substitute for our younger men on the farms old men, women and children, as has been done in many of the European countries, we raise a vital point in the general policy of our war mobilization work. In considering this matter, we must not only remember that we, as farmers, have the duty of feeding ourselves and our armies abroad, but also the peoples of England, France, Italy, Belgium and other smaller countries. Together with this stupendous task has come unforseen difficulties in crop production such as a seed shortage, fertilizer shortage, transportation difficulties and labor troubles. Will it then help win the war if we turn over these problems to the old men, women and children to solve while our young men join the fighting forces?

During the past winter the Federal Department of Agriculture pointed out the shortage of seed corn. Thru the activity of the county agents in those states in which the counties are well organized, a census of the available seed corn was taken and the results were highly satisfactory. It seemed to be simply a problem of distribution since an adequate supply was at hand. But when the experiment stations and agricultural colleges tested this seed the results were alarming. At the Massachusetts Agricultural College for instance, some of the samples tested failed to germinate a single kernel, many germinated only three or four, the majority less than 50 percent and very few as high as 80 percent. When we consider that we must rely largely upon corn to supply our local cereal needs for the coming year, the situation is alarming. Surely not one that we would want to turn over to the old men, women and children to solve for us. Keep the young men on the farms as long as possible. If they are drafted into the service, secure their furloughs for the summer and if they are not subjected to draft let them understand that their services as trained farmers are of greater value on the farm than in the trench.

The attitude of many farmers no doubt needs adjusting to changed conditions. Last season many who produced abundant crops of perishable staples, such as potatoes, now find themselves with considerable amounts of these crops on hand in poor condition. With potatoes many growers refused satisfactory prices in the fall and early winter because they thought that they could hold out for higher prices. Under normal conditions they undoubtedly would have received more money later in the winter and, in fact, the prices did advance materially. But transportation difficulties became acute and it was impossible to ship the crops when the prices were highest and as a result, there are now large quantities of potatoes that must be sold at once at any price or they will soon be worthless. Will this sort of thing "help win the war?"

The new growing season is again at hand and it will be the most important one that any farmer alive today has ever seen. Upon the success of it will depend in a large measure the success of our armies. It is no time for selfish motives. Let us determine upon a broad agricultural policy that will align all farming interests into one motive. We will be handicapped in many ways in doing this. Labor will be scarce but labor-saving machinery can be had and worked on a co-operative basis, taking the place of both men and horses. Fertilizer is high, but we must make the best use of cover crops, applying such commercial fertilizers as the conditions warrant and using wood ashes to replace potash where there is an available supply. Seeds are scarce and we must therefore test all varieties that we plant, using only enough and giving to other farmers any surplus that may be on hand. We must cultivate every possible square foot of land that can be cared for thoroly.

The tendency to reduce the acreage of a crop that proved a failure last year is a very dangerous one, especially if it is a staple crop that is badly needed. Even tho the returns were not great, it is of the utmost importance to increase the acreage of such crops as corn, wheat, potatoes and to produce more hogs and poultry, for these things will play a vital part in next year's war program. In short, the farmer must stand squarely behind any policy that will bring about an abundance of food next year. "Will it help win the war?" should be the slogan.—L. Wayne Arny.

Time, Labor and Crop Conservation

Potash on Potatoes

Every potato grower is asking this question. He knows that his yield is not what it used to be when he used potash in his fertilizer, but does the cost of potash make the gain prohibitive in price?

Bulletin 317 of the New Jersey Experiment Station answers the question. When 1,600 pounds of a 4-8-3 fertilizer was used the yield was approximately 45 bushels more than when the same amount of 4-8-0 was used. At the present price the potash cost something less than $20, while the crop gain was worth $45, at a dollar a bushel. The profit from the use of 3 percent potash was $25, more than 100 per cent on the investment.

When, however, the amount of potash was increased the profit decreased. Therefore, it seems that at present prices of potatoes and potash more than three or four percent of potash does not pay, but up to 3 percent does pay well.—E. G.

Increasing Corn Yields

Acid phosphate, lime and stable manure are mentioned by specialists of the Ohio Experiment Station as the best materials to use for increasing corn yields. The application of these materials, before corn planting, has resulted in a sufficiently greater crop to more than pay the cost of treatment.

Acid phosphate by itself in tests at Wooster has increased the yield of corn 7½ pushels from an application of 80 pounds per acre. Combined with manure 320 pounds of acid phosphate has increased the yield nearly 35 bushels per acre. Stall manure by itself has raised the acre-yield by 23 bushels from an eight-ton application.

The acid phosphate was mixed with the manure at the rate of 40 pounds of the fertilizer per ton of manure, and both were spread on the field before it was plowed for corn.

Two tons of ground limestone applied after plowing for corn, in a five-year rotation with oats, wheat, clover and timothy, has increased the yield more than 10 bushels per acre. The average cost of the limestone has been $6.67. This cost has been recovered several times in increased yields of other crops of the rotation,

What Crops to Grow

The man who farms for immediate profit only will choose his crops with special reference to two items. These are the cost of their production and the value of their return. The man who looks far ahead, and who regards the future of his farm business as well as the present, will not only give due weight to these items but he will also add a third which will have a strong, and often a decisive, influence upon his choice. This supplementary item is the effect of what is grown this year upon following crops and upon the fertility of the land.

The mere statement of the first two items carries conviction of their importance. They are universally recognized as fundamental. But on many farms the third item does not receive adequate consideration and appearances indicate that on some farms it is not considered at all. For there are farmers, like some men in other lines of business, who are content to let the future take care of itself.

But most of the really progressive farmers have a general system of cropping which was adopted after careful consideration of all of the factors involved. In practice, minor details have occasionally been modified but the main features have been retained. Until recently the results of this course were such as to justify its continuance.

In the last two years, however, things in this country have so greatly changed as to upset many well-made plans and to demand wide variations from the ordinary course of procedure. Without regard to his occupation, every thinking man has been forced to take much broader views of life and of duty than those which he formerly held. There has come an imperative call to work less for private gain and do more for the public good. Under the new conditions it will not be enough for the farmer to ask what crops he can raise that will give the largest profit in cash and the greatest benefit to the land. He ought also to ask what, in addition to caring for home interests, he can best produce to help the nations which, with many of our own loved ones, are striving desperately to preserve Christian civilization and to make and keep the world a safe place in which to live. The crops that will be needed may not make large financial returns. Perhaps some of them will not pay expenses. But as a "war measure" they should be grown in such quantities as means will allow. And any loss of income from this cause should be regarded as a sacrifice for the right and an offering for the lasting benefit of mankind.—Elliot.

A surface dressing of manure aside from its plant food value has also a mulching value in conserving soil moisture and in giving winter protection to grasses, clover, alfalfa and small grain crops.

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No. 11—Born December 2d, 1917. He is an excellent individual and about evenly marked. His dam is a splendid individual, a daughter of "Johanna Mc Kinley Segis." This bull traces three times to King Segis and twice to Johanna De Kol Van Beers, the 40-lb. $7,000 cow.

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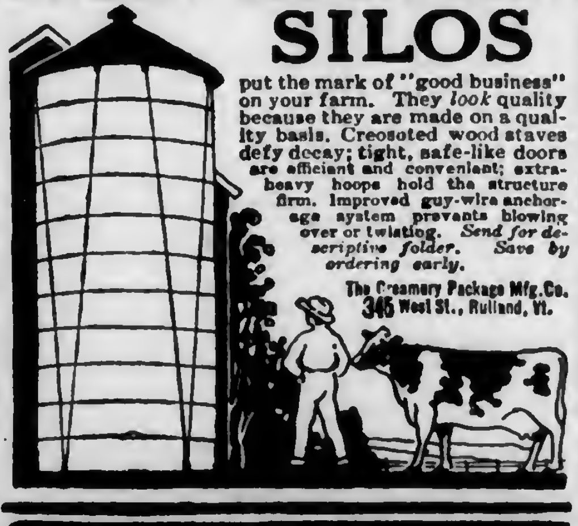

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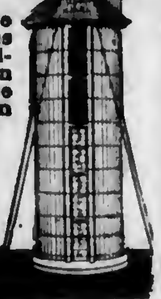

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The New York Milk Field

Milk and Feed Prices Present Real Proble

Now (April 25th) we are again facing a possible milk war. The Federal Milk Commission has set the price for May at $2.34, plus 12 cents recoup for losses on last December milk. This is for three percent milk at 150 miles from New York City, and it is understood that there is to be added four cents a hundred pounds for each tenth of one percent that milk tests above three percent. This, we understand, is the verdict of the Milk Commission. It is a better price than farmers were expecting, altho it is not supposed that it will pay the cost of producing the milk. As a whole, the Milk Commission seems to have done its best all thru the trying situation of the last few months. Farmers have not received sufficient to pay for the real cost of producing milk, yet by their unexampled efficiency they have managed for the most part to come out whole.

The Dealers

Now what about the other side? Some time ago the Bordens gave thirty days' notice to the Commission that they would no longer abide by the findings of the Commission, and some two or three other concerns did the same. This was not announced to the League until they met the Commission soon after the twentieth. In addition to the price fixed for dealers to pay the producers, the Commission made the retail price of milk 13 cents for bottled milk to consumers. The price that dealers are asked to pay is 50 cents higher than the Chicago price, I am told. This tends to make dealers unwilling to meet the price. It is intimated that there is likely to be trouble over the situation. As usual, we are anxious. A milk war now would be a calamity.

The Bordens are reported to have stated that they will close fifty of their plants and refuse 6,500 cans of milk a day at these places. They will only accept this milk on a butter and cheese basis. In one case and I presume in others, they have offered the use of their plants to the farmers with no charge for rent, but they ask that a manager of their selection be paid by the farmers.

The surplus of milk still continues to an alarming extent and is said to be looked for until August. Usually July sees the surplus disappear, but present conditions are unusual. Efforts are being made to have the Government take over cheese, butter and condensed milk and use it for the army and navy. No word has come in reply to the request. A plan that is proposed for the League is to pro rata the prices at stations and factories and give all League members a uniform price. We have no definite information on any of these projects at the present moment.

Feed Situation

The whole dairy situation today looks gloomy. The May price as announced by the Commission is perhaps all we could expect, but the next question is whether there will be buyers, and if any buyers, will a part of the farmers and League members be left out of a market? Then comes the feed question. No wheat feeds are on the market, nor do they seem likely to be for a long time ahead. Most of the other good feeds are now held close around $60 per ton and some are higher. In only a few cases are really good feeds offered as low as $50 per ton. One hesitates to buy at these rates at this time of the year, for the carrying charges are considerable. If there is a slump in business in the fall, the price of feeds will go down. This makes one hesitate about stocking up. On the other hand, there is some doubt about getting good feeds in the fall and winter.

There are a few things that it is fairly safe to do, altho not entirely so. Oil meal can be had now the cheapest of any time for several months past. It is $20 or so higher than a year ago; but it seems like a very tolerable buy just now for all that. It can be had, like most feeds, for about $5 per ton less in bulk than in sacks. A group of farmers can get a car of oil meal in bulk for a good bit less than $50 a ton. Somewhat the same may be said for hominy and gluten, altho these may be $2 to $5 higher. There is an abundance of barley feed, reground oat feed, cocoa shell meal and similar substances now offered at around $30, but it is doubtful if they are really worth more for feeding than oat straw would be. One had better let them alone.

Alfalfa hay may be worth buying a little later in the season, and if one can get oats at 75 cents or a little more, say in September, it may be a good plan to buy a car or two if the farmers will buy together and take car lots. Just now this looks like the best plan. It will give the farmer his feeds at a good discount from $60, otherwise he is liable to pay more.—L.

Note.—The market disturbance predicted in the above seems to have been forestalled by announcement of the June price of $1.80 for 3 percent milk with the usual differentials. It is understood that this move was necessary to swing the condensaries into line on the May price.—The Editors.

THE MAY AND JUNE PRICES

Following is a personal letter to the Inter-State Milk Producers' Association members from the Board of Directors:

The national market for dairy products has necessitated considerable reduction in milk prices thruout the country. This condition has been brought on largely by the decrease in shipping facilities for the foreign trade in condensed milk and other dairy products. At the same time your Association has fortunately been able to secure for its members during the past three months a price considerably in advance of the average price of the country. We could do this because the demand for fluid milk in Philadelphia has been increasing, so that now the consumption has again become as large as when milk was selling at 8 cents. The Food Administrator campaign to increase the consumption has been largely responsible for this increase in sales. Your Association has been very glad to contribute largely to the support of this movement.

Now with the beginning of May, we find it necessary to lower our prices again on account of the situation the country over. The price agreed upon and approved by the Food Administration is 6¼ cents f.o.b. Philadelphia for 4 percent milk. Receiving station prices, as you know, are calculated on this basis, less the freight and a receiving station charge of 23 percent per hundred pounds, or ½ cent per quart. All the large Philadelphia dealers, representative smaller ones and a large number of condensaries have agreed to this price.

During the past year Dr. King has made a careful survey of the cost of distributing milk in Philadelphia. A price of 4½ cents per quart has been approved by the Food Administration as a fair average allowance for this service at the present time. This covers all pasteurization, bottling, delivery and other city expenses. It is the lowest of any large city in the country. During May and June the retail price will remain at 12 cents and the dealers will get 5¼ cents per quart spread between the buying and selling price, or 1 cent more than the approved average. The Food Administration has granted them ½ cent of this for handling the usual surplus of their dairies. The remaining ½ cent per quart, or 23 cents per 100 pounds, will be applied to the price to be paid the producers during some future months as agreed upon and approved by the Food Administration.

There are some indications that the supply of by-product dairy feeds for next winter will not be adequate for the needs of the country, and many large buyers are now giving orders for next winter. The use of low grade feeds seems to be increasing, but relatively they are much higher in price than the cost of better goods. Other standard products such as gluten, hominy, linseed meal, brewers' grains, and high grade cotton seed meal (testing 36 to 41 percent) are sometimes sold in mixed feeds at an unfair advance above market prices.

Look over your herd for cows whose average production of milk will not justify keeping them longer. Never could they be sold to better advantage. Weigh each cow's milk or if the opportunity presents itself, join a Cow Testing Association so as to know with accuracy just what your cows are doing.

MILL FEED RETAIL PROFITS

Howard Heinz, U. S. Food Administrator for Pennsylvania, has issued the following rules governing profits which will be permitted retail dealers in mill feeds in this state:

A retail dealer shall in no case make more than a reasonable profit, and in no case shall be charged more for wheat mill feeds in original packages than the margin prescribed below over the delivered cost to him of the particular wheat mill feed sold.

(1) Where one or more farmers purchase in advance of delivery in full carloads, take delivery at car and pay cash when retail dealer is required to meet sight draft—$1 per ton, plus demurrage if any.

(2) Where one or more farmers purchase in advance of delivery in full carloads, take delivery at car and pay cash for it on delivery—$1.50 per ton, plus demurrage if any.

(3) Where farmer purchases and takes delivery at car and pays cash for it on delivery in ton lots or more but less than carlots—$2 per ton.

(4) Where farmer purchases and takes delivery at car and pays for it on delivery in lots less than one ton—$2.50 per ton.

(5) Sale ex-warehouse in lots of one ton or more—$4 per ton.

(6) Sale ex-warehouse in lots of less than one ton—$5 per ton.

(7) One dollar may be added to the foregoing margins when sale is made on credit, or at dealer's option the legal rate of interest may be charged.

The U. S. Food Administration suggests that it may be practicable to provide further that $1 be deducted from the margins prescribed in 5 and 6 when the retailer buys on credit and the jobber's margin is thereby increased $1 a ton by Special Feed Rule 7.

HOLSTEINS AND JERSEYS COMPARED

Holstein cows were found to eat less feed for a given amount of milk produced than Jerseys in co-operative dairy work conducted among farmers thru the Ohio Experiment Station, but in economy of butterfat production the Jerseys led.

More than 150 cows of each breed owned by farmers who sent records to the Experiment Station were included in this study. The Jerseys ate 106 pounds of digestible nutrients for each hundred pounds of milk produced, while the Holsteins consumed but 91 pounds. For each pound of butterfat produced the Holsteins consumed 26⅓ pounds of digestible nutrients and the Jerseys only 19⅝ pounds.

The Jerseys ate 18⅓ percent more digestible nutrients and produced 1⅔ percent more milk and 59⅓ percent more butterfat than the Holsteins on the basis of a thousand pounds live weight for each animal. The Holsteins were assumed to average 1,200 pounds in weight and the Jerseys 850 pounds.

NATIONAL DAIRY EXPOSITION

The National Milk and Dairy Farm Exposition, to be held in the Grand Central Palace, New York City, the week of May 20, promises to be one of the most notable events of the kind ever held in the East. Exhibits will cover practical demonstrations of all forms of milk foods and milk products, processes of milking, handling, machinery and equipment. Special days with accompanying programs have been arranged as follows: Monday, May 20, New York State Day; Tuesday, May 21, Distributors' Day; Wednesday, May 22, Milk Products' Day; Thursday, May 23, Dairymen's League Day; Friday, May 24, New York City Day; Saturday, May 25, Women's Day.

DELAWARE COLLEGE GUERNSEYS

Delaware College recently sold Anton's May King 27387 for $7,000 and his half-sister Molly Rose O. D. 50617 for $1,750 to Mrs. Kathryn Fasig Kramer, Berks Co., Pa., who is establishing a herd of high-class Guernseys. The Delaware College herd was started in 1910 by the purchase of females in milk for $75 to $400 a head. The results have shown exceptional work in breeding, care and management of the herd.

No dog law is worth the paper it is printed on unless public opinion backs it to the limit. One of the causes of the lack of growth in the sheep industry of the East is the vagrant dog.

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Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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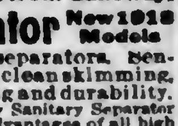

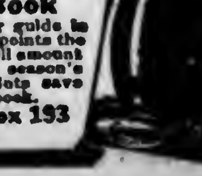

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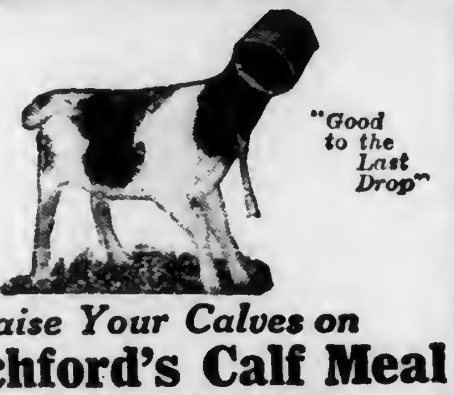
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Offer For Sale Sons of
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A 33-Pound Bull.

He traces twice to King Segis through his two best sons; Johanna Mc Kinley Segis with a 40-lb. dam and King Segis Pontiac with a 37.20-lb. dam.

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Full particulars including pedigree and photographs will be sent on request to:

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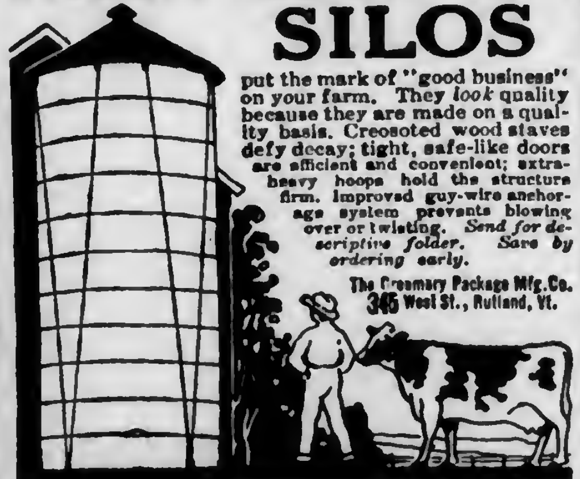

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A PERMANENT SILO
Every Economy Silo is equipped with the Storm Proof anchoring system that makes it absolutely permanent. Ensilage is always fresh and sweet—it can't spoil in an Economy Silo. Perfect fitting doors make the Silo perfectly air-tight. Hoops form easy ladder. Built of long leaf Yellow Pine or Oregon Fir. You can't buy a better silo. Also all sizes Water Tanks. Our motto is quality through and through. Factories at Frederick, Md. and Roanoke, Va. Write for catalog.
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Only $2 DOWN ONE YEAR TO PAY

$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here.
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Continuous Open Door Front, Permanent steel ladder attached
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The New York Milk Field

Milk and Feed Prices Present Real Proble

Now (April 25th) we are again facing a possible milk war. The Federal Milk Commission has set the price for May at $2.34, plus 12 cents recoup for losses on last December milk. This is for three percent milk at 150 miles from New York City, and it is understood that there is to be added four cents a hundred pounds for each tenth of one percent that milk tests above three percent. This, we understand, is the verdict of the Milk Commission. It is a better price than farmers were expecting, altho it is not supposed that it will pay the cost of producing the milk. As a whole, the Milk Commission seems to have done its best all thru the trying situation of the last few months. Farmers have not received sufficient to pay for the real cost of producing milk, yet by their unexampled efficiency they have managed for the most part to come out whole.

The Dealers

Now what about the other side? Some time ago the Bordens gave thirty days' notice to the Commission that they would no longer abide by the findings of the Commission, and some two or three other concerns did the same. This was not announced to the League until they met the Commission soon after the twentieth. In addition to the price fixed for dealers to pay the producers, the Commission made the retail price of milk 13 cents for bottled milk to consumers. The price that dealers are asked to pay is 50 cents higher than the Chicago price, I am told. This tends to make dealers unwilling to meet the price. It is intimated that there is likely to be trouble over the situation. As usual, we are anxious. A milk war now would be a calamity.

The Bordens are reported to have stated that they will close fifty of their plants and refuse 6,500 cans of milk a day at these places. They will only accept this milk on a butter and cheese basis. In one case and I presume in others, they have offered the use of their plants to the farmers with no charge for rent, but they ask that a manager of their selection be paid by the farmers.

The surplus of milk still continues to an alarming extent and is said to be looked for until August. Usually July sees the surplus disappear, but present conditions are unusual. Efforts are being made to have the Government take over cheese, butter and condensed milk and use it for the army and navy. No word has come in reply to the request. A plan that is proposed for the League is to pro rata the prices at stations and factories and give all League members a uniform price. We have no definite information on any of these projects at the present moment.

Feed Situation

The whole dairy situation today looks gloomy. The May price as announced by the Commission is perhaps all we could expect, but the next question is whether there will be buyers, and if any buyers, will a part of the farmers and League members be left out of a market? Then comes the feed question. No wheat feeds are on the market, nor do they seem likely to be for a long time ahead. Most of the other good feeds are now held close around $60 per ton and some are higher. In only a few cases are really good feeds offered as low as $50 per ton. One hesitates to buy at these rates at this time of the year, for the carrying charges are considerable. If there is a slump in business in the fall, the price of feeds will go down. This makes one hesitate about stocking up. On the other hand, there is some doubt about getting good feeds in the fall and winter.

There are a few things that it is fairly safe to do, altho not entirely so. Oil meal can be had now the cheapest of any time for several months past. It is $20 or so higher than a year ago; but it seems like a very tolerable buy just now for all that. It can be had, like most feeds, for about $5 per ton less in bulk than in sacks. A group of farmers can get a car of oil meal in bulk for a good bit less than $50 a ton. Somewhat the same may be said for hominy and gluten, altho these may be $2 to $5 higher. There is an abundance of barley feed, reground oat feed, cocoa shell meal and similar substances now offered at around $30, but it is doubtful if they are really worth more for feeding than oat straw would be. One had better let them alone.

Alfalfa hay may be worth buying a little later in the season, and if one can get oats at 75 cents or a little more, say in September, it may be a good plan to buy a car or two if the farmers will buy together and take car lots. Just now this looks like the best plan. It will give the farmer his feeds at a good discount from $60, otherwise he is liable to pay more.—L.

Note.—The market disturbance predicted in the above seems to have been forestalled by announcement of the June price of $1.80 for 3 percent milk with the usual differentials. It is understood that this move was necessary to swing the condensaries into line on the May price.—The Editors.

THE MAY AND JUNE PRICES

Following is a personal letter to the Inter-State Milk Producers' Association members from the Board of Directors:

The national market for dairy products has necessitated considerable reduction in milk prices thruout the country. This condition has been brought on largely by the decrease in shipping facilities for the foreign trade in condensed milk and other dairy products. At the same time your Association has fortunately been able to secure for its members during the past three months a price considerably in advance of the average price of the country. We could do this because the demand for fluid milk in Philadelphia has been increasing, so that now the consumption has again become as large as when milk was selling at 8 cents. The Food Administrator campaign to increase the consumption has been largely responsible for this increase in sales. Your Association has been very glad to contribute largely to the support of this movement.

Now with the beginning of May, we find it necessary to lower our prices again on account of the situation the country over. The price agreed upon and approved by the Food Administration is 6¾ cents f.o.b. Philadelphia for 4 percent milk. Receiving station prices, as you know, are calculated on this basis, less the freight and a receiving station charge of 23 percent per hundred pounds, or ½ cent per quart. All the large Philadelphia dealers, representative smaller ones and a large number of condensaries have agreed to this price.

During the past year Dr. King has made a careful survey of the cost of distributing milk in Philadelphia. A price of 4½ cents per quart has been approved by the Food Administration as a fair average allowance for this service at the present time. This covers all pasteurization, bottling, delivery and other city expenses. It is the lowest of any large city in the country. During May and June the retail price will remain at 12 cents and the dealers will get 5¼ cents per quart spread between the buying and selling price, or 1 cent more than the approved average. The Food Administration has granted them ½ cent of this for handling the usual surplus of their dairies. The remaining ½ cent per quart, or 23 cents per 100 pounds, will be applied to the price to be paid the producers during some future months as agreed upon and approved by the Food Administration.

There are some indications that the supply of by-product dairy feeds for next winter will not be adequate for the needs of the country, and many large buyers are now giving orders for next winter. The use of low grade feeds seems to be increasing, but relatively they are much higher in price than the cost of better goods. Other standard products such as gluten, hominy, linseed meal, brewers' grains, and high grade cotton seed meal (testing 36 to 41 percent) are sometimes sold in mixed feeds at an unfair advance above market prices.

Look over your herd for cows whose average production of milk will not justify keeping them longer. Never could they be sold to better advantage. Weigh each cow's milk or if the opportunity presents itself, join a Cow Testing Association so as to know with accuracy just what your cows are doing.

MILL FEED RETAIL PROFITS

Howard Heinz, U. S. Food Administrator for Pennsylvania, has issued the following rules governing profits which will be permitted retail dealers in mill feeds in this state:

A retail dealer shall in no case make more than a reasonable profit, and in no case shall be charged more for wheat mill feeds in original packages than the margin prescribed below over the delivered cost to him of the particular wheat mill feed sold.

(1) Where one or more farmers purchase in advance of delivery in full carloads, take delivery at car and pay cash when retail dealer is required to meet sight draft—$1 per ton, plus demurrage if any.

(2) Where one or more farmers purchase in advance of delivery in full carloads, take delivery at car and pay cash for it on delivery—$1.50 per ton, plus demurrage if any.

(3) Where farmer purchases and takes delivery at car and pays cash for it on delivery in ton lots or more but less than carlots—$2 per ton.

(4) Where farmer purchases and takes delivery at car and pays for it on delivery in lots less than one ton—$2.50 per ton.

(5) Sale ex-warehouse in lots of one ton or more—$4 per ton.

(6) Sale ex-warehouse in lots of less than one ton—$5 per ton.

(7) One dollar may be added to the foregoing margins when sale is made on credit, or at dealer's option the legal rate of interest may be charged.

The U. S. Food Administration suggests that it may be practicable to provide further that $1 be deducted from the margins prescribed in 5 and 6 when the retailer buys on credit and the jobber's margin is thereby increased $1 a ton by Special Feed Rule 7.

HOLSTEINS AND JERSEYS COMPARED

Holstein cows were found to eat less feed for a given amount of milk produced than Jerseys in co-operative dairy work conducted among farmers thru the Ohio Experiment Station, but in economy of butterfat production the Jerseys led.

More than 150 cows of each breed owned by farmers who sent records to the Experiment Station were included in this study. The Jerseys ate 106 pounds of digestible nutrients for each hundred pounds of milk produced, while the Holsteins consumed but 91 pounds. For each pound of butterfat produced the Holsteins consumed 26⅓ pounds of digestible nutrients and the Jerseys only 19⅝ pounds.

The Jerseys ate 18⅓ percent more digestible nutrients and produced 1⅗ percent more milk and 59¼ percent more butterfat than the Holsteins on the basis of a thousand pounds live weight for each animal. The Holsteins were assumed to average 1,200 pounds in weight and the Jerseys 850 pounds.

NATIONAL DAIRY EXPOSITION

The National Milk and Dairy Farm Exposition, to be held in the Grand Central Palace, New York City, the week of May 20, promises to be one of the most notable events of the kind ever held in the East. Exhibits will cover practical demonstrations of all forms of milk foods and milk products, processes of milking, handling, machinery and equipment. Special days with accompanying programs have been arranged as follows: Monday, May 20, New York State Day; Tuesday, May 21, Distributors' Day; Wednesday, May 22, Milk Products' Day; Thursday, May 23, Dairymen's League Day; Friday, May 24, New York City Day; Saturday, May 25, Women's Day.

DELAWARE COLLEGE GUERNSEYS

Delaware College recently sold Anton's May King 27387 for $7,000 and his half-sister Molly Rose O. D. 50617 for $1,750 to Mrs. Kathryn Fasig Kramer, Berks Co., Pa., who is establishing a herd of high-class Guernseys. The Delaware College herd was started in 1910 by the purchase of females in milk for $75 to $400 a head. The results have shown exceptional work in breeding, care and management of the herd.

No dog law is worth the paper it is printed on unless public opinion backs it to the limit. One of the causes of the lack of growth in the sheep industry of the East is the vagrant dog.

72 page catalog mailed upon request

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DE LAVAL
CREAM SEPARATOR

GREATER CAPACITY: New capacities have been increased 10%, without increase of speed or effort required in operation.

SKIMS CLOSER: The improved bowl design, together with the patented milk distributor, gives greater skimming efficiency.

EASIER TO WASH: Simpler bowl construction and discs caulked only on the upper side make the bowl easier to wash.

EASIER TO TURN: The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest to turn and least tiring to the operator.

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SERVICE WHEN YOU NEED IT: The world-wide De Laval organization, with agents and representatives ready to serve users in almost every locality where cows are milked, insures the buyer of a De Laval quick and efficient service whenever he needs it.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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For
Your Corn and other Grain Crops

The Last Word In Protection & Conservation

Get rid of your old, ramsackle Corn cribs. Don't feed the rats, mice and birds. They can feed themselves—and then, it's hardly patriotic. Buy a

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PHILADELPHIA, PA., MAY 11, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

My Part

Constructive criticism is always helpful. It is essential to progress. But the critic should be willing to meet as high a standard in his personal performance as he sets up for those he seeks to criticise. It is easy to criticise the ship-building program; we are not ship builders. It is easy to rail at delays in aircraft building; we are not makers of airships. It is easy to condemn railroad management; we are not railroaders. It is easy to tell what Congress should or should not do; we are not members of Congress. It is easy to become thoroly aroused in our honest anxiety and patriotic concern in these and many other things in which we have little if any part. But none of these are of greater importance than the production of food and the saving of those foods most urgently needed by our Allies; and in the doing of these things we can all help. The Food Administration has said: "Now is the hour of our testing. Wheat is the test." Unless we are doing our utmost to make wheat available, to the extent of selling all wheat not actually needed for seed and going without wheat in our daily ration, we are not doing all of our small share. There are many people who will not eat wheat between now and next harvest, but not enough have taken to themselves this voluntary sacrifice. "Our boys" are now taking part in the glorious defense of the allied line. Their food supply for the next three months, as well as the supply of the French and British defenders, depends to a large degree upon the sacrifices we are willing to make, not in stinting our ration, but in substituting other foods to release more of the wheat for them. Ours is an easy part, but a most important one.

* * *

History Reverses Itself

One of Shakespeare's characters criticizes another for attempting to cool his broth and also warm his hands by blowing upon them. The Scriptures condemn those out of whose mouths proceed both cursing and blessings. So, we find that men have always been prone to use their tongues and their wits to present the arguments which best suits their selfish purpose, regardless of how they used them for previous ends.

At the present time we find northern politicians arguing against the adoption of the prohibitory amendment because it is "an interference with state's rights;" that the nation has no right to force upon an individual state something it might not choose for itself. These people seemingly forget that the Civil War was fought and won as a negation of the doctrine of state's rights. That issue settled for all time the principle that the will of three-fourths of the states shall be the law for all.

Another interesting reversal of argument is made by the liquor people and is found in the Anti-Prohibition Manual. Not long ago the liquor men tried to make it appear that men of affairs, the big captains of industry, were favorable to the temperate use of intoxicants and were against prohibition laws. Because of the universal stand of this class of business men against the use of liquor—a stand taken during the last few years—the 1918 "Handbook" states that "the Priviliged Interests ...... are trying to divert public attention from unjust economic conditions by raising the false issue of suppressing the liquor traffic." Also, that newspapers are supporting the amendment for fear of the criticism of the powerful interests, and are using prohibition as a means of "side-tracking the movement for Social Justice."

All such arguments but make right-thinking people more than ever determined to vote for dry candidates on May 21.

* * *

Wool Control

Wool has been added to the products coming under Government control during the war. The War Industries Board, after many conferences, has announced the fixing of the price of raw wool to the producer at that prevailing on July 30, 1917. The best grades of fleece wools ranged from about $1.45 to $1.73 per pound, scoured basis, on the date named. Taking these as a basis, the grower will have to know what the shrinkage is to know the approximate value of the wool he has to sell. It is likely that schedules will be issued showing the approximate shrinkage of different kinds of wools in the various sections, but the grower will not be able to have definite information on his particular wool until it has passed thru the scouring process. The means of marketing and the charges for sacking, insurance, scouring, storage, etc., have not been definitely announced. Dealers in raw wools will be permitted to charge 3 percent commission on ungraded and 3½ percent on graded wools. It is reported that the basic price should permit a price of about 74 cents per pound for best western Pennsylvania wool. The commissions, freight and handling charges incident to moving the wools are likely to bring that price down some six to eight cents per pound, providing the grower has to pay these charges. A price of from 64 to 66 cents per pound, while large as compared with a few years ago, will not give great impetus to the sheep industry on eastern farms under present producing conditions.

* * *

Conserve Health

Sickness and death were at one time considered to be visitations of Divine displeasure, or an effort on God's part to convert man from sinful ways. Millions of the human family have suffered and died in this blind faith, and incidentally in filth and ignorance. Now, we know that most of humanity's ills are to a great extent preventable, if not curable—thanks to the investigation of scientists. The combatting and eradicating disease has been made possible by the discovery that germs are the cause of most diseases, and that it is possible to prevent, in a great measure, the multiplication and spread of these germs. For example, it used to be believed that malaria, prevalent in low-lying sections, was due to excessive dampness of those sections, whereas, it was discovered that since the low-lying places were the breeding places of mosquitoes, they carried the germs producing malaria and injected them into the human system; that if the breeding places of the mosquito were drained, or the water covered with oil, malaria disappeared. The same insect was found to be responsible for yellow fever, and similar methods of warfare have almost eliminated that disease. Typhoid fever, another disease which baffled the medical men until the germ producing it was isolated, a disease which is yet the most serious rural disease in the north, is found to be preventable, at least so far as neighborhood epidemics are concerned.

Disease germs breed in filth, wet places and in many food products—especially milk. An intelligent care for local and neighborhood sanitation will cause the cleaning up of all places in which disease germs may multiply; will see to it that places where food is kept are clean and sweet, and will also take especial care to destroy the breeding places of germ carriers—flies, mosquitoes, rats, etc. The generous use of disinfectants and lime is to be recommended also, but remember that lime, while a "sweetener," is not a disinfectant.

* * *

Feed Dealers' Margins

The schedule of mill feed retail profits agreed upon by the Food Administration is given on page 5 of this issue. This is the big step in feed price control that has been promised for several months. It is expected to supplement the mill feed regulations put out in February. The former regulations limited the price that millers could charge for bulk bran, f. o. b. the mill and etsablished differentials to apply to other mill feeds, such as shorts, middlings, Red Dog, etc. The latest regulations fix the margins which the retail dealers will be permitted to charge in the various forms of selling. The operations of sacking, transportation, etc., between bulk feed at the mill and at the dealer's station or warehouse are not fully covered except by the provision in the February ruling that invoices must show the bulk price, price of sacks, items of freight, interest, etc. Dairymen early discovered that the February ruling had little perceptible influence on retail prices. The ruling just announced is certain to have its effect, but just how and to what extent can only be determined by time.

Applying the two sets of regulations to specific cases we gain a clearer idea of how the control is intended to operate. The mill feed order provided that the price of bran in bulk, f. o. b. the mill, in carload lots, for one ton of 2,000 pounds could in no case exceed 38 percent of the average cost to such mill of one ton of wheat. Under present regulations the basic price of wheat next fall will be $2.20 per bushel. Variations are made for localities which have made the average price at Philadelphia about $2.27 per bushel. At this price a ton of wheat would cost $75.67. The mill is to be allowed to charge 38 percent of this for bran which would make a price of $28.76 per ton for bulk bran in carload lots at the mill in Philadelphia. Prices on other mill feeds were fixed from bran as the basic feed. Thus shorts or standard middlings were to sell at $2 per ton over the bran price; mixed feeds, $4 over bran prices, flour middlings, $9 and Red Dog, $15 per ton over bran prices. The bagging charge is not covered but on the great bulk of the dairy feed consumed in the East there will be a bagging charge and a freight bill. Applying the latest regulations to this basic price, bran would be $29.76 per ton, plus demurrage, freight and sacking when purchased as described under Group 1 (see article page 5); $30.26 per ton, plus demurrage, freight and sacking when purchased as described in Group 2; $30.76 per ton for Group 3; $31.26 per ton for Group 4; $32.76 per ton for Group 5 and $33.76 per ton for Group 6. The retail margins would apply in the same way to the basic prices quoted on the other feeds named.

These prices look most promising, but it will be well to remember that they are but promises until you see them in force in your local market. They offer big inducements to feeders to buy in quantities. There was never a better time for dairymen to combine and buy feed in carlots. And the wise dairyman will buy as early as he can get an encouraging price. Many of the smaller feed dealers may decide that they must go out of business under close regulation of sales. Many more may find it necessary to limit their stocks to a few lines of goods. If it is found under practice that the margins permitted are too small to permit local dealers to operate, it will be necessary for many dairymen to buy direct from the mills.

HARRISBURG NOTES

People Not Interested.—If any thing was really neeeded to turn the attention of the people of Pennsylvania away from politics as a matter of importance this spring the new draft calls appear to have supplied it. For the last month the keen political observers who have places in the Capitol, or occupy posts of vantage in organizations, have been saying that the average man in the Keystone State was concerned about the war more than about the primary. The Democratic campaign has not yet reached the vocal stage but there are signs that it may do so. It is doubtful whether much attention is going to be paid to even some of the startling "exposes" that have been promised.

The draft call will take over 20,000 young men from the state and the calling up of these workers and their examination will interest a great many people because it is going to have its effect on industry and business and may involve the farm where young men have been given deferred classification to help with farm work, because the industries will be offering high wages. Such attractions, however, will not mean much because when a young man leaves a farm he loses his deferred class and must go into the proper number so that his enjoyment of a highly-paid job in a mill may not last long.

The committees in charge of the labor problem in the various counties have been busy among school boys, but as the school terms have not yet ended the recruits from this source have not been numerous. State Draft headquarters says that the requests for deferred classification for young men on farms have not been heavy. In another month the draft boards will be calling up for registration all young men who have become 21 since last June and those on farms should lose no time in presenting their claims.

Money For Roads.—The State Highway Department has begun the distribution of $944,135.20 to the second class townships of the state for dirt road maintenance, this being a share of the appropriation made last year to get the state evened up with the counties in the legislative tangle over the cash road tax bonus. The state gave out over a million dollars last year to settle up 1910 and 1912 and is now paying for 1911.

Big Sum in Sight.—According to calculations being made here by men the State Highway Department has an almost fabulous amount of money in sight for road building. It is figured out as something around $15,000,000, counting in the federal allowances. Thus far the contracts let have not called for any great amount of construction and those which have been given range from $30,000 to $40,000 per mile.

Against Oleo Change.—Dairy and Food Commissioner James Foust has returned to the charge in the preliminary battle being waged over the proposition to abolish the license on oleo. The commissioner says that statements that the abolition of the license tax in Pennsylvania, which uses more oleo than any other state, would result in a reduction of the price to the public are "bunk." He cites the fact that prices in states where there are no licenses are the same as in this state. In addition he says it would open the doors to all kinds of trouble in the trade and mean much annoyance and expense for the public to regulate.

More Hold-Ups.—Auditor General Snyder has refused to pay salaries of some attaches of the state Government because he is not satisfied as to the work they have been doing and it has transpired that E. B. Dorsett, who was chief of market for a time, has not been paid either, the auditor general wanting information about his appointment. Some of the factory inspectors have also been under investigation. And a legislator has been turned up who is getting the large salary of $65 a month as a clerk in the State Highway Department.

Would Make News.—A remark by Gifford Pinchot while here the other evening may prove interesting. The former forester came here to arrange for his speech-making in behalf of J. Denny O'Neil, altho some of his former progressive friends are for W. C. Sproul. In the course of the conversation it was said that there was regret that he had not accepted a place on the Commission of Agriculture as he would have "made news." Mr. Pinchot replied that if he ever went on the commission he would, indeed, make news. People here are wondering what he meant.

Teachers' Retirement.—The signs are that the teachers' retirement or pension system will be in full operation in a year. The Legislature will be asked to make a substantial contribution to it next winter and then the local districts will furnish a share, while each teacher will make a contribution from salary according to a table which has been worked out. This schedule is to be put in the hands of all the teachers and school authorities so that they may know just what must be met. The result may be to hold more teachers in the profession, altho in many districts increases of pay will have to be granted next year.—Hamilton, Harrisburg, Pa., May 6.

NEW YORK LETTER

Milk Conditions.—The new price announced for May milk is $2.34, plus a recoup of 12 cents a cwt. for 3 percent milk in the 150-mile zone from New York City. Borden's, the Nestle Food Company and the Shefford Cheese Company have withdrawn from the dealers' association, but deny the report that they will close their stations or condensories. The Cayuga Dairy Company has filed articles of incorporation, setting forth its objects as the producing, purchasing, marketing and dealing in dairy and allied products. Milk producers of Auburn are asking 7 cents a quart for their milk and the dealers say they must raise retail prices if they pay it. This would make delivered wilk in Auburn 12 cents a quart. The Gouverneur Dairy board adjourned Saturday night without making a price for cheese. The buyers present would not pay over 21½ cents. This was the price paid by the Watertown Board that afternoon. The Plymouth board reported the price for the week at 21 @21½ cents. The latter registered 1,636 boxes, as compared with 1,559 boxes last year at the same period. Many milk meetings have been held in the state this week to discuss the new schedule of prices and other seasonable topics.

Fruit Package Prices Exhorbitant.—Fruit growers of the state are much disturbed over the new prices fixed on fruit packages of all sorts from berry baskets to apple barrels. They say the consumers must pay the raise, and that it will necessitate a price that will greatly reduce demand and force bulk sales to canners. The rise is from 25 percent to 80 percent on the various kinds, and payment must now be cash down, instead of deferred until November 1, as of old. Bushel baskets for peaches and apples that last year sold for $1.25 per dozen are now $2.20 per dozen; 14-quart peach baskets were $65 per 1,000 last year; now they are $110; 10-quart baskets were $33, now they are $75; while the package, picking, and hauling costs on a barrel of apples will this year be $1.25 per barrel, exclusive of the cost of growing the apples.

Farmers to the Front.—Farmers were accused of a lack of patriotism in not responding more liberally to the first and second Liberty Loans. Heads of committees for arranging for the third loan were convinced on inquiry that this failure to buy bonds was not due to a lack of patriotism so much as to a lack of opportunity and of acquiring confidence in the need of the movement. So this spring they secured the co-operation of state and county leaders of granges, farm bureaus, Dairymen's League branches and other rural organizations. The result has been almost without exception thruout the state that the towns and rural sections were first to make up their quotas, with farmers as liberal buyers. Cities have been slowest to make up allotments. Cortland County claims to be not only first in the state, but first in the country to report every township, small town and city to have made up their quotas, many very largely over-subscribing.

First Indian Farm Institute.—This week saw the first farmers' institute held on the Onondaga Indian Reservation. Seed corn and potatoes from pedigreed stock were loaned to the Indian farmers to be returned next fall for reloaning. Last year the Indian farmers tested the superior yield from pedigreed seed and are anxious for more. Three trained women food experts gave the first work in home economics to the Indian women at same time and found most of them very responsive to instruction.

Women to Enroll.—The Governor has appointed May 25 as a day for the new women voters to enroll with their preferred political parties. This is necessary in order to vote—and it is suggested that school houses be used as centers for enrollment as a matter of convenience.

Co-Operative Selling of Wool.—The Wool Growers' Association of Tompkins County, also growers of Seneca County, will co-operate in selling their wool. A committee of three men has been appointed to advertise the wool and secure bids, which will be opened July 15th. Three or four places will be designated as shipping places in each county, on certain days when official inspectors will supervise the weighing and grading of the wool, payment to be made at once. All consigners of wool must be members of the Wool Growers' Association and must state their intention to co-operate by May 15th. This is a commendable method of selling all farm produce and has worked out well in other sections. Sheep growing is receiving an impetus in this state by western buyers who have taken up abandoned farms and will stock them with sheep from their ranches in the west.

Wheat Has Suffered.—Many entire fields of winter wheat have been plowed or harrowed up this week as the stand was a failure. Oats or spring wheat has replaced it. Despite the urgings of the Government to grow more spring wheat the Onondaga County farm bureau thru its manager, J. R. Teall, strongly advises against it. Spring wheat is but a gamble in this section of the state, he says, and it is unpatriotic this year to grow any crop uncertain of results. Central New York farmers know they can grow oats, barley and other crops successfully and it is best for them not to experiment this year.

More Nurses Wanted.—Vassar College at Poughkeepsie, and Syracuse University will conduct special summer classes for the training of nurses to take the place of more experienced ones who are greatly needed at the war front. General Pershing has called for 35,000 nurses, and our country now has but 65,000. Civilians will suffer for lack of nurses when this number goes abroad, and college women everywhere are urged to take these short courses, as they are better fitted to take the intensified course of study that will be necessary for such short training.

Utilize Patriotism of Prisoners.—Sing Sing reformers are urging the Government to form a regiment for war service in any department needed from the lists on the prison rolls. They say the prisoners are a part of the nation, eating, feeling, aspiring to better things, and that such a parole would help them to better things, as well as being of service to their country. Recently, their prisoners bought $1,000 worth of Liberty Bonds and gave them to the Red Cross, out of money earned at 1½ cents a day, the wages paid by the state, each dollar representing 70 days' work. Elmira Reformatory has 300 graduates now in the service. It is against army rules now to accept a man convicted of felony.

Fix Profits, Not Prices.—The removal of incentive to grow the most needed grain crops is the result of price-fixing, is urged by a New York firm which suggests fixing profits, not prices—as a better future governmental policy.—F.

COUNTY NOTE

Snyder Co., Pa., (C) May 2.—Rough and stormy weather at present. Rains quite frequent, followed by cold weather and frosts. Fully 50 percent of the plowing yet to be done for spring crops. Farmers are back with spring work and very little oats sown yet. No corn is planted. Blossoms are out on cherry, plum, pear and peach trees. Some early gardening is done and early potatoes and vegetables are planted. There is considerable sickness, especially pneumonia and fevers. Numerous county schools are closing, followed by commencement exercises. Wheat sells at $2.10; corn, $1.60; oats, 75 cents; rye, $1.70; butter, 42 cents; eggs, 30 cents; chickens, 22 cents; lard, 28 cents; onions, 12 cents; bran $2.50 cwt; middlings, $2.50 cwt; flour, $11.20 bbl.; chop, $3 cwt.—S. D. Diffenderfer.

POTATO BULLETIN

"Blackheart" in Potatoes.—Bulletin No. 436, Geneva Experiment Station, Geneva, N. Y. "Blackheart", a trouble of potatoes that has recently attracted attention, was at first regarded as a malady originating in shipment only, and is undoubtedly most common when potatoes are held at too high temperatures in closed cars. It has been found, however, in extensive tests made by the Station at Geneva, that lack of ventilation, if long continued, will produce the same trouble even when the potatoes are held at low temperatures. As the temperature rises the volume of air needed to prevent blackheart increases. If the temperature is below 40 degrees F. potatoes may be piled in bins and cellars to a depth of six feet without ventilation, probably for six months or more; and it is probable that no harm will result if the thermometer in the storage room indicates 45 degrees for a few days; but a long period of storage followed by two weeks' exposure to a temperature of 50 degrees or more is liable to result in the spoilage of most of the tubers below a depth of about three feet. Complete exclusion of the air will ruin potatoes at any temperature. If potatoes are to be stored at greater depths than six feet, no matter what the temperature, ventilators should be provided and so arranged that none of the potatoes should be more than six feet distant from an abundant supply of air.

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These protectors are used and recommended by the large growers, why not profit by their experience? Special offer—500 for a $1 bill, 1000—for a $2 bill, charges prepaid. Address
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Horticulture

SAVING IN SPRAYING COSTS

By Dr. J. P. STEWART

The Use of Arsenate of Lime

Last week the writer pointed out the economies which might be effected by making the principal fungicidal spraying materials at home this year. We now wish to call attention to some of the possibilities for saving in the case of the principal arsenicals.

Of late years the principal arsenical used on fruits and vegetables has been arsenate of lead. It was first used as an insecticide by the Gipsy Moth Commission in Massachusetts in 1893. The materials used before were principally Paris green and London purple. The lead arsenate, however, stuck much better and could be used considerably stronger without injury to the plants. On plants which are especially susceptible to spray injury, such as peach, Japanese plum, cucurbits, etc., it is still the most desirable form of arsenical to use.

On plants whose foliage is less subject to spray injury, however, such as the apple, pear, grape, potato, etc., another arsenical is now available which furnishes arsenic at considerably less cost than lead arsenate, and which also combines better with lime-sulphur solutions. This material is the arsenate of lime. In the powdered form, which is most convenient, this material carries 43 to 44 percent of arsenic and can now be obtained at 26 cents per pound in 200-pound barrels f. o. b. the factory, while lead arsenate powder carries not over 32 or 33 percent of arsenic and now costs at least 33 cents at the factory. On a strict comparison, therefore, a pound of arsenic in the lime arsenate will now cost only 58.6 percent of its cost in lead arsenate.

This is a saving well worth considering, if the materials are equally good. Evidence on this may be obtained in a careful test of the relative injury from these two materials, which was made in the Annapolis valley of Nova Scotia in 1916 and reported by their field entomologist, G. E. Sanders. His findings are given in the report of the Fruit Growers' Association of Nova Scotia for 1917. In that report he states that "where arsenate of lime was used it caused less burning and less dropping of fruit than where arsenate of lead was used with the same strength of lime and sulphur." Nothing is stated about the relative efficiency of the two materials in controlling the codling moth and similar insects, but inasmuch as he found the lime arsenate most efficient against cankerworms which are very hard to kill, and since he concludes by recommending "arsenate of lime in place of arsenate of lead in all lime-sulphur solutions," we can assume that that phase of it was satisfactory.

Mr. Sanders also finds that the arsenate of lime is less wasteful than arsenate of lead when added to lime-sulphur solutions. This is because no chemical reaction occurs when arsenate of lime is added, but when the lead arsenate is added "nearly all the lead goes to the bottom of the tank as lead sulphide precipitate or sludge, taking with it about 35 percent of the sulphur from solution." Further, "the lead sulphide sludge prevents proper agitation and so causes much poison that should go on the trees to be retained in the bottom of the spray tank."

This is of special interest to the writer as these general relations were all pointed out by him some nine years ago in the first bulletin ever issued on the subject. At that time, however, we had no arsenate of lime so that our observations were based on the arsenate of lime, which is a relatively inferior material for outdoor spraying. Our present confidence in the arsenate of lime, however, is based on certain tests of our own as well as those just referred to in Canada. For use in water alone, our tests do not indicate it to be as safe or as lasting as the arsenate of lead. But when used with lime-sulphur or Bordeaux, it is certainly fully as satisfactory as the more expensive material, and hence I am using it this year in some fairly extensive apple-spraying in which I am interested.

The rate of application may be three-fourths of a pound of the powder or about two pounds of the paste arsenate of lime in 50 gallons of water or fungicide. If used in water alone, it will be well to add the milk of lime formed by slaking about 2 pounds of stone lime to each 50 gallons of spray.

A Profitable Investment For Commercial Orchards

PROSPECTS FOR EARLY TOMATOES

The prospects for early tomatoes are unusually good this year, because just as soon as the Philadelphia market price goes below what may be considered satisfactory, the canners will gladly take all they can get at a good price. The supply of canned tomatoes is practically exhausted and the canners will quickly take all they can get for immediate use.

Market Garden and Truck Crop Notes

TIMELY COMMENT

New Variety of Celery

Market gardeners and home gardeners who have had trouble with their celery thru blight and root rot will be interested to learn that there is a new variety which is practically free from these troubles. Furthermore, it is of excellent quality, a quick grower, produces an abundance of short stocky stalks, a well filled heart, and it keeps well when trenched for winter use. The variety is known as Easy Blanching and was originated by Sam Meisch, of Hudson Co., in one of New Jersey's most successful market gardens. As this variety grows, it looks very green and much of it is sold without bleaching; however, it is easily blanched but does not get so snow white as the poor-quality, sickly, Golden Self Blanching. Celery seed should be planted at once.

Planting on Wet Ground

The light soil is all planted by this time because it is the first to dry out. The heavier soil is excellent for the mid-season crops such as pumpkins, squash, late tomatoes, cabbage, late sweet corn, etc. Soil that has a tendency to become excessively wet may be handled to advantage by mounding up the hills or rows from four to eight inches high, depending upon the nature of the crop and the distance between the rows. Cultivation will be just about as easy and the soil in the raised ground will "air out" quickly so that the plants will remain healthy thru a wet spell.

Drainage under the hill may be further provided by placing a forkful of long manure under each hill or plant, but most growers would rather use the manure on the higher ground where humus is in greater demand and where the returns are more certain.

Lime For Can-House Tomatoes

I am frequently asked what effect an application of lime would have on plowed ground, where tomatoes are to be planted. I must confess that I do not know. If some of the readers of this paper would test it out this season and report their results next fall we would all have a better idea of the effect.

Before beginning the test, the grower should know whether his soil is in need of lime and, if so, how much it needs to counteract the acidity. Your county agent will test your soil and give you the report free. Furthermore, it will be necessary to use a quick-acting lime if it is to have a definite effect upon this season's crop. Apply the lime to part of the field and note any differences in the appearance of the growing crop.

I am under the impression that the liming will cause the vine growth to be more vigorous and healthy, while the picking may be delayed a day or so and the clover, vetch, rye, etc., used as cover crops will be much more vigorous and far more beneficial to the soil when plowed under the next season. However, we are most vitally interested in the direct effect of the lime upon the yield; let's get it and write about our results next winter.—DeBaun.

The COLT Will Light Your House and Barns and Cook Your Meals, Too!

And there are 30,000 people in the East who know from experience how superlatively well the Colt does both.

If you ask any of these people what their experience with the Colt has been, this is what they will tell you: First, that the Colt plant with its splendid double service costs them less than any other lighting system. Then they will tell you that there are no spluttering engines or exasperating batteries to get out of order, and that no repairs are ever necessary.

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And thirdly, they will say that beyond putting in a little more Carbide once a month and adding a little plain water, the Colt requires no attention whatsoever. Being silent and automatic in its working, they never know the plant is in the house. It is so small that it stands in the corner of the cellar or it can be put in an outhouse.

¶ Can you imagine the joy of a housewife, who is sick and tired of cleaning lamps from one year's end to another, at being able to turn on for the first time (without even requiring a match to light it), this brilliant, beautiful light?

Can you see her going into the kitchen on a sweltering hot day and lighting the gas range—the one modern, perfect cooking appliance—for just long enough to do the cooking, and then shutting it off? She will never give it up, once she has known the relief of having in her home a

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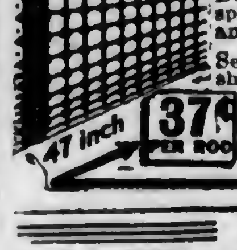

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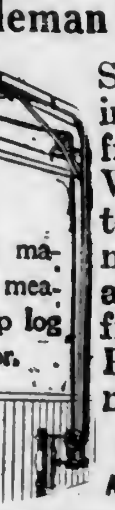

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WAR NECESSITY FOR NURSES MET BY SPECIAL SUMMER CLASS
As a war measure, Mount Sinai Hospital School of Nursing is entering a special class, June 15th, 1918. Recognizing the need for additional nurses for military and civilian purposes, the Mayor's Advisory War Committee of Cleveland, and the Western Reserve University have made this Course possible, the former, by supplying the funds, and the latter by offering its facilities for a ten weeks' course in theory. Students will live at the hosp'tal which is in close proximity to the University. No tuition will be charged for the course at the University. Living expenses will be met by the Hospital.
This plan offers unusual opportunities to qualified young women wishing to serve their country. Applications should be made at once to Miss C. A. Wheeler, Principal of Mount Sinai Hospital School of Nursing, 1800 East 105th Street, Cleveland, Ohio.

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Baby Chicks Barred Plymouth Rocks, Rhode Island Reds, White and Brown Leghorns, White Wyandottes; from the best strains obtainable, strong healthy stock. $2.50 per dozen by Parcel-Post; $10.00 per 50.
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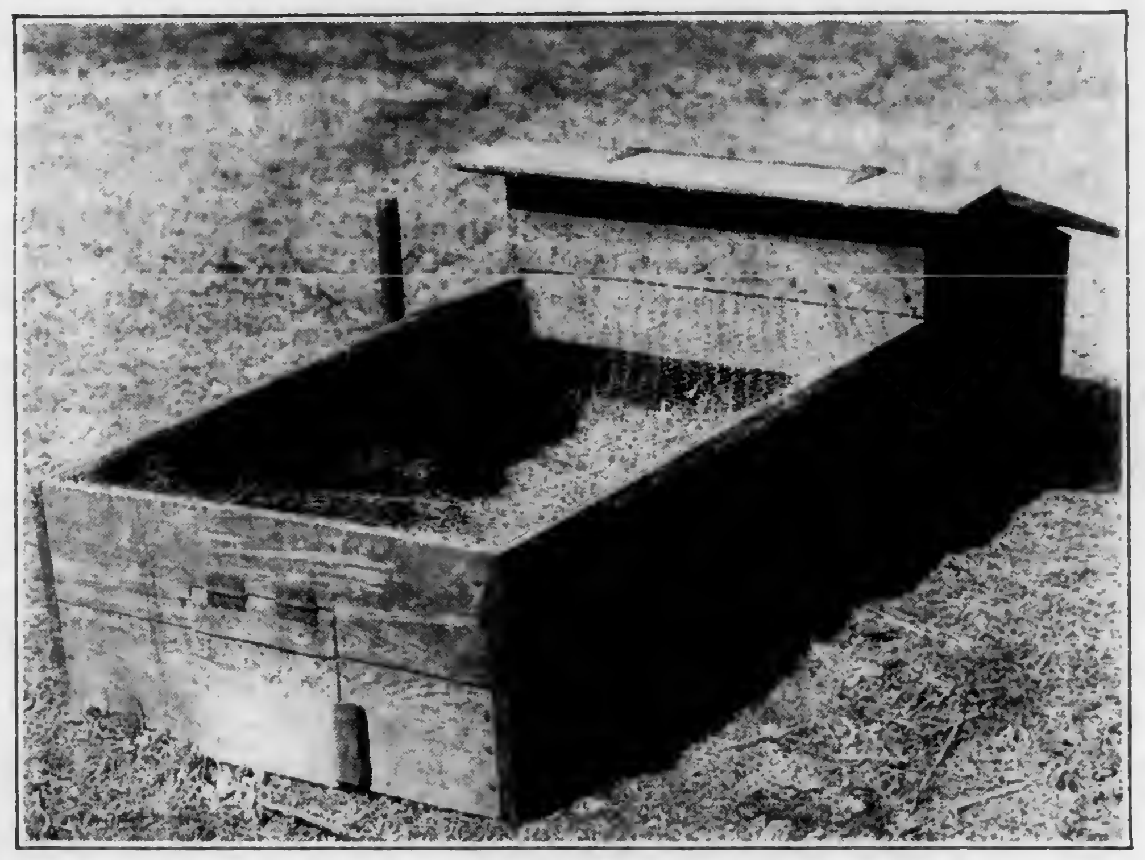
Poultry

AMONG THE BEES AT SWARMING TIME

The natural way for bees to increase is to swarm. When in May or, as in the northern states, in June the colony has grown strong with thousands of young bees hatching daily; when honey is coming in freely and the weather is warm and the bees begin to feel crowded in the hive and the queen does not find sufficient room to deposit her eggs, the swarming fever developes. Queen-cells are started in the corners of the combs near the brood, perhaps three or four or even a dozen of them, according to the swarming propensities of the bees. When these cells are sealed and the young queens are about ready to hatch, the old queen with the greater part of the worker force leaves the hive usually between ten o'clock in the morning and three in the afternoon. At the present time, however, swarms must be looked for an hour later since the clocks have been moved ahead.

For the purpose of observation it is well for the farmer who keeps only a few hives to locate them not too far away from the house so that the women-folks in the kitchen or in the garden can keep an eye on them. Don't mistake the regular play-spell of the young bees which occurs during the warmest part of the day for the act of swarming. Naturally, the stronger the hive is in young bees the greater will be the commotion in front of the hive, and the more drones there are out the more noise one hears.


Brooding Coop Where Two Hens Are Set and the Hatch Given to One

When swarming takes place the bees rush out of the hive, the queen frequently being among the last to leave the old home. In a jubilant mood the swarm whirls around in the air until a clustering place is found on some nearby tree. Some people still cling to the old custom of beating tin-pans or making a noise otherwise to induce the bees to settle. But there is no scientific proof for such a believe. The bees seem to pay no attention to such a racket.

It is their habit after the excitement to gather their forces in a cluster before departing for their future home. If the beekeeper has been so neglectful as to allow the bees to hang for any length of time after the swarm has issued, he need not be surprised to see them take wing and go away. Nothing short of a gas bomb will stop them when once they get started. Of course, a dash or two of cold water will hold the bees until everything is ready for hiving them. Spraying the bees will also dampen their antagonistic spirits when they are inclined to take improper liberties with the face or hands of their keeper.

If the swarm hangs on a long, thin branch the best way is to cut off the branch with a sharp knife, shaking the swarm as little as possible. The bees can now be laid in front of the hive so that they, together with the queen, can easily run into it. To facilitate this it is necessary to place the hive on a perfectly level spot, because when the ground is uneven or when the grass is high the queen is likely to find her way under the bottom board and the bees will refuse to enter the hive so long as the queen is somewhere on the outside. In order to prevent this the hive should be placed upon a board, a thick carpet or a seed sack. When the queen now dashes around in search for an opening, she is compelled to enter the right place.

If the bees cluster on a high limb which is not easily accessible from the ground a swarm-catcher attached to a pole eighteen or twenty feet long will do good service. The supply dealers furnish such a device made of galvanized wire with a cover. But this thing proves to be too small for an ordinary sized swarm. Unless the queen is caught with the first "drive," one is obliged to make several trips before all the bees are caught. Sometimes the queen is killed by the operation, and the bees are unnecessarily irritated.

If no new hive is in readiness, or when there is no time to attend to such things for the moment, the swarm can be returned to the parent hive. Of course, the bees will swarm again the following day unless the queen was balled and killed. When preparing a new hive, care should be taken that the foundation is securely fastened to the frames, for, tho the swarm be carefully hived with the queen, the bees will act restless and dissatisfied and will finally leave the hive if the foundation comes down. They will not stay in a house that is not a safe place in which to live.

After-swarms or second swarms should be eliminated as much as possible. This can be accomplished generally by hiving the new swarm on the old stand and by giving the parent colony a new place some distance away from the old location. In this way the field bees are all thrown into the new hive, thus increasing the worker force of the new swarm and depleting the old hive to such an extent that further swarming is discontinued. The best feature of this practice, however, is that the amount of honey the colony will produce is greatly increased. It is understood that the supers which may have been started on the old hive should also be shifted to the new hive, bees and all. Thus, there is very little interruption in the work of the colony, and any honey that is brought in can at once be stored where the beekeeper wants it.

In the present time when the necessity of production is urged on all sides even those who keep only a few hives can contribute their bit to the nation's supplies by looking more carefully after the needs of their bees and doing the right thing at the right time.—C. T. Ohlinger, Alleghany Co., N. Y.

CHEMICAL VALUE OF SPROUTED OATS

Green sprouted oats have been widely exploited in recent years as a succulent food for poultry. Indeed, there are some so-styled "poultry systems" on the market which consist of little else than the use of this food. The Maine Station has been using sprouted oats in its poultry studies for a number of years. In the earlier work the analyses of unsprouted oats were used in computing the rations, but as the amount of sprouted oats in the ration used at the Maine Station were considerably increased it became desirable to know more concerning the composition of sprouted as compared with unsprouted oats.

In the tests the analyses of the sprouted oats were made at different stages of growth and in such a way that it was possible to compare the nutritive value of the sprouted with the unsprouted oats. Two experiments were carried. In one the oats were sprouted in a regular oats sprouting closet provided with steam or hot water heating pipes, glass doors open to the south in a sunny room, and suitable trays for the thoroly moistened grain. In the other experiment the oats were sprouted in glass dishes to avoid any possible loss from drainage.

Sampling oats sprouted in the cabinet after 8 days, it was found that they contained (3000 grams having originally been soaked over night before being put in the closet) 288 grams of crude protein, 223.8 grams of albuminoid protein, 1,402 grams of carbohydrates, 131 grams of fat, 710 grams of starch and 360 grams of sugar, against 296 grams of protein, 248 grams albuminoid protein, 190 grams of carbohydrates, 150 grams of fat, 1,587 grams of starch and 52 grams of sugar in the unsprouted oats. Somewhat similar results were attained in the other experiment.

From the tests it was found that sprouted oats at the proper stage to feed will carry about 77 percent of water, 2.8 percent protein, 3 percent crude fiber, 1.3 percent fat and 16 percent nitrogen free extract. There is an actual loss of dry matter in sprouting oats and the only advantage of the process is to produce a succulent green food at times when grass or other green foods are not available.—B.

Live Stock

VARY THE FEED FOR HORSES

The amount of feed given a horse must be governed by the size and weight of the horse, and by the kind and amount of work he is to do; also by condition of the climate. More is required when it is cold. The horse has a small stomach and when at hard work it must be given frequent feeds if we would have the best success.

Adding bran to a ration of either corn or oats will greatly increase the efficiency of the ration. Bran is high in protein, and hence fills a much needed part of the ration, especially if timothy hay is fed. Mixed hay, clover hay, or soybean and alfalfa hay do not call for much bran as a supplement. Bran will keep the digestive system in good order and if a little oil meal is added there will be little trouble from the horse becoming hide-bound. Oil meal gives the hair a glossy appearance.

We have found that too much hay will not increase the efficiency of the horse. It is unnecessary for a horse to stuff itself. A liberal allowance is sufficient, and will give the horse more energy than an overfeed. Avoid dusty and moldy hay, for it will never pay to feed it. It may seem like a saving of money at the time but in the course of time it will show itself.

It will never prove profitable to allow horses to run down in flesh towards fall. It is natural for the horse to lose flesh after a long hard summer's work. It is natural for them to become low in spirits. When in such condition it is natural for them to be subject to coughs, colds distemper and the many ailments subject to the horse. Growing a heavy coat of hair also drains the vitality of the horse.

If we expect young growing colts to do their best we must treat them accordingly. Much depends upon the first year of their life. They should have grain twice a day the first winter. Given some hay twice a day and turned out in daytime will never produce the rugged workers we desire. The future of the horse rests largely upon the care given during the first twelve months.—Warner E. Farver, Ohio.

MANY SHEEP KILLED BY DOGS

Invetigation by the U. S. Department of Agriculture among sheep owners in 15 states east of the Rocky Mountains shows that out of a total of 6,836,492 sheep in the 502 counties reporting, 34,683 were killed by dogs in one year (1913) and were paid for by the counties. At the same rate of loss in other farm states the total annual destruction of sheep by dogs would be 107,760. "But these figures are based only upon the number actually paid for, and it is more than probable that the true losses far exceed this," says Farmers' Bulletin 935, "The Sheep-Killing Dog". "It is known that many sheep are killed which are never reported to the county official.

"In 1913 crop reports in 36 farm states submitted estimates which showed that the number of sheep in those states could be increased 150 percent without displacing other live stock. Such an increase would place approximately 34,000,000 more sheep in these states than there are now. Of 1,411 answers received to the question as to whether sheep raising is profitable in the farm states, 887 answered 'yes'. Of 894 answers as to the causes preventing increase in the numbers of sheep, 531 said, 'Dogs'."

CONTROLLING INFLUENZA

The following is an extract from a letter written by an experienced horseman who has had more than six months service in an Army Remount Depot. It offers some very valuable suggestions to horsemen who have to deal with influenza. The final method mentioned is reported to have been adopted in practically all the Remount Camps and is giving good results everywhere. The letter follows:

Influenza is the most troublesome knot in our whole remount business. Weather conditions have been bad; cold, then warm. Some snow all the winter but most of the time melting. A great deal of sleet and always mud, ankle to belly deep. The first trial control was a shot of vaccine at point of shipment, followed by vaccine on arrival. Stabling and open corral handling were both tried. This treatment seemed without results. Next the animals were given a large shot of vaccine when shipped and none on arrival. Results the same. Then no vaccine was given and results were about the same.

The final method and the one which seemed to be the best at least both percent of sick and percent of death rate dropped a good deal might be summed up as isolation and sanitation. Cars were disinfected before shipment and one side closed. Plenty of fresh air was admitted thru the open side but no draft straight thru. Corrals were disinfected by a special crew constantly at work with hand spray pumps. All corrals (feed racks, grain troughs, water troughs and fences) were gone over weekly and sick corrals three times each week. A veterinarian with crew of men went thru the new corrals twice a day. As stock came in it would be put in a corral for quarantine. Probably three days' arrivals could be put in each corral. They were held there for ten days. These I have termed "new" corrals. All animals showing symptoms of sickness were caught out and transferred to isolated influenza corrals. The influenza corrals each held around five hundred head. The old corrals or the stock released from the ten-day quarantine were gone over once a day and sick animals transferred.

In the influenza corralls every effort was made to reduce the mud and water. No treatment was given. Daily the animals were run thru a chute. The well ones were transferred to the old released corrals; the very bad cases sent to open corrals to be blanketed and given stimulants. The pneumonia cases were sent to stable hospital. The balance remained in the influenza corrals to be run thru the chute the next day. The system of sanitation and isolation seemed to get results. The death rate dropped from well over a hundred a week to ten or less a week as a result.—"Remount."

Every smutted grain and every diseased potato is a potent ally of the enemy. Treat all seed to prevent disease and assure production of sound crops.

A 3 1-2 ton Federal owned by J. E. Yeagle and Sons of Brookfield Farm, Bensalem, Pa., is used in carrying produce to Philadelphia, a distance of about 20 miles. Makes several trips a week. Mr. Yeagle reports the truck as paying for itself many times over.

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No Silo too high or requirements so great but what the ROSS Silo Filler will do the work with ease.
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"NICE" Enamels, Paints and Varnishes are more than just "Paint." There are special products for almost every purpose. Samples and good, honest advice are free at your dealers, or write us.
Eugene E. Nice
Philadelphia, Pa.

Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Potatoes Values Weak

The recent gains in the markets for old potatoes have been holding fairly well in producing sections altho the tone was somewhat uneven the past week. Green Mountains ranged slightly higher, reaching $1.30@1.36 per 100 lbs. in bulk, from wagons, Presque Isle, Me., with comparatively few sales, but demand improving. Main starch factories were paying 76c@$1.21 according to quality. New York round white in bulk, trackside, declined 10 cents, ending with sales mostly at $1.10@1.17 in the Rochester, N. Y., shipping district. Round whites advanced 5 cents at Grand Rapids, Mich., ranging 70@90 cents.

New potatoes continued weak with supply exceeding demand, declining 75 cents in the Hastings, Fla., shipping section, reaching $3.75 per barrel for No. 1's f. o. b. usual terms, and $2 per 100 lbs. in sacks f. o. b. cash. Estimated acreage of early potatoes shows fully one-third decrease in important sections of Virginia and Maryland.

Old Onion Values Uneven

Eastern markets were irregular, some showing advances and others declines, but the average was about the same as last week. Philadelphia, Boston and Pittsburgh reached $2@2.25 for desirable lots, but the general range was $1.25@1.75 and poorer lots were still selling at 75c@$1 or even much lower for undesirable stock. Movement of old onions chiefly from New York and Ohio show but little change over recent low figures, with 74 cars for the week.

Tomatoes Nearly Steady

The market held fairly well in the Miami, Fla., shipping section, closing at $2.50@3 6-basket carrier, and movement continued heavy but quality was quite variable. On May 1, 1917, the range in the shipping section was $2.25@2.35, and the range of jobbing sales in consuming markets was $3.00@3.75. In 1916 the corresponding jobbing range was $2@2.25 per carrier.

New Cabbage Tending Lower

Prices of new cabbage are tending somewhat lower in producing sections, with the range of $1.40@2 per 100 lb. crate, growers; for South Carolina pointed stock, with demand and movement active white Florida flat type ranged $1.20@1.40 per 100 lbs. crate, f. o. b. Leesburg, usual terms. Demand was slow at Florida shipping points. The small remaining stock of old cabbage is nearly all in poor condition, and sold at a wide range according to quality and market, from $20@35 per ton while a little choice retrimmed stock brought $40@50 per ton.

Strawberries in Good Demand

Prices in the Louisiana shipping sections ranged $3@3.95 per 24-pint crate to growers, and $5.50@7.50 per 24-quart crate. Supply was light, demand and prices were near the top at the close of the seven-day period. Highest prices were for Ponchatoula stock at auction sales. At South Carolina shipping points, shipments are decreasing but demand is active. Good stock brought growers $5@6.50 per 32-quart crate, and $3@5 for inferior lots. Good offerings were selling mostly at top prices.

Other Fruits and Vegetables

The apple movement continues to decrease, with total of 266 cars. New York shipped 94, Washington 50, Virginia 27, Missouri 19, Illinois 12. Considerable shipments have arrived from the western Ben Davis producing section the past two weeks. For the corresponding time last year the total volume was about the same but movement was nearly all from New York and the northwest.

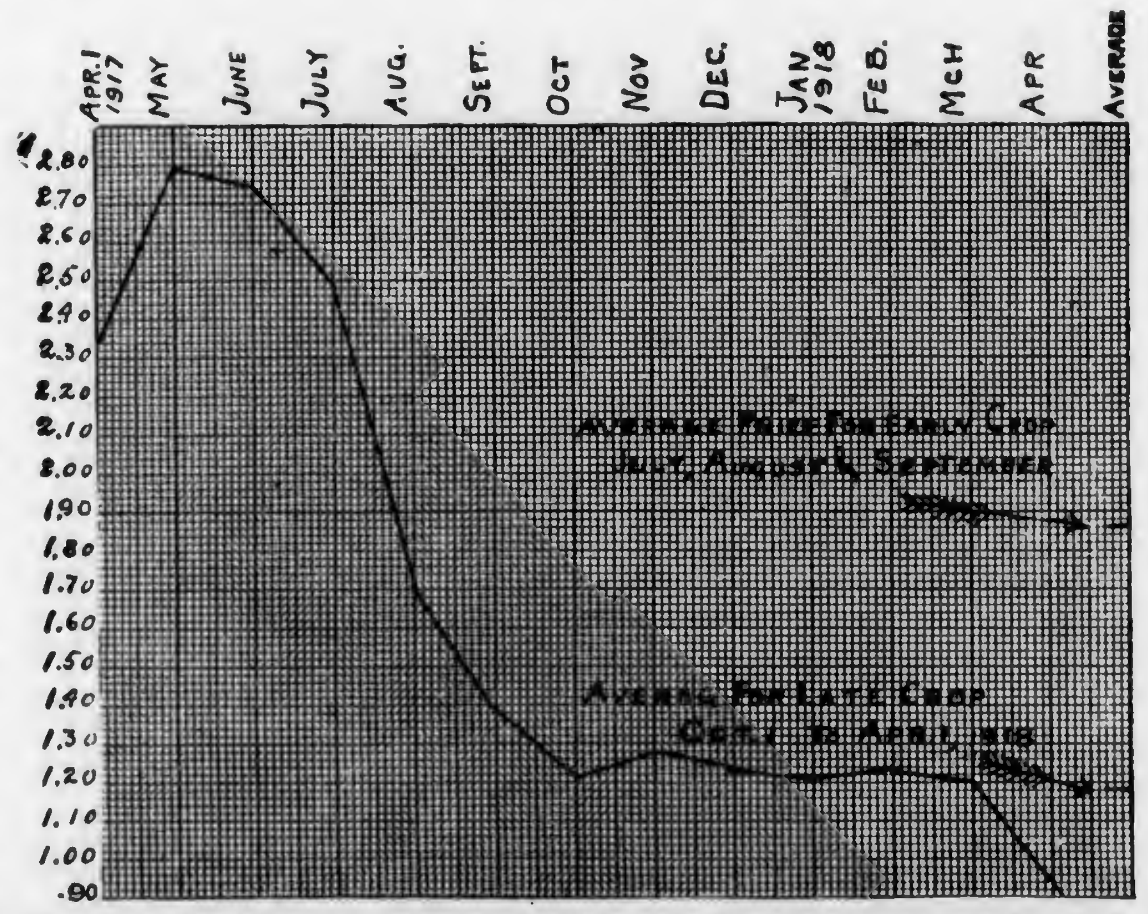
Asparagus declined in most markets, with arrival of New Jersey stock. South Carolina extra fancy grades ranging $3.50@4.25, and California extra fancy ranging $4@5.50. Movement was 55 cars, nearly one-half from New Jersey.

TEXAS BERMUDA ONION CROP

The acreage of the Bermuda onion crop for Texas for 1918 is estimated on April 1, 1918, to be 18,070 acres, as compared with 12,050 acres in 1917. A forecast based on the condition of the crop on April 15 indicates a maximum production of 6,891 cars of 530 bushels each, as compared with a maximum production of 7,708 cars forecast on April 1, and with a total shipment of 5,812 cars in 1917 as reported by railroads to the Bureau of Markets.

AVERAGE FARM PRICE OF POTATOES

The accompanying chart shows the range of farm price of potatoes during the past year. It will be noticed that the price of the 1917 crop on July 1 was $2.38. The average price for the next three months was $1.86. This would about cover the season of the early crop in our territory. The average received for the late crop, or those sold between September 1 and April 1, 1918, is shown to be $1.18. During the month of April ast year, or the month in which seed was in greatest demand, the price arose from $2.33 per bushel to $2.79.



Farm Price of Potatoes, Apr. 1, 1917 to Apr. 1, 1918.—Average for U. S.

THE EARLY POTATO SITUATION ON ATLANTIC COAST

Owing to unfavorable weather conditions in the North and resultant delays in transportation, seed potatoes have been unusually slow in arriving. This has undoubtedly reduced the planting to a considerable extent from Florida to Maryland, and has also prolonged the season of planting. This in turn will prolong the harvesting season for each section, causing them to merge together somewhat without the usual change from section to section.

A preliminary estimate of the acreage of early potatoes along the Atlantic Coast indicates a reduction of 37,150 acres, or about 35 percent as compared with last year. The acreage in Louisiana is increased by 16,300 acres, or 72 percent over last year.

LOW SUPPLY OF WHEAT

The following figures give the visible supply of wheat on hands in the United States on April 20 for the last four years:

1918	3,199,000 bushels
1917	30,257,000 bushels
1916	50,889,000 bushels
1915	30,153,000 bushels

BRITISH CROP WEATHER

It is said that British farmers have never known a March more favorable for their work. Spring sowing which had scarcely begun in March last year was by the 25th almost finished on many farms in the south of England. All grain and stock are thriving. The farm tractor undoubtedly had a good deal to do with this advance of sowing.

The Food Department stated that a compulsory report dated February 1 from occupiers of land in England and Wales shows that the area under winter wheat was 2,504,000 acres as compared with 1,725,000 acres at the corresponding time the previous year, being an increase of 45 percent in seeding in 1917 over the previous year, or 56 percent greater than the average of 10 years before the war.

PLOT TO DISCREDIT FARM LOANS

Charges that a group of Kansas mortgage bankers instituted a nation-wide campaign to discredit the Federal farm loan system were made this week by the Farm Loan Board. Criticism has been directed at the farm loan plan from several sections of the country recently, and this, also, is charged to private interests "which have been forced to lower their rates by Federal farm loans." The fight has been carried to Congress by means of distribution of circulars, mailed broadcast, containing alleged misrepresentations.

Representing that all loans have been made on over assessment, the literature sent out actually shows 18 cases where the loan exceeded the tax assessment value in a total of more than 2,000 loans. The figures were gathered entirely in the Wichita district, but the circulars state particulars affecting loans in other districts may be had on request.

In making public details of the new attack on the Federal loan system, members of the board state they were seeking only to warn owners against accepting "incorrect and baseless information which is being distributed by financial interests opposed to the farm loan law."

The Farm Loan Board has received scores of letters from bankers and financiers asking for details and "authoritative data" as to the methods employed in loaning money in Kansas. So far as could be ascertained, the group leading the fight has sown its literature among Eastern capitalists and investment bankers.

FARM SURVEY SHOWS SERIOUS LABOR SHORTAGE

A farm survey of New Jersey was recently made by the school children of New Jersey under the joint auspices of the United States Department of Agriculture, the State Department of Public Instruction and the State Agricultural College. Records were obtained from over 11,000 farms, or approximately one-third of the total number of farms in the state.

One of the most striking conditions shown by the survey was the extreme shortage of farm labor. Of the number reporting, 21 percent of the farms required additional labor for the entire year, also 23 percent for the entire summer, and 38 percent for a shorter period, presumably for harvest. Approximately 84 percent of the farmers needed additional labor some time during the year. On the basis of the figures obtained, it is estimated that there is a shortage of 6,000 to 8,000 men for the growing season, in addition to extra needs at harvest time.

This shortage threatens to reduce production seriously, unless adequate measures are taken to meet it.

The Department's figures comparing the condition of Southern truck crops with those of last year show a decidedly better prospect than that existing in April, 1917.

Grange

FARMERS AND POLITICS

It is with great interest that I note your editorial in the April 20th issue of the "Pennsylvania Farmer," which discusses the absurd pamphlet sent out by Past Master Bachelder.

I have become personally acquainted with the leaders of the Non-Partisan League movement in North Dakota and I can say most emphatically that I have never known men who were more honestly and sincerely endeavoring thru legitimate organization to rectify radical wrongs. Theirs is an important and wonderful work. The success attendant upon their efforts is best shown by the scurrilous and baseless attacks being made by the press in certain sections and by paid agents in a hurried attempt to stem the onrushing tide of the movement started by these men.

It is evident that basically, the man who must support himself and family by a daily wage is the one most vitally concerned and interested in the welfare of the farmer and of agriculture. It is the daily laborer who should consider most what he is paying for food products and why. Conversely, since the laborer is the greatest consumer of farm production, the farmer should be vitally concerned in the welfare and action of his best customer. Is it not, therefore, the logical thing for the agricultural population and the laboring people to get together, to discuss the things that concern both, and particularly to learn how produce is distributed from farm to consumer and why the cost should be, as at present, so exorbitant? It is primary salesmanship to get acquainted with your customer and discuss ways and means whereby your production may be put into his hands at a reduction in cost to him and at the same time at increased profit to yourself.

This thought leads to organization for political action. The grange in the early days did its most effective work when, ignoring the principles of its founder, it launched into a definite political policy and made the political gangsters of several Western states tremble for a few years. Why shouldn't the farmer for purely business reasons be represented politically? This the Non-Partisan League is trying to do and is actually doing in North Dakota. Our congressmen and senators in Washington do not adequately represent the food producing interests; they most certainly represent the very class on which agriculture leans; the interests that control distribution. Business has good reason to enter and support politics and results have more than justified the logic. Farmers have suffered too long from gross legislative abuses to ignore this fact and today, of all days, is the time to do intelligent thinking and accomplish intelligent things. The movement in North Dakota is but the start; were the granges of this country purged of its Bachelders and others too numerous to mention, Eastern agriculture might be much further along in its fight for proper representation both in the state and national councils.—Edith Ellicott Smith.

HARFORD COUNTY POMONA GRANGE

About 400 persons attended the Pomona meeting at Upper Cross Roads, Harford County, Md., April 27th. The morning meeting was devoted to business, and reports were heard from the different committees, including the one on milk, which reported a shortage of milk, with no change in the price from that which was received last winter.

The committee on resolutions recommended among others that, owing to the shortage of farm labor, the Government should close non-essential industries, and have this labor available for farm work. After some discussion, in which it was pointed out that Harford County suffered more from the shortage of farm labor than almost any other county, the resolution was adopted.

State Master Black then spoke on the good of the order, in which he urged a closer co-operation, not only in buying but in all grange work.

Prof. Bomberger, of the Maryland State College, talked on "Our Part in the War." He pointed out very forcibly the importance of every one doing their utmost to help win this war, and to help our Government carry out its war program. Dr. W. C. Stone, of the State Board of Health, spoke on the "Prevention of Typhoid Fever," and told in a very entertaining way of what had been done in the army, by using the typhoid vacine, and urged every one to take this treatment as a precaution against this disease. He also urged the buying of Liberty Bonds, as a way to help win this war.

Each of the seven granges represented was called on to give a report of the sale of Liberty Bonds taken by their members, Highland Grange leading with over $17,500, and a total of all the granges of nearly $50,000.

The next meeting will be held at Churchville, July 27.—D. G. Harry.

NEW YORK GRANGE INCORPORATES

Articles of incorporation for the New York grange were filed in Syracuse this week. The corporation capitalized for $100,000 and beginning business with $1,000 is formed principally to supply the farming needs of the members of the Patrons of Husbandry of New York state.

The principal office of the corporation will be in Syracuse, with branch offices in other sections of the state. The subscribers to the certificate of incorporation, who are also directors, with the amount of stock subscribed by each, are: S. J. Lowell, Fredonia, 10 shares; W. N. Giles, Skeneatles, 10 shares; W. L. Bean, McGraw, 10 shares; Ira Sharp, Lowville, 10 shares; B. C. Williams, Batavia, 10 shares; E. Knickerbocker, Bangall, 10 shares; E. C. Gillet, Pen Yan, 1 share; J. W. Scott, Copake, 10 shares; H. H. Wing, Ithaca, 10 shares.

This action was decided upon at the annual state grange meeting last winter, when the old buying agency was discontinued. A broader agency was deemed advisable, one which should not only purchase needed supplies for farmers in bulk lots, but should undertake to market produce for farmers as needs arose. The work of the new corporation will be watched with wide interest.—F.

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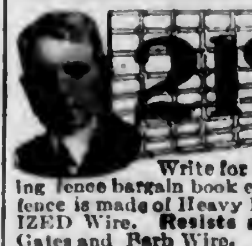

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Household

THE BOTTLES AND THE MILK

Baby's bottle should be of a type that can be easily cleaned. This means that it should have a wide mouth so that a bottle-brush can reach any place on the inside. An 8 ounce size is a convenient one to buy tho both larger and smaller ones can be purchased. Those with a graduated scale in ounces on the side, as illustrated herewith, are desirable for measuring the amount of food the baby takes.

Nipples, or "breasts" as they are now often called, should be short and so shaped that they will slip directly over the mouth of the bottle. There must never be any length of rubber tubing, for it is impossible to keep clean. The kind of "breast" that shoulders abruptly into the nipple, as in the one on the bottle shown herewith, is best because thus baby cannot suck half the breast into its mouth, as it can where the slope is gradual. A good breast should turn wrong side out easily for cleaning, and should have an opening just large enough to let the milk run out drop by drop when the bottle is inverted. If it runs in a stream the baby will take its food too fast and is likely to choke. Those made of black or red rubber are usually of better quality than those made of white.

New nipples should be scrubbed very thoroly inside and out and then boiled for fully five minutes before they are used. It is wise to temper new bottles by putting them in a pan of cold water, bringing them slowly to the boiling point and boiling them for 20 minutes, then allowing them to stay in the water till cold. Bottles so treated will be less likely to break.

All baby's feedings for one day should be prepared at one time. This means that there must be as many bottles as feedings, seven for the child under three months, six up to the sixth month, and five for the remainder of the first year. Every bottle should have its own nipple.

As soon as the baby's meal is finished the bottle should be taken away. It should be rinsed at once in cold water, then placed in a solution of soda-water (one teaspoon of soda to one quart of water) till ready to wash and boil. Bottles should be washed in hot soap suds and well scrubbed with a bottle brush, then boiled for 20 minutes. The boiling sterilizes them. All the bottles for the day may be washed and sterilized at the same time. They are preferably filled directly after sterilizing. If they must stand, the mouth of the bottles should be filled with sterile cotton, and they should be turned upside down in a clean place. A bottle-rack is convenient for holding them.

The breasts should also, directly after using, be washed and scrubbed inside and out to remove any milk particles. Hot soda-water is good to cleanse breasts as well as bottles. They should be placed in a salt or boric acid solution (one teaspoon dissolved in one pint of boiling water) till ready to use. All traces of this solution should be washed off in plain hot water before putting the breasts on the bottles.

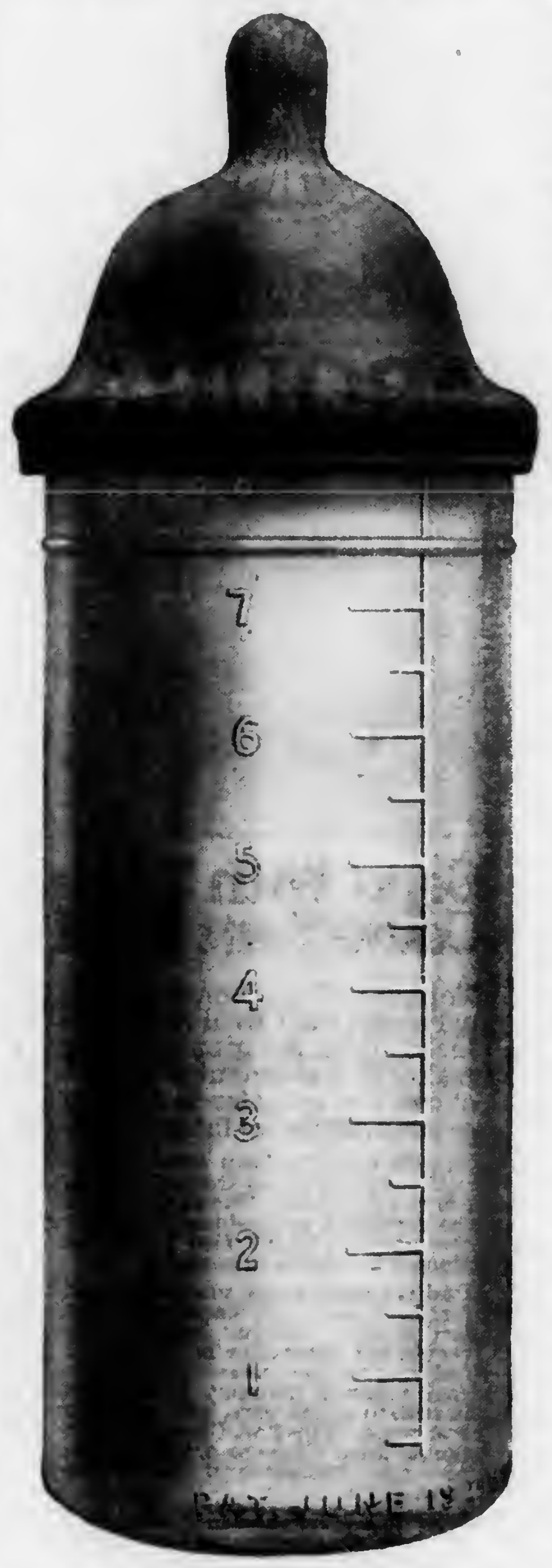
While these precautions at first glance may seem over-elaborate, they are well worth following, for it is attention to such details as these that do much to maintain the baby's health. Nearly all the ills of babyhood can be traced to improper eating and lack of care about the cleanliness of the bottles. Knowing this, no mother can afford to regard such precautions as trivial; rather, she will give them her closest attention, as she realizes that it is such little things as these that will insure her a healthy and happy baby.—Martha S. Pittman, Pennsylvania State College.

Method of Pasteurization

A simple method of pasteurizing milk with utensils to be found in any farm kitchen is as follows:

A small, round tin cake pan or similar utensil may be inverted in the bottom of an aluminum or porcelain kettle. The kettle is then filled with water and the bottles containing the milk placed upon the inverted pan, which serves to keep them away from the direct heat of the flame striking the bottom of the kettle. A special wire bottle rack is more convenient, however, and does not cost much.

After the water is heated to 140 degrees or 145 degrees, the bottles of milk are allowed to remain in it for thirty minutes. The kettle is then placed under a spigot of runing water and cooled to a temperature of fifty degrees or less. Care should be exercised to see that bottles are not broken by allowing the cold water to run directly upon them.



Approved Bottle and Breast For Feeding Baby

In pasteurizing milk for infants enough milk should be placed in the bottle for one feeding and only enough for one day's feeding should be pasteurized at one time.

Before the milk is placed in the bottles they should be thoroly washed and scalded. A cotton stopper for each bottle is best.—Penna. State College.

Cool and keep the bottles in ice box or cold place until needed. When a bottle is wanted for feeding, reheat it by placing it in a pitcher of hot water. Warm it only to a body temperature, not hot. Test it by dropping some of the milk on the inner side of the elbow or wrist. When it feels just warm, it is the right temperature.

Cow's milk used as infant food usually needs some dilution and modification. Have the doctor give you the formula necessary for your baby's age and weight, for it is not safe to use any one formula or modification for every baby. However, it often happens that the mother on the farm can not always have the advice and service of a doctor skilled in infant feeding. In such cases the mother may be helped by this list of instructions sent out by the Children's Hygienic Division, Department of Health of New York City.

A GOOD SPRING DISH
Sliced Hard-Boiled Eggs on Cottage Cheese

Age, 3 days to 2 weeks—Milk, 1 tablespoon, barley water, 3 tablespoons. Feed the baby 2 tablespoons at first and increase until the full amount, 2 ounces, is given at the end of two weeks. Feed every 2 hours.

Age 2 weeks to 3 months—Milk, 1 ounce; barley water, 2 ounces. Feed the baby this amount every 2 to 3 hours. Give only 7 to 8 feedings in 24 hours.

Age 3 to 6 months—Milk, 3 ounces; barley water, 3 ounces. Feed baby this amount every 3 hours. Give only 6 feedings in 24 hours.

Age 6 to 9 months—Milk, 6 ounces; barley water, 3 ounces. Feed baby this amount every four hours. Give only 5 feedings in 24 hours, last one at 10 P. M.

Age 9 to 12 months—Milk, 8 ounces; barley water, 2 ounces. Feed baby this amount every 4 hours. Give only 5 feedings in 24 hours, last one at 10 P. M.

Care should be taken to see that the holes in the rubber nipples are not too large. The milk, when the bottle is held upside down, should drip, not run, from the nipple. The bottle should be held while the young baby is feeding.

Barley water used in the above milk modification recommended is made as follows: Boil 4 heaping tablespoons of pearl barley and 1½ pints of cold water in covered kettle until the quantity is reduced to ¾ pint. Crush the barley, strain thru cheesecloth into a covered bottle or bowl, and set in a cool place. Make it fresh every day.

If the baby sleeps well, gains in weight, seems happy and does not vomit there is every reason to believe that the food is agreeing with it. Any change should be noted and if it does not improve immediately, the doctor's attention is required. This is especially true in warm weather. Remember also that baby as well as the grown-up needs some fresh water every day.—Mrs. Manthel Howe.

FLUFFED POTATOES

Cut up, boil and mash the firmest potatoes. When beaten light and well seasoned with butter, pepper and salt, fold in the stiffly beaten whites of two eggs and place in the oven to brown lightly.—E. P. L.

PENNSYLVANIA FARMER PATTERNS

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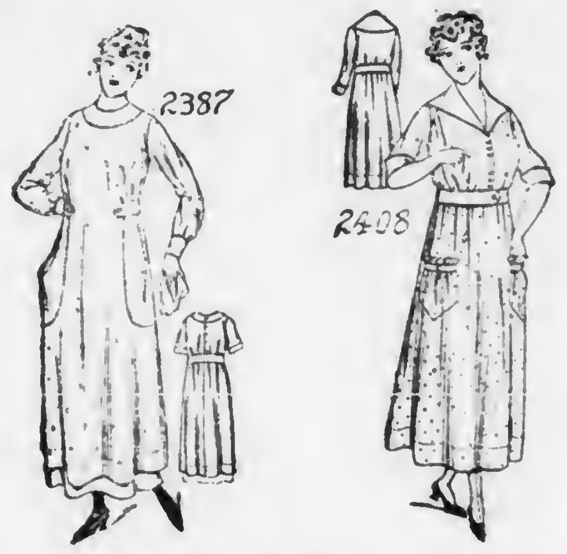
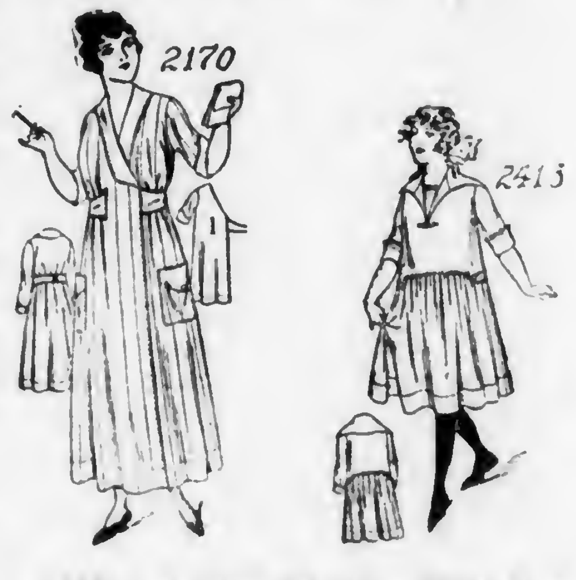
Housework Uniforms

2387.—Practical Idea. — It has ample pockets and the fulness is held over sides and back by a belt. The sleeve may be finished in wrist or elbow length. Pattern is in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 6½ yards of 36-inch material. Price, 10 cents.



2408.—Neat Enough.—You will want this pretty model. You may have the sleeve in wrist or elbow length and finish the dress with or without the pockets. Pattern is in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require 5¾ yards of 44-inch material. The skirt measures about 2½ yards at the foot. Price, 10 cents.

2170.—An Ideal House Dress.—This model is made with reversible closing, and its fulness is held by a belt that fastens at the centre back. The sleeve may be in wrist or elbow length. Deep, ample pockets trim the fronts. Pattern is in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. It requires for a 38-inch size, 6⅞ yards of 36-inch material. The dress measures about 3 yards at the foot. Price, 10 cents.



2413.—A New Model.—This is a good model for wash fabrics. The dress is made to slip over the head. It has a two-piece, gathered skirt joined to the waist. The sleeve may be finished in wrist or elbow length. Pattern is in 4 sizes: 8, 10, 12 and 14 years. Size 10 will require 3⅜ yards of 44-inch material. Price, 10 cents.

The Voice of the People

We propose to reserve this department for the use of our readers to discuss all problems and matters of general interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. It will be necessary to limit such articles to 200 or 300 words. Publication of an article in this department does not signify editorial endorsement.

WHAT SHALL THE HARVEST BE?

Food and fuel, men and munitions! From all sides comes the call to close ranks, press forward, speed up, redouble your efforts. Men must fight, women must save, food must be forthcoming in greater amounts. But who is to produce it? Strange that with all the clamor, all the cry, all the need, so little attention should be given to the answer to this question. Advice is abundant from all quarters. Every man and many women who know nothing of farming are ready to tell the farmer what to do. He must work harder; he must go to the city and gather up the loafers who are useless there or as fighters. The women must help in the work of the field; why should they remain idle? High school boys should be taken to the farms; boys from the city should be put into summer camps and drafted for farm service. The government should import coolies from the Orient under contract and return them when the war is over. And so on and on, ad infinitum. It is all so easy; there are so many ways by which the problem may be solved. Little wonder that the administration should think it unnecessary to consult the farmers themselves or those who know and understand farm problems. If this advice should not be sufficient there are still plenty of political officials standing as representatives of agriculture who come little nearer knowing the actual farm conditions. When it comes to managing the railroads, it needs a man who knows something of railroading, and so in other lines. But farming is so different; other people know so much more about that than do those who are engaged in it.

The farmer has such petty notions about the conduct of his own business. Why should he care about the type of man whom he takes into his home to be brought into daily association with his wife, his children, and himself? What does it matter whether he is dishonest, foulmouthed, a drunkard, a victim of nameless diseases, a criminal? Why should the farmer care whether the school boy who is ready for a lark in the country ever harnessed a horse, milked a cow or turned a furrow; whether he can earn half what he expects to receive or whether as a result of his inexperience he may at almost any moment bring about more injury to an animal, a machine or a crop than he can repair in a season's work? What matters it that the Oriental who might be imported to do this work knows nothing of American machines and methods? Why should the farmer hesitate to hire anybody he can get and pay whatever is demanded while the Government goes on fixing prices for him, even tho those prices do fall below the mark which the cost of production and the laws of supply and demand would place upon them? Why should the farmer ask for profit in his work anyway? It costs him nothing to live. He gets everything from the farm while other people must pay dearly for these same things! He ought to be willing to work at a loss.

And so the advice goes merrily on. It is heeded by the authorities and the farmer's problems are solved with little effort on his part. His sons are called to the camps and the trenches. What matters it that many of them have spent years in educational training to fit themselves for this particular work, which has been coupled with the practical farm training and which the farm boy gets as he grows to manhood? He may be managing for himself, or in partnership with the father, but no matter. He must go. If the father is fortunate and forehanded he may leave the farm and retire. If not, he must struggle along, working far beyond his strength, trying to hold things together, while the output from the farm will fall far below its normal production. Why not draft some West Point graduates for common farm work? They, too, have had special training for a given field. It would be so much more businesslike to throw aside that training and put them at some common task, even tho that task be an important one.

Farm labor, to be of value, must be skilled labor, a different kind of skill from that of the mechanic or artisan, but none the less skill. And this skill cannot be acquired in a day. If proof of this statement is needed the numberless wrecked ventures of city men trained in other lines of business who go out to farm are sufficient evidence.

Last spring many a farmer planted potatoes worth $3 a bushel. He bought fertilizer for them at greatly advanced prices and if he hired labor at all he paid equally high prices. When he came to market those potatoes, provided he was able to get help enough to get them out of the ground before freezing weather (as many farmers were not) he found the hand of authority resting on the price and saying thus far and no farther. He probably sold with little or no profit if not at a loss. He realizes full well that many of his products are bringing prices which seem unreasonable to the man who must buy and which are hard for him to pay. Yet when he counts the cost of these things he finds that there is small profit left for him.

Coal mines, munition factories, steel plants, industries of all kinds are bidding for labor and paying prices which the farmer knows full well he cannot pay and have anything left for himself. Can it be wondered at that under these conditions his patriotism fails him, that he lets things go at home if he is in a position to do so and enters the mine or the factory to accept a wage which he cannot make for himself in his own business? This is just what is happening in many localities as one may soon learn in traveling about.

Meanwhile no amount of preaching or pleading, of saving or of Hooverizing, will begin to equal in any given community the loss in production resulting from calling to the ranks the men who are real farmers, who have been trained to that work and who have been earnestly and honestly striving to add to the world's food supply and render loyal service to the nation. Why will not the administration hear and heed?—Fred W. Card, Bradford Co., Pa.

SUSPEND FOOLISH FISH LAWS

Every paper I pick up has a lot of stuff about saving food. This is entirely right but I do think some things are terribly twisted up. We are told to eat fish and save meat. Where will we get the fish? Fresh shad is selling here right now at 35 cents a pound. As farmers, we cannot afford that as a luxury. Now we have lots of suckers, mullets, carp and eels in the Juniata River and dare not catch them in any way except with hook and line. Who has time to sit over at the river and try to catch a mess of fish for a large family?

This law is unjust as the streams are polluted with all kinds of stuff at times and lots of the fish killed. The injury is not so great of late, but had been a year ago. Now why not lift the ban on fishing and leave it off until after the war? They have done this in several states, I understand. Why not let the people have some of the fish instead of letting them all be killed? The Susquehanna River is about clean of fish because of the pollution of the stream at the upper end. This is worth thinking about at least.—Norman Shallenberger, Juniata Co., Pa.

Note.—There is much truth in this contention, but pressure should be put on saving the fish by stopping pollution of the streams rather than on raising reasonable restriction on fishing. Protect the fish and there will eventually be a fair supply for all. Raise the restrictions and the supply will be exhausted rapidly and wastefully. It has been suggested that the ban be raised on hunting and catching all wild game. The reply is the statement of food and game authorities that if we killed off all of the game of the country it would not make three square meals for each of the inhabitants of the country. The fish should be protected, but manufacturing plants as well as individuals should be made to obey the law.—The Editors.

LADIES HELP IN LABOR PROBLEM

Last fall when Mr. C. Drake's most promising young orchard of winter apples in Caroline Co., Md., was well laden with beautiful, luscious fruit, the question arose as to how he should save this crop. His fruit had become famous in his own county, and even the attention of city wholesale dealers had been drawn towards his orchard.

After picking of the earliest winter varieties was well on, word reached the ears of the ladies of the town of Ridgely, six miles away, that the crop was ready to harvest, and no help in sight. These ladies, who are interested in the "Red Cross" work as well as in food conservation, at once organized a brigade headed by one of their members and assisted by some of the pastors of the town. They offered their services to Mr. Drake in the saving of the crop.

Not only was Mr. Drake well pleased by the splendid assistance rendered by these good people but the "Red Cross" fund was swelled and the whole community benefited. —M. F. King, Caroline Co., Md.

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Gas Warfare

Some Interesting Facts in Modern Warfare

By Prof. Wm. G. OWENS

There will soon be letters coming to America telling of gas warfare. Some interesting points were given by S. J. M. Auld, of the British Military Mission, before the Washington Academy of Science last January which are of interest to all of us.

The use of gas has increased during the last two years and is used now more than ever before. A week before the first gas attack was made by the Germans, a deserter came into the Ypres salient and told the British that the Germans were preparing to poison them with gas and that they had gas cylinders placed in the trenches. No one believed him. The Germans had signed the treaty at the Hague not to use gas and no preparation for protection was made.

The April day, 1915, when the Germans turned the gas loose, the British were entirely unprotected and surprised. When they could not breathe the air, some fled to the rear. The accounts are meagre, for those who could tell most never came back. The Germans claim that 6,000 were killed and as many taken prisoners. The Germans evidently did not expect their plan to work so well for they were not ready to follow up their advantage and while they were waiting, the English chemists secured a supply of the same gas and when the wind changed direction, several days later, they sent it upon the Germans who were unprepared to receive and almost as many of the Germans were killed and taken prisoners as in the first attack.

Immediately both sides began to devise ways to protect themselves against gas. At first the English used cotton soaked with sodium carbonate and theosulphate, or sometimes soaked only with water. New kinds of protectors appeared almost weekly. Cotton waste was sometimes used and when the word "gas" was spoken, six or eight men would dive for the box and stuff waste into their mouths and, putting a pad over the nose, fill the empty spaces with waste. But these methods became unpopular when it was discovered that the men did not always get the same pieces of cotton.

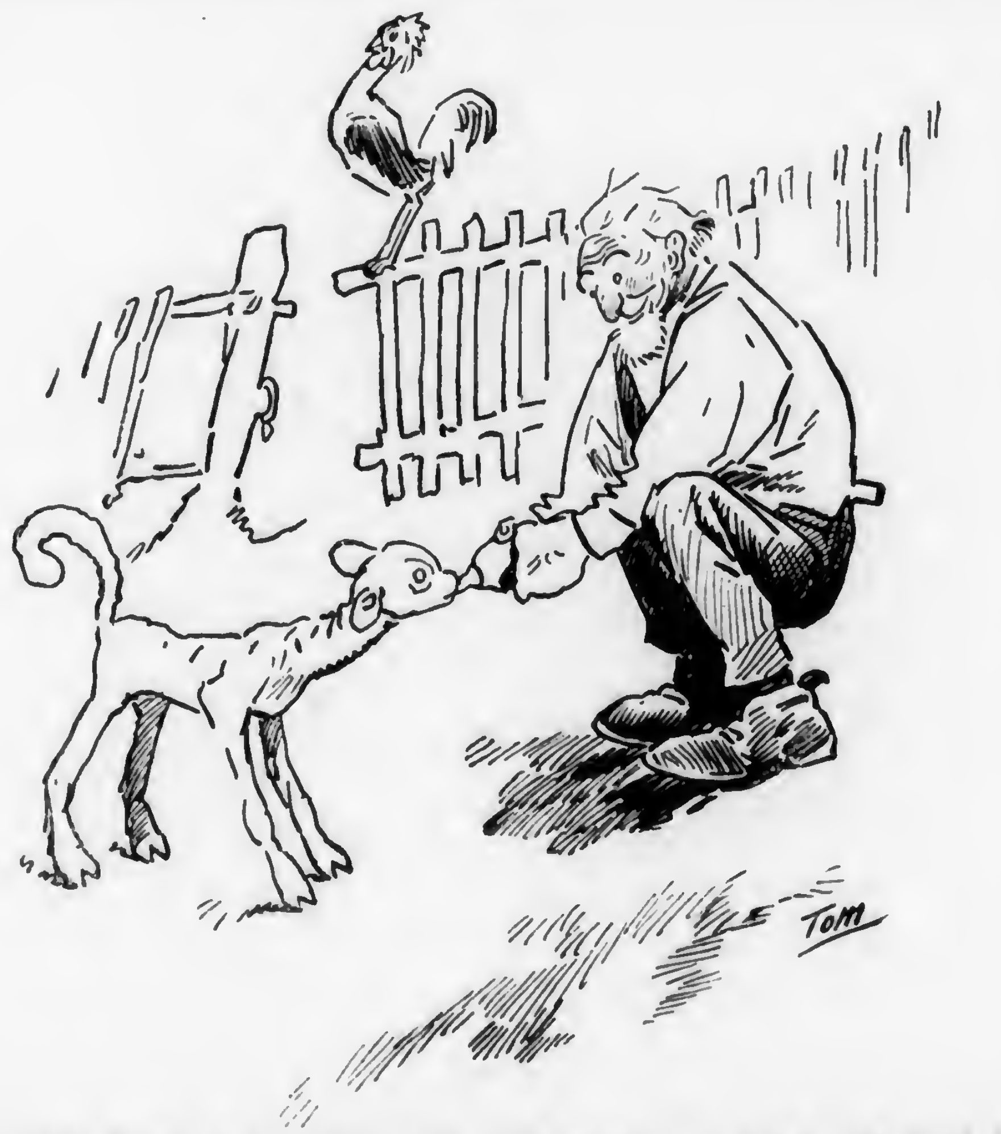
Then came the helmet with mica windows. Today the English and Americans use masks with a hose attached, and they breathe thru the mouth only. A pair of nippers, like a spring clothes pin, closes the nose and all the air must come thru a series of solutions carried in a box strapped to the chest. Every British and American soldier must carry his respirator when he is within 12 miles of the front. If between 12 and 5 miles, he can carry it on his back and take it off when he sleeps, but within five miles he must have it strapped on in front all the time, in the "alert" position. He must drill until he can put his mask on and adjust it in six seconds.

The first gas put over was chlorine. It is a gas more than twice as heavy as air. The gas attack can only be made when the wind is blowing toward the enemy at a rate of from four to ten miles an hour. If it moves slower it is dissipated before it gets over, and if more than ten miles there are too many currents and it is too much diluted. The Germans have tried a great many gases. At least twenty different kinds have been put over. One of the most deadly was phosgene, but the British learned that lectures were being given to the German soldiers on the properties of phosgene, and when it came over they were prepared for it. Some gases are the same as those we have in onions, and these cause tears to flow so abundantly that the soldier cannot see. Others produce sneezing, while others induce vomiting; still others burn the skin, irritating it so that it is almost impossible to resist stopping to scratch the body.

Both sides are using the same method in putting gas over. One is to place tanks of the gas in the front trenches, about three to every two yards. Sometimes there is a double bank. A pipe from each points toward the enemy. These tanks are operated by specially trained troops. A sand bag is placed over the pipe leading from each tank to keep it pointed in the right direction. At the proper moment the tanks are all opened. The gas rushing out can easily be heard. They tried mufflers but that stopped the flow of gas.

The other method of putting it over is by shells. These shells explode when they strike and liberate the gas. They are thrown where they will do most harm, often by making men put on their masks and thus, especially at night, interfere with bringing up supplies. There are some advantages in using shells. This method is not dependent on the wind. The shells are dropped in the midst of a crowd or a battery and the gas spreads all around if no wind is blowing. Then they can be handled by the gunners like other shells, while a "cloud" must be specially prepared. The gas can be used where high explosives fail. Heavy gas on a calm day will sink into trenches where shells cannot reach.

Last July, before the battle of Ypres, the Germans sent over 50,000 gas shells in one night. It is estimated that Germans make 40,000,000 respirators a year. Each side is constantly trying to find a colorless, odorless, invisible, highly-poisonous gas for which the enemy is not prepared.



Uncle Amos says: "Pull, you little rascal! I thank the Lord for a life time of caring for you and your like. Tendin' the weak and helpless is about the best thing I know of to keep the heart young and life's purposes clear. Its half the fun of farming."

THE NIGHTMAN'S STORY

By Frank H. Spearman

(Concluded from last week)

There were no rules for Bullhead to consult. No way of getting into the office in time to do anything; to drag himself to the lunch room, twice further than the station, was out of the question. But there was a way to reach his key in spite of all bad things, and Bullhead knew the way. He struggled fast around to the window. Raising himself with a frightful twinge on one knee, he beat at the glass with his fist. Clutching the sash, he drew himself up with a hand, and with the other tore away the muntin, stuck his head and shoulders through the opening, got his hand on the key, and called the first station east, Blaisdell, with the 19. Life and death that call meant; the 19, the despatcher's call—hanging over the key, stammering the 19 over the wire, and baptizing the call in his own blood—that is the way Bullhead learned to be a railroad man.

For Blaisdell got him and his warning, and had Number One on the siding just as the freight tore around the west curve, headed for Sackley. While it was all going on, Bullhead lay on the wind-swept platform at Goose River with a hole in his head that would have killed anybody on the West End, or, for that matter, on earth except James Gillespie Blaine Lyons.

After Number Thirty had passed so impudently, Number One felt her way rather cautiously to Goose River, because the despatchers couldn't get the blamed station. They decided, of course, that Bullhead was asleep, and fixed everything at the Wickiup to send a new man up there on Three in the morning and fire him for good.

But about one o'clock Number One rolled, bad-tempered, into Goose River Junction, and Bat Mullen, stopping his train, strode angrily to the station. It was dark as a pocket inside. Bat smashed in the door with his heel, and the train men swarmed in and began looking with their lanterns for the nightman. The stove was red-hot, but he was not asleep in the arm-chair, nor napping under the counter on the supplies. They turned to his table and discovered the broken window, and thought of a hold-up. They saw where the nightman had spilled something that looked like ink over the table, over the order book, over the clip, and there was a hand print that looked inky on an open letter addressed to the superintendent—and a little pool of something like ink under the key.

Somebody said suicide; but Bat Mullen suddenly stuck his lamp out of the broken window, put his head through after it, and cried out. Setting his lantern down on the platform, he crawled thru the broken sash and picked up Bullhead.

Next morning it was all over the West End.

"And Bullhead!" cried everybody. "That's what gets me. Who'd have thought it of Bullhead!"

When they all got up there and saw what Bullhead had done, everybody agreed that nobody but Bullhead could have done it.

The pilot bar of the short line mogul, in swiping Bullhead unmercifully, had really made a railroad man of him. It had let a great light in on the situation. Whereas before every one else on the line had been to blame for his failures, Bullhead now saw that he himself had been to blame, and was man enough to stand up and say so. When the big fellows, Callahan and Kenyon and Pat Francis, saw his trail next morning, saw the blood smeared over the table, and saw Bullhead's letter of resignation signed in his own blood manual, and heard his straight-out story days afterward, they said never a word.

But that morning, the morning after, Callahan picked up the letter and put it just as it was between the leaves of the order book and locked both in his grip. It was some weeks before he had a talk with Bullhead, and he spoke then only a few words, because the nightman fainted before he got thru. Callahan made him understand, tho, that as soon as he was able he could have any key on that division he wanted as long as he was running it—and Callahan is running that division yet.

It all came easy after he got well. Instead of getting the worst of it from everybody, Bullhead began to get the best of it, even from pretty Nellie Cassidy. But Nellie had missed her opening. She tried tenderness while the boy was being nursed at the Junction. Bullhead looked grim and far-off thru his bulging bandages, and asked his mother to put the sugar in his coffee for him: Bullhead was getting sense.

Besides, what need has a young man with a heavy crescent-shaped scar on his forehead, that people inquire about and who within a year after the Goose River affair was made a train despatcher under Barnes Tracy at Medicine Bend—what need has he of a coquette's

smiles? His mother, who has honorably retired from hard work, says half the girls at the Bend are after him, and his mother ought to know, for she keeps house for him.

Bullhead's letter of resignation with the print of his hand on it hangs framed over Callahan's desk, and is shown to railroad big fellows who are accorded the courtesies of the Wickiup. But when they ask Bullhead about it, he just laughs and says some railroad men have to have sense pounded into them.

The end.

THE FARM BOY IN THE ARMY

When the draft came, Tom Boring felt a pang of regret, even tho he had often before threatened to leave the farm with its chores and seeming drudgery. He wanted something new and fresh, "something doing" all the time, with gay crowds, lots of pals—just the thing, it seemed, that the romantic army life offered. But when it came to leaving, the lump simply insisted on coming into his throat.

He might never come back. He was going into a strange new world of men and activities—what would he find? He knew there'd be a big gap—and he wondered if there was anything in camp that might serve in the place of some of the things he had enjoyed at home.

The evening of the first day in camp, Tom was literally staggering to his barracks, he was so tired, when a friendly sergeant slipped his arm under the boy's and suggested the Y. M. C. A. hut. Tom had seen the green huts during the course of the day, but had no thought about making use of them. His first glimpse inside of a nearby hut with the sergeant that night convinced him that in the future this would be "home" for him.

He had often longed for just this kind of thing—a place where there were motion pictures, vaudeville entertainments, boxing, wrestling, music, books and magazines. If he had entertained any notion that he was going to be lonesome in camp, that notion was now quickly dispelled for his first evening in camp was spent in attending an inspiring lecture on "America and the War," which gave Tom an entirely new view of the historic and diplomatic reasons behind the conflict and a new resolve to do his own small part in winning it.

In the days that followed, Tom made constant, almost religious use of the Y. M. C. A. and all of its free privileges. All his letters home bore the emblem of the Red Triangle and the inscription "With the Colors" of which he soon became very proud. Boxing and wrestling matches staged in the hut attracted him almost as strongly as the victrola and the vaudeville stunts.

One day Tom and his "bunkies" were ordered to the rifle range, covered with mud and slush from recent rains and snows. It would have been a real hardship had there not been a Y. M. C. A. hut there in which the firing squads could warm up between practices. What was even more cheering was the hot coffee the Y. M. C. A. secretaries served free of charge for the young soldiers' lunches. Tom never had felt so grateful toward the Red Triangle and its secretaries as he did on this occasion.

A rough fellow sitting on the bench beside Tom remarked: "Say ain't this great. Why after the war every darn soldier in the army will belong to the Y. M. C. A."

Tom felt pretty much the same way about it. He was so cordial, at any rate, that when his captain detailed him with three other rookies to keep up the fires in the Y. M. C. A. hut at the rifle range, he was glad to pitch in and help the good work along. And all the other men, he found, felt the same way.

Naturally, Tom Boring is only one of thousands of boys from the farms of America who are getting their first experience in the army—and finding it just a little easier and a little more satisfactory because of their inevitable contact with the Y. M. C. A. and its broad, camp-wide program.

"Y" Secretaries with whom the writer has talked feel that the boys from the farms of the United States have enjoyed and really gotten more benefit from the Y. M. C. A. program than the boys from the large towns and cities. The green huts have offered the farm boy a great deal that he has never had in the country. They have furnished him with wholesome amusement and recreation and the sociability of the crowd which he missed on the farm. The secretaries have been his closest advisors in times when he needed nothing so much as spiritual comfort or the simple reminders of home.

Whether the farm-soldier boy has been in an American cantonment or with Pershing "over there" he has been served equally well by the Y. M. C. A. The contribution of millions of farmers in this country to the $35,000,000 campaign fund last November made it possible to carry this home atmosphere right into the camp. With the fund actually up to $60,000,000 there has been granted the means to serve the farm boys even more completely than had at first been anticipated.

If Tom Boring should become sick he would receive daily visits from a Y. M. C. A. secretary, bringing him apples or oranges and stationery or books and magazines—or perhaps a Pocket Testament, if Tom would like it. If he is too weak to write, the man who wears the Red Triangle on his sleeve will gladly write the letter for him. When Tom grows convalescent or becomes what is called an "ambulatory" case, he will no doubt make his way every day to the Y. M. C. A. hut being attached to every base hospital and supplying the men in the wards with exactly the same advantages and privileges which they enjoy while well

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You'll find that ev'ry acre, is thick with things to eat.
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Fresh schemes for makin' good.
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To sprout a crop of food.
My sheds are fairly bulging,
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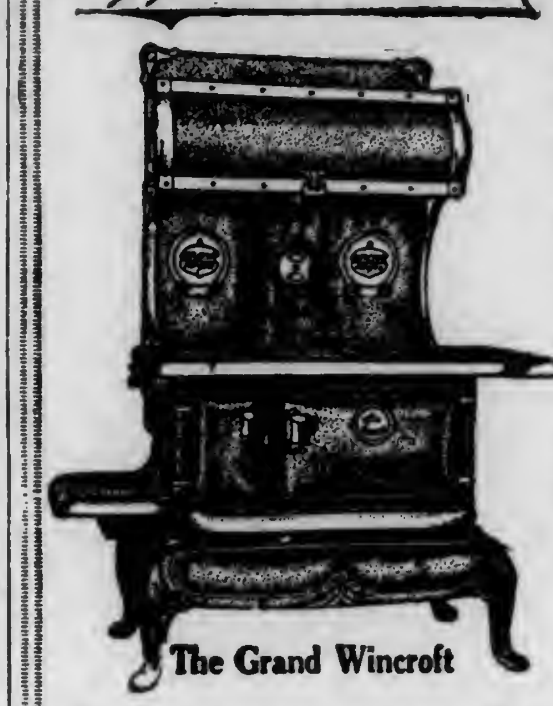
With th' Blossoms in its heart.

—W. Livingston Larned.

Wincroft



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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 6, 1918.

The past week has shown a decided drop in the potato market, and both old and new potatoes are selling considerably lower. The market is really in a deplorable condition. Supplies of old potatoes in the yard are heavy for this season of the year, and the demand for this stock seems to have dropped away to almost nothing. At this writing Pennsylvania potatoes are selling from 80c@$1.10 per cwt., with small lots bringing $1.25 for extra fancy. New York State potatoes are selling generally from $1@1.15 per cwt. While supplies of new potatoes are not considered heavy for the season, at the same time they have been more than ample for the demand, with the result that prices had to take a big drop in order to start a consuming demand. No. 1 potatoes are now selling at $3.25@3.50 per barrel, with No. 2 at $2.25@2.50, with practically no demand whatever for No. 3. No. 1's in 150-lb. sacks are selling from $2.25@2.40, with No. 2's at $1.75@1.85. New potatoes in bushel hampers are selling at 50@85c, while bushel crates bring 60@90c. At these low prices there has been a fairly good demand created and new potatoes may react and go a little higher, but the outlook is dark for old potatoes. Sweet potatoes continue very firm under the light supplies. New Jersey stock in ⅝ bushel baskets is selling at $1.40@1.50 for No. 1's, with mediums at $1.15, seconds at 50@60c. Southern sweets in bushel hampers are also in light supply, and selling generally from $1.50@2 for primes, with seconds and mediums from $1@1.35.

Vegetables

Asparagus from nearby points is now very plentiful and while prices are lower than last week there is a good demand and movement which keep the market cleaned up from day to day. Collossal asparagus is selling at 20@25c a bunch; fancy, 16@20c; primes, 10@16c; culls 7@10c. These prices will also apply in the Maryland and Delaware receipts. Shippers should remember that green asparagus always sells at 3@5c a bunch higher than the white, grade for grade. Fancy green and wax beans continue in light supply and such, when here, are ruling firm and active at $2.50@3 per hamper. The market is oversupplied, however, with poor beans and these are selling anywhere from 50c@$1.50 per hamper as to quality. Dried beans are in ample supply but meeting a very slow demand at $13.50@14 per cwt. for marrows, with pea and medium at $12@13. Artichokes are showing no change, boxes selling at $2.50@3.50, with half boxes at $1.25@1.75. New beets are in light supply and the market continues firm at 6@7c per bunch. A few old carrots from nearby points are showing a wide range in quality and sell all the way from $1.50@3.25 per barrel. New carrots from Southern points are in light supply and selling from 2@3c per bunch.

Under heavy receipts prices on new cabbage have taken quite a drop, with crates now selling from $1.50@2.50, and hampers from 75@90c. Cucumbers are showing a very wide range in quality; fancy are meeting an active demand at $3.50@4 per hamper, with poor selling on down as low as $1.50. Egg plants continue in light supply and are showing little or no change, with best plants selling at $3.50@4 per crate and choice and small size at $2@3. Horse radish is selling slowly at $3@5 per barrel. Good fancy kale continues very scarce and when here commands good prices. Most of the stock, however, is poor and moving hard at low prices, sales being made generally at $1.25@1.75 per barrel. Strictly fancy lettuce is in light supply and the market firm and active on such, but much of the stock is poor, upon which the market is irregular. South Carolina hampers are selling all the way from $1.25@2.50; North Carolina from $1.25@3 per hamper; Virginia, $2@2.25 per hamper; California Iceberg, $4.50@5 per box. Pennsylvania lettuce is in good demand and selling all the way from $2.50@4 per barrel of 50 heads. Mushrooms are more plentiful and lower as the weather conditions are against them and are now selling from 15@35c per pound. The few lima beans that are here are selling from $4@5 per hamper.

Onions are showing a decline from last week's prices. Best new Texas onions are now selling from $1.75@2 per crate, with culls and No. 3's at $1@1.50. Best old onions are selling at $1.50@1.75 per hundred weight, with poor and sprouted from 85c@$1.25. Strictly fancy peas continue in light supply and the market rules firm with North Carolina half-barrel hampers selling from $2.75@3.75 as to quality, and third-barrel hampers at $2@2.75. Parsley continues plentiful and unchanged at $2@2.50 per barrel. Norfolk radishes are mostly very poor in quality and selling from $2@3 per barrel. The nearby Pennsylvania and New Jersey radishes are showing fine quality, and meeting an active demand at $2.50@3 per 100. Peppers continue in light supply and the market is firm and a little higher than last week, best now selling up to $4.25 per crate with choice at $2.50@3. Nearby rhubarb is quite plentiful but under an active demand is cleaning up daily at 2@3c per bunch. Scullions are showing practically no change from day to day, prices ranging generally from 75c@$1.25 per 100, as to quality. Norfolk spinach is showing a big range in quality, there being lots of poor yellow here which is selling low, while good stock is selling from $2@2.50 per barrel. New Jersey and Pennsylvania spinach, however, is gradually appearing on the market and the trade is giving this the preference at 40@50c per box. While supplies of tomatoes are not heavy, the quality is mostly poor and fancy are ranging mostly at $2.50@3 per crate, and $1.50@2.50 for choice. Strictly fancy tomatoes, however, are selling up to $3.50 per crate, but such are very scarce. White turnips are about 25c per barrel easier, selling mostly at $2.25 per barrel. Watercress continues about steady at 2@2½ per bunch.

Fruits

The supplies of fresh fruit of all kinds continue very light, and the market is ruling firm and active on all fruit showing goood quality. Supplies of strawberries are far below normal for this period of year, altho offerings are gradually getting more plentiful. North Carolina is still supplying the bulk of the berries with the Norfolk season just starting. At this writing North Carolina berries are selling all the way from 13@25c per quart, mostly 18@22c. A few Norfolk berries have sold as high as 30c per quart, but most of them are poor and small and selling from 15@20c. The light offerings of berries have been a big help to the apple market, and apples have been sellling extremely high. Baldwins run from $5@7 per barrel; Ben Davis, $4@5.50; Winesaps, $6@7; Albemarle Pippins, $4.50@7 per barrel. In boxes Winesaps have ranged from $2@3.25; Newtowns, $2@2.75; Black Bens, $2@2.75; Arkansas Blacks, $2@3.

Poultry

Under a good active demand, live fowls are firm and about 2@3c higher than last week, selling at 36@37c; staggy roosters, unchanged at 24@26c; old roosters steady at 22@23c. A few spring chickens have made their appearance on the market and are bringing the high prices of 55@63c per pound. Guineas remain steady from $1.50@1.65 per pair, and pigeons are also unchanged from 35@50c.

Eggs

There has been practically no change in the egg market since our last report. Supplies continue fairly liberal, but under a good consuming demand the market has been cleaning up from day to day. Current receipts are quotable at 36c; nearby firsts, 37½c; Western eggs, from 36@37½c as to quality; Southerns at 34@35c.

BALTIMORE PRODUCE

Baltimore, Md., May 6, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.15@1.25 cwt; do., New York, $1.15@1.25; Easter Shore, $1@1.10 cwt. Sweet potatoes, yellow, $4@5 bbl; $1.60@2 hamper. Asparagus, $1.50@2.50 doz Beets, 3@5c bch. Cabbbage, new, $2@2.50 crate. Celery, Florida, $2@2.75 crate; do., native, 5@6c bch. Cucumbers, $2.50@3 crate. Lettuce, $1.50@2 basket. Onions, yellow, $1.50@1.75 cwt; red, $1.25@1.50 cwt. Radishes, $1@1.25 basket. Tomatoes, $2@3 crate. Rhubarb, $2 per 100.

Fruit.—Apples, Maryland and Pennsylvania, $3.50@5; New York State, $4@6; do., No. 2, $2.50@3.50. Strawberries, 15@25c qt.

Butter.—Creamery, western, extras, 43@44c; firsts, 42@43c; pound prints, 45@46c; do., firsts, 43@44c. Nearby creamery, 40@41c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 35c; Easter Shore and Virginia, 35c; Southerns, 34c.

Live Poultry. — Chickens, 38@40c; do., springers, 55c@60c; old roosters, 18@20c; ducks, 27@28c; pigeons, 40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $32.50; standard timothy, $31.50@32; No. 2 timothy, $31; No. 1 light clover mixed, $31.50@32; No. 2 light clover, $30.50@31.50. No. 1 clover mixed, $30.50@31.50; No. 2 $28.50@30. No. 1 straight rye straw, $20; No. 1 tangled, $17.50@18.50; wheat straw, $15@17; oats straw, $16@19.

Grains.—Wheat, bag lots, $2.08@2.13 bu. Corn, bag lots, white, $1.72@1.75 bu; yellow ear corn, $8.50@8.75 bbl. Standard white oats, 87½c; No. 3 white, 86¼c. Rye, No. 2 western, $2.10@2.40; bag lots, $2@2.20.

YORK PRODUCE MARKET

York, Pa., May 6, 1918.

There is little demand for the small lots of left-over vegetables from the farms at this time. Much fresh produce is being shipped from the south and this has the preference. Eggs are in light demand. Potatoes are not moving at all. Apples are slow at slightly advanced prices.

Eggs.—32@34c per dozen.

Butter.—Country, 45@48c lb; separator, 50@55c lb. Milk, 10c quart.

Poultry.—Hens, 23@30c lb; dressed, 75c@$1.75 each.

Vegetables.—Potatoes, 8@10c ½ pk; 40@60c bu; cabbage, 5@10c hd; lettuce, 3@8c hd; beets, 3@5c bch; radishes, 3@7c bch; onions, 5@7c bch; lima beans, 18c pt; soup beans, 15@17c pt; corn meal, 10@12c qt; turnips, 25c ½ pt.

Smoked Meats.—Sausage, 40@45c lb; pudding, 28c lb; hams, 45c lb; sliced, 45@64c lb; bacon, 60c lb; bologna, 15c ¼ lb; dried beef, 16c ¼ lb; lard, 32@36c lb.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.20; rye, $2.10; bran, $2.60 cwt; middlings, $3 per cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.62; oats, 90c; rye, $2; bran, $50 ton; middlings, $60 per ton.

PITTSBURGH PRODUCE

Pittsburgh, Pa., May 6, 1918.

There is a good movement of vegetables, but prices on all old stock is lower. New stuff from the South is meeting with good demand and is firm when of good quality. New vegetables help depress the market on old stock except where the latter are of best quality.

Asparagus, southern, $3.50@$4.50 box; do., home grown, 75@85c per bundle. Beans, green, $2@2.75 hamper. Beets, $1.50@1.75 hamper. Cabbage, old, $25@30 ton; do., new, $2@3 crate. Carrots, new, 35@45c doz. Cucumbers, $2@2.50 hamper. Horseradish, $5.50@6 bbl. Lettuce, southern, $1.75@2 hamper; do. leaf, 40@45c basket. Onions, $1.50@1.75 sack; yellow, $1.65@1.75. Parsnips, 50@65c bu. Peas, $3@3.25 hamper. Potatoes, old $1.75@2.25 sack; do., new, $3@4.75 bbl; do., sweet, $1.85@2 hamper. Radishes, 25@35c doz.; $1@1.35 basket. Rhubarb, 20@25c bundle. Spinach, $1@1.25 bu. Tomatoes, $2.25@4 crate. Apples, $4@7 bbl. Strawberries, $7@8 crate; do., fair, $5@6.

Live poultry is now arriving in quantities to become staple on the market. The demand is only moderate and prices are none too firm.

Live Poultry.—Hens, 33@35c lb; springers, 32@35c; roosters, 23@25c; turkeys, 30@35c; ducks, 28@30c; geese, 22@25c; guinea hens, $1 pr.

Dressed Poultry.—Hens, 35@40c lb; springers, 35@40c; ducks, 38@40c; turkeys, 38@40c; ducks, 35@36c; fowls, 40@43c.

Dairy Products.—There was an advance of one cent per pound on best grades of butter. Cheese holds steady. Eggs are slightly lower.

Elgin prints, 47@48c; Elgin tubs, 46½@47½c; New York cheese, 28@29c; do., Ohio, 26½@27c. Selected eggs, 36½@37½c; eggs at mark, 35@36c. Goose eggs, $1@1.10 doz; ducks eggs, 38@40c.

Grain and Hay.—No. 2 yellow ear corn, $2@2.05 bu; No. 3 yellow shelled, $1.80@1.85; No. 2 white oats, 95½@96c; No. 3 do., 94@94½c bu; standard oats, 95@95½c bu; No. 1 timothy hay, $28@28.50 ton; No. 2 do., $24.50@25. No. 1 light mixed, $24@25. Rye straw, $16@16.50. Oat straw, $14.50@15. Wheat straw, $14.50@15.

NEW YORK PRODUCE

New York City, May 6, 1918.

Butter market is active and prices unsettled. Cheese firm. High grade eggs in good demand. All poultry is firm. New potatoes are lower.

Butter. — Creamery, extras (92 score), per pound, 48c; higher score, 48½@49c; thirds to firsts, 36@47½c; state dairy, 37@47c; ladles, 32@35c.

Cheese.—Colored specials, 25½@26c; Daisies, 25@25½c.

Eggs.—Fresh gathered extras, 38@38½c; extra firsts, 36½@37c; nearby white, fine to fancy, 41@42c; ordinary to good, 38@40c; browns, 38@39c.

Vegetables and Greens.—Asparagus, fancy $3.25@3.75 doz. bchs; prime, $2.25@3; culls, $1.50@2. Beets, per bbl. $1@1.50. Onions, per 100-lb. bag, 50c@$2.25. Potatoes, Jersey, $1.25@1.50 per 100 lbs. Carrots, $1.00@2 per barrel. Scullions, per 100 bchs. $1.50@2.50; spinach, per bbl. $1@2.50.

Apples.—Winesap, $4@7; York Imperial, $3.50@5.50; King, $4@7; Baldwin, $4@7.50; Northern Spy, $4@8.

LANCASTER PRODUCE

Lancaster, Pa., May 6, 1918.

Hundreds of bushels of potatoes were hauled back to the farms of this county this morning, and many were sold from door to door on the way home, by farmers who apparently have been holding large quantities over the winter. Prices fell to seventy cents a bushel, the lowest that has prevailed here for many months. Asparagus was offered again in large quantities and the demand was brisk.

Butter and Eggs.—Creamery butter, 55@60c; country butter, 55@58c; fresh eggs, 33@35c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 7@10c per bunch; spinach, 20c ½ pk; potatoes, 10@12c ½ pk; do., 50c@$1 per bu; new potatoes, 70c ½ pk; sweet potatoes, 25@30c ½ pk; egg plant, 10@15c each; lettuce, 5@12c per head; lima beans, 18c pint; new beans, 50@60c ½ pk; apples, 25@35c ½ pk.

Grain Market.—Milling wheat, $2.05 per bu; new ear corn, $1.60; rye, $1.90; oats, 80c; No. 1 timothy hay, $28 per ton; clover hay, $25; wheat straw, $17; oat straw, $10.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 6, 1918.

Beef Cattle.—Offerings of steers were light and the market ruled firmer under a fairly active demand. Bulls and cows sold fairly and values were well sustained. Buyers were manifesting more interest in calves and prices ruled firm, with supplies well under control.

Steers, good to choice, $15@16.60; fair to good, $13.50@15; common to fair, $12@13.50; bulls, $10@12.50; extras higher; bulls, common, $8.75@10; cows, fat, per lb.; choice, 9@10¾c; fair to good, per lb., 7½@9c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $15@15.50; fair to good, $13@14.50; common, $10@12; Tennessee and southern, $8@13.50.

Sheep and Lambs.—There was a rather better movement in both sheep and lambs and prices were well maintained under moderate offerings.

Sheep, wethers, extra, $14.50@15; good to choice, $13@14; medium, $11@12; common, $8@9.50; ewes, heavy, fat, $13@14. Lambs, choice, $20.50@21; do., medium, $18@19; inferior, $15@16.50.

Hogs.—Receipts were quite liberal and the market ruled a shade easier, but at revised figures choice stock was in fair request. There was less complaint of stock being delayed in transit. Quotations for best western, $19.50.

City Dressed Stock.—Steers, heifers and cows sold fairly and ruled firm, with supplies well under control. There was a fair movement in other kinds and prices generally were well maintained.

Steers, 21@26c; heifers, 21@23c; cows, 16@22c; calves, 25@26c; southern and barnyards, 16@18c; country dressed, 19@21c; sheep, choice, 25@27c; do. extra, 28c; lambs, 28@32c; hogs, 25¼c.

LIVE STOCK MARKETS

New York, May 6.—Beeves.—Receipts, 2635; steady, steers, $11@17; bulls, $8@13.50; cows, $5@11.95.

Calves.—Receipts, 7300; steady; veals, $12@16; culls, $10@12; skim-milch calves, $10@11.

Sheep and Lambs.—Receipts, 4300; steady; clipped sheep, $8@12; wool wethers, $18; wood lambs, $18@21.25; common and medium clipped, $15@16.75.

Hogs.—Receipts, 6550; market higher at $18@18.60; roughs, $6.50.

Lancaster, May 6.—Cattle.—Receipts, 1080 head, against 1020 head last Monday; market active; prices steady; good to fat steers, $14.25@16; medium to good steers, $12.75@14; common to medium steers, $11.75@13; good to prime bulls, $11.75@13; medium to good bulls, $11@12; common to medium bulls, $10@11.50; good to prime cows, $9.50@10.75; medium to good cows, $8.50@9.50; common to medium cows, $7.25@8; medium to good bologna cows, $5.75@6.25; common bolognas, $5@5.75; plain light-weight calves, 14½@15½c per lb; lightweight calves, 10@12c.

Hogs.—Receipts, 180 head; market slow; prices steady; best grades, $18.25@18.75; light roughs, $16.50@17.50; heavy roughs, $12.50@16.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., May 6, 1918.

Baled Hay and Straw.—Receipts, 108 tons of hay and 5 cars of straw. The hay market ruled firm, with demand equal to the very limited offerings. Straw was steadily held.

Timothy hay, according to location—No. 1 large bales, $29@30; No. 1, small bales, $29@30; No. 2, $27@28; No. 3, $23@25; sample, $17@20; no grade, $14@16; clover-mixed hay, light mixed, $27@28; No. 1 do., $25.50@26.50; No. 2, do. $24@25.

Straw. — No. 1 straight rye, $21@22; No. 2 do., $21.50@22; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1, wheat straw, $18.50@19; No. 2 do., $18@18.50; No. 1 oat straw, $19@19.50; No. 2 do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $1.74@1.76.

Oats.—No. 2 white, 89@90c.

NEW YORK HAY AND GRAIN

New York City, May 6, 1918.

Feed.—The usual Saturday market prevailed. Prices were nominally unchanged. Demand was routine, buyers taking but limited quantities sufficient to cover some nearby needs. There is a fair amount in transit and delivery of this is being awaited. Corn feed meal was held at $57 per ton, prompt shipment from the West, this being one of the strongest grades on the list. Small offerings of barley feed were made at $39 per ton and oat feed at $32 per ton. There was no inquiry for linseed meal, which is maiurai in view of the easy undertone displayed. Quotations (prompt Western shipment): Rye middlings nominal; oat feed, $32 per ton; barley feed, $39; linseed meal, per ton, $55.50; corn feed meal, $57 per ton.

Hay and Straw.—There has been no increase in offerings in Brooklyn and upper New York markets and tone there continues firm. At Thirty-third street and at river barge piers offerings of medium and low grades are still quite liberal and no improvement on such.

Hay.—No. 1, prime, $30@32; No. 2, $26@29; fancy clover mixed, $27@29.

Straw.—No. 1 rye, $18.

Corn.—No. 3, $1.60.

Oats.—No. 2, white, 88@89c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., May 6, 1918.

Butter.—Receipts were light and the market ruled firm, with demand absorbing all offerings.

Western, fresh, solid-packed creamery, extra, 47c; higher-scoring goods, 48@49c; extra firsts, 46c; firsts, 45c; seconds, 42@43c; sweet creamery, extra, 48c; under grade, 42@47c; nearby prints, fancy, 51c; do. average, extra, 48@50c; firsts, 46@47c; seconds, 43@45c; garlicky, 38@43c; special brands jobbing at 52@55c.

Receipts, as compiled by the Bureau of Markets, 2773 tubs of butter and 7973 cases of eggs.

Cheese was quiet but firm under scarcity. New York, whole-milk, fancy, 25½c; specials higher; New York, whole-milk, fair to good, 23@25c.

NEW YORK MILK MARKET

New York City, May 6, 1918.

The reduction in retail rates, which has as an object the stimulation of demand and sales, has not yet materially reduced the surplus. The commission rates for grade B to the producer in the 26-cent zone are $2.46 a hundred per 3 percent milk; $2.70, or approximately 5.75 cents a quart, for 3.6 percent. and $2.86 for 4 percent.

The receipts of milk and cream in 40-qt. cans for the week ending May 4 were as follows:

Railroad	Milk	Cream
Erie	39,512	2,528
Susquehanna	6,381	34
West Shore	10,780	1,080
Lackawanna	66,010	2,120
N. Y. Central (long haul)	131,693	3,090
Ontario	43,643	4,571
Lehigh Valley	48,714	1,176
New Haven	4,988	47
Pennsylvania	11,120	250
Other Sources	7,290	220
Totals	370,131	15,122
Same week last year	386,164	12,269

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AYRSHIRES
Two mature cows, one heifer, two mature bulls and some bull calves, all registered. This is well bred surplus stock offered for sale by members of the Monroe County Ayrshire Club, at farmers' prices. *Address for particulars,*
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Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees.
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Veterinary

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Too Much Bowel Action.—Collar Gall—I have a mare, 16 years old, that suddenly commenced to scour while standing in stable. I had not changed her feed. She is fed 3 quarts of equal parts meal and bran, twice a day. This purging seems to leave her soon as she is driven or worked. She also has boil on shoulder which I am unable to heal. E. D., Honesdale, Pa.—Her case is rather unusual as purging is best treated when the animal is kept very quiet. Exercise produces bowel action and is one of the remedies for constipation. Feed her no bran when she is idle, but more well-cured timothy. Mix equal parts ginger, cooking soda and ground gentian together and give her one tablespoonful at dose in feed, 3 times a day. Dissolve ¼ lb. acetate lead, and 3 ounces sulphate zinc in four quarts of water and wet sore on shoulder five times daily. If the collar caused the sore you had better remove some of filling in order to relieve shoulder of undue pressure and friction. Then sore will heal.

Nasal Obstruction.—About April first I wrote you about my mare. You prescribed treatment thru veterinary column and the remedy seemed to cure her of nasal catarrh. But now she seems to blow considerable, whenever she is exerted much. I am told that she may have growth in nostril, but if she has I am unable to locate it. I do not like to part with her as she is safe to drive, besides she is good worker. What do you recommend? I. Y., Spring City, Pa.—I am inclined to believe that you had better leave her alone as she has not yet had sufficient time to fully recover from former trouble. Give her a dessert spoonful of bicarbonate soda at dose in feed or drinking water, 3 times a day. Light work will be a benefit to her.

Wire Cut.—One of our two-year-old colts ran against a wire fence cutting shoulder some two or three inches in length. The home remedies we have applied fail to heal the wound. A. G. H., Spring City, Pa.—First of all a wound should be cleaned of all dirt and irritating particles. Paint it once with tincture of iodine and then apply equal parts oxide zinc and boric acid freely, twice or three times daily. Another excellent remedy for wound healing is Chlorazene.

Bone Spavin.—We have a four-year-old mule that is working on farm. He has hard bunch on lower part of hock joint. Whatever it is, it has caused no lameness, altho it has been there for the past twelve months. A neighbor of mine, who is an experienced mule man, tells me it is bone spavin. What treatment do you recommend for this kind of an ailment? T. H. J., Meadville, Pa.—It is decidedly bad practice for any veterinarian to either treat or prescribe a remedy for a case of this kind. Your mule travels sound, is working every day and as he grows older the bony bunch will gradually but slowly grow smaller and perhaps never cause any lameness. Leave him alone.

Warts on Cow.—We have a cow that has four warts on neck, three on left side, one on right. None of them are very large, but I would like to take them off. H. L. O., Sharon, Pa.—Dissolve thirty grains salicylic acid in one ounce of acetic acid and apply to warts, three times a week. If you will apply castor oil daily it will generally take them off.

Rheumatism.—We have a pig, five months old, that sometimes walks lame in fore leg, then suddenly he cripples some on hind leg. What ails him? A. B. R., Courtney, Pa.—Give him 5 grains sodium salicylate at dose, 3 times a day. Keep him in dry pen and change his feed.

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W. C. WHITE, COUDERSPORT, PENNA.

COUNTY NOTES

Lancaster Co., Pa., (EC) April 22.—Nearly every farmer is plowing for corn. A few shocks of last year's corn had to be husked this spring and quite a lot of fodder had to be hauled before plowing for oats. There is not much oats sowed and not many potatoes planted. The price of potatoes (75 cents per bushel) will likely decrease the acreage. Tobacco seed is sowed and some have plants up. The week of the 8th was very hard on the seed beds as we had snow and sleet. Trees were completely covered with ice but it is not thought that either the seed beds or the fruit buds were damaged to any great extent. Most of the wheat fields look very bad. A few of our farmers went over their wheat fields early with the 60-tooth harrows and thus covered the exposed rootlets. This was thought to be a great benefit. Clover fields are looking exceptionally fine. Most of our farmers had their seed corn tested and found that they would have to buy new seed. There will be enough good seed in the county, however, to supply the needs. Eggs are 34 cents per dozen; wheat, $2.12; corn, $1.75; oats, 95 cents; rye, $1.75; potatoes, 75 cents; dairy butter, 40 cents, separator butter, 46 cents; calves, 15½ cents; dressed hogs, 22 cents.—R. Chester Ross.

Broome Co., N. Y., (SE) April 25.—Local dairymen are much disappointed with the new milk price. As pastures are very late because of the continued cold weather, dairy farmers must lose money as hay and feeds are as high as they were last month. At a local meeting of the league the farmers voted to use no oleomargarine in their own families and thus help consume the excess butter. Farmers are rushing their spring work but the weather keeps so cold that vegetation is slow in starting. The pastures are not much greener than they were in March. Some oats are sown and some early potatoes are planted. Gardens are being plowed and planted. The daylight saving plan is making many farmers burn lights for an hour or more in the morning. Potatoes, 75 to 80 cents; beans, $7.50 to $8; old cabbage, 50 cents to $1 per 100; onions, 50 to 75 cents bu; green onions, 25 and 50 cents doz. bunches; butter, 45 cents; eggs, 35 and 40 cents; live fowls, 30 cents; do., dressed, 35 cents; wheat, $2.32; oats, $1.07; corn, $1.80; ground oats, $68 ton; bran, $43 ton. Local feed dealers seem unable to get bran at any price.—C. H.

Cumberland Co., N. J., (S) April 29.—The weather has been cool and we have not had a very heavy rain fall this spring. Prices of stock still remain high but the price of milk has been falling until some dealers are only paying 3 cents per quart. Eggs, 34c doz.; butter 50c lb. Farmers are preparing their corn ground; the acreage is going to be about normal. Potatoes are all planted. Oats are growing nicely.—Everett H. Sheppard.

SHEEP OFFERED

The More Sheep-More Wool Association of the United States has on pasture at New Hope, Bucks County, Pa., 100 yearling ewes of the same type as those brought East last year. These ewes are unshorn and are in lamb with Shropshire rams. They are selling to farmers at cost; i. e., $22 per head.

If there were as many persons so keenly interested in the price of defeat as they appear to be in the price of wheat, our war problems would be much nearer solution.

There are two reasons for not forcing the sale of hens: The first is that heavy sales may make a market glut and low prices; the second is that the eggs laid now are produced at a comparatively low feed cost.

The industrious farmer is about the only person not particularly affected by the daylight saving plan. He always has been in the habit of using all the daylight there was, and stretching it out at both ends by the use of a lantern.

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PREPARES THE SOIL
PLANTS THE CROPS
REAPS THE HARVEST
Cleveland

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It plows. It harrows. It plants. It reaps.

And it does all of these things *faster* and *better* than was possible before.

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The Cleveland Tractor plows 3½ miles an hour—eight to ten acres a day—which is equal to the work of *three* good men with *three* 3-horse teams.

It travels on its own endless tracks which it lays down and picks up as it goes along.

It operates easily over gullies, ruts, and uneven ground of all kinds. Because of its 600 square inches of traction surface it goes over sand, gumbo, mud and slippery clay without packing the soil, without sinking, miring or floundering.

The Cleveland weighs less than 3200 pounds and is so small that it can be readily driven under and among small fruit trees.

It steers by the power of its own engine and will turn in a twelve foot circle.

It requires less space to house than a single horse.

The Cleveland Tractor was designed by Rollin H. White, the well known motor truck engineer—and is manufactured under his supervision.

He has designed the track for long service. The sections are constructed to prevent filling or packing with mud and protection is provided to prevent dirt and mud from falling into the track. The sections are joined with hardened steel pins which have their bearings in hardened steel bushings.

Cleveland Tractor

Gears are protected by dust-proof, dirt-proof cases and are of the same high quality as those used in the finest trucks. Materials used throughout are of the best.

Every step must be taken this year that will speed up farm work—that will enable machinery to replace muscle—that will help produce—and increase harvests.

The Cleveland Tractor is already bearing a big share of the war burden. Farmers are producing larger crops because of the Cleveland—*and are making greater profits.*

You too can help the nation meet the food emergency—and incidentally make more money for yourself. Write to us *now* for complete information and the name of the nearest Cleveland dealer.

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The Modern Farmer a[illegible] Politics

The Why and What of the New York Federation [illegible]riculture

By SAMUEL FRASER

LIVINGSTON CO., N. Y.

Can a man be a good farmer and go into politics? This question was asked at a recent meeting of the New York Federation of Agriculture. It was quickly answered by another farmer who rose and asked: "Can a man be a good farmer and go to church?" It was suggested amid applause that the matter be referred to Governor Whitman.

There seems to be a fear in the minds of the old line politicians and in the minds of some of those who have been looked upon as leaders in agriculture that the present day farmer is likely to lose his head if he once begins to think for himself, or if he once begins to analyze the conditions which have determined his present financial, political and social status and to compare his condition with that of men in other walks of life. They seem to fear that special danger exists in the farmer's seeking to use the present opportunity to put himself in position to improve himself, to the extent that he may be a better citizen, be more fully able to do his duty and meet the responsibilities which are now his and which will increase.

"Behold I see a new heaven and a new earth!" It is really coming. There is never again going to be a Great Britain as it was in 1914. There is never again going to be a France as it was in 1914. There is never again going to be a United States as it was in 1917. "Old things have passed away; all things are become new."

None can meet the new duties and responsibilities with old-time methods. The farmer must "go on or go under." He cannot stand still. The farmer's movement in America, wherever it is seen, is but his contribution to the great world-wide movement for greater freedom. It is not perfect; no one expects it to be. It is a movement, a step forward, an actual attempt on the part of the food producer to place himself in position so that he may do his duty and take his place with his fellowmen.

Some 104,000,000 people in these United States, to say nothing of our allies, make a daily prayer which is rapidly assuming the character of a demand (and some say it three times a day): "Give us this day our daily bread." Some 6,000,000 farmers with an equal number of helpers seek to meet this demand. Some 600,000 men or firms attempt to distribute this food to meet the cries of the 104,000,000. We have reached a crisis, and it is beginning to dawn on some of those who live in the cities that food does not grow at the corner grocery store. Some of the people have found that even with money in hand, they could not secure the particular food they wanted to buy, and knowing no more, they have sought to use the only tool they possessed which they believed would solve the problem. They used the ballot. They went to their representative and told him to pass some "food control laws." As a Jewess from the East Side of New York said: "We'll abolish all middlemen, we'll have the state take the food from the farmer and bring it to us. We are the state." And this met the ideas of many of those at the hearing. These people want high wages and food at former prices, and are organizing themselves to get it. There are in New York City alone over a thousand consumers' organizations, all more or less interested in solving the food problem. These people are "groping 'round." They will fail for a time and in desperation will try to insist on legislation which may be of such a nature as will imperil food production itself. The fixing of the price of milk in Chicago at 12 cents per quart the past winter in an illustration of this fact.

The Foundation Long Neglected Is Becoming the Head of the Corner

Is the farmer going to stand idly by and see his business put in jeopardy, simply because he has not done his duty? He has a duty to perform and if he shirks it, if he shirks his responsibility, he and the rest of society with him will reap a harvest of trouble. The 600,000 distributors are, in part, well organized. The small retailer is not, but those who handle a good percentage of the food in a large way have had to organize in order to live a[illegible] they wished. Their organization is a fact with which the producers and consumers must reckon. If the farmers organize they can go to the consumer and say—"We want you. You must have us. If you want legislation, have legislation which will be beneficial to all."

Recently a committee of the Federation of Labor sat with a committee of the New York Federation of Agriculture and it was beneficial to both. The labor men thought that legislation prohibiting the storage of food more than three months would be advisable, but a heart to heart talk soon showed them that such a law was impossible aand undesirable. Apples harvested in October must be held until May if we want apples in May. The same is true of potatoes, wheat, etc. The farmers assured the labor men that they could sell their crops direct to leaders of the labor organization if these leaders wanted to buy in that way; that at present there is nothing to bar such an arrangement; that all that is needed is that the farmers put themselves in better shape to collect, grade, store and pack their produce and that labor, if it can do the work better and cheaper than the men now engaged in the distributing business are doing it, can organize and buy direct and that no legislation is needed to make such a procedure possible. These labor men were, I believe, not only surprised but pleased with their conference. They had an idea that farmers had to sell thru a commission man. But one fruit grower assured them that if they wanted a carload of apples sent down to New York a barrel at a time and would send the money and the order, even if under the collar of a yellow dog, they would sell the fruit to them as readily as to any one else.

The farmer and the consumer have everything to gain by a better understanding of each other, and there is but one way to do it: The farmers must organize and stand for "a square deal for all." There is no use organizing for the sake of making a society which talks about farming; there are enough of such already. We feel the need for an organization which embraces all farmers; one of farmers, run by farmers for farmers. To do anything, it must have representation where the laws governing farmers are made.

The farmer who is patriotic cannot keep out of politics. He is negligent, he is unpatriotic if he neglects to do his part in aiding the common weal. This may be a new idea to some of those not conversant with farmers, but it is in keeping with the spirit of the times and the farmers of New York are awake. They want

Grow Soy Beans with Corn

How One Farmer Grows Them, and the Results Obtained

The use of soy beans planted with corn for silage is one of the most practical ways by which the farmer can economize in feeding his dairy cattle in these times of high-priced concentrated feeds.

By so doing he can cut down his own expenses and at the same time save quite a lot of grain which is so badly needed for human consumption.

We have been growing soys for several years, both for hay and grain, and with the corn for ensilage, and find them a very satisfactory crop.

As a hay crop, however, we prefer clover as thus far in our experience we have secured considerably more clover hay per acre than we did of soy beans. But clover sometimes fails and when this occurs I know of nothing better for a quick hay crop than the soybean.

As a grain crop it has been our aim to grow merely enough for the following year's seeding, as we believe we can raise them cheaper than we can purchase them of the seedsmen. When grown with the corn for silage they form a mixture that is hard to beat for heavy and economical milk production. We have grown them two seasons, and would not think of planting our ensilage corn without sowing the beans with it.

There are many ways advocated for growing the beans, some say grow each crop in separate fields, others mix beans and corn together in the corn box, others have planters with a special bean-planting attachment. This last is no doubt the best method, but we are not equipped with this kind of a machine, therefore we mix the required amount of beans with the fertilizer, when we put it in the distributor. This is very easily and satisfactorily done by taking a bucket containing the fertilizer in one hand and a cup containing the soy beans in the other, then pouring both steadily into the fertilizer box. This always resulted in a fairly even stand, and is much better than mixing with the corn as the beans are small and have a tendency to work to the bottom of the corn box, thus planting all beans at one place and all corn at another, which is very unsatisfactory.

We do not approve of growing the corn and beans in separate fields for the following reasons:

1. Because it makes more work and confusion in harvesting and filling silo. This makes it necessary to cut beans with binder or a mower and takes an extra team for hauling.

2. Beans are not thoroly mixed in silo as they are when grown with the corn. Thus one cow may get all beans and another all corn, which is certain to have a bad effect in the milk production.

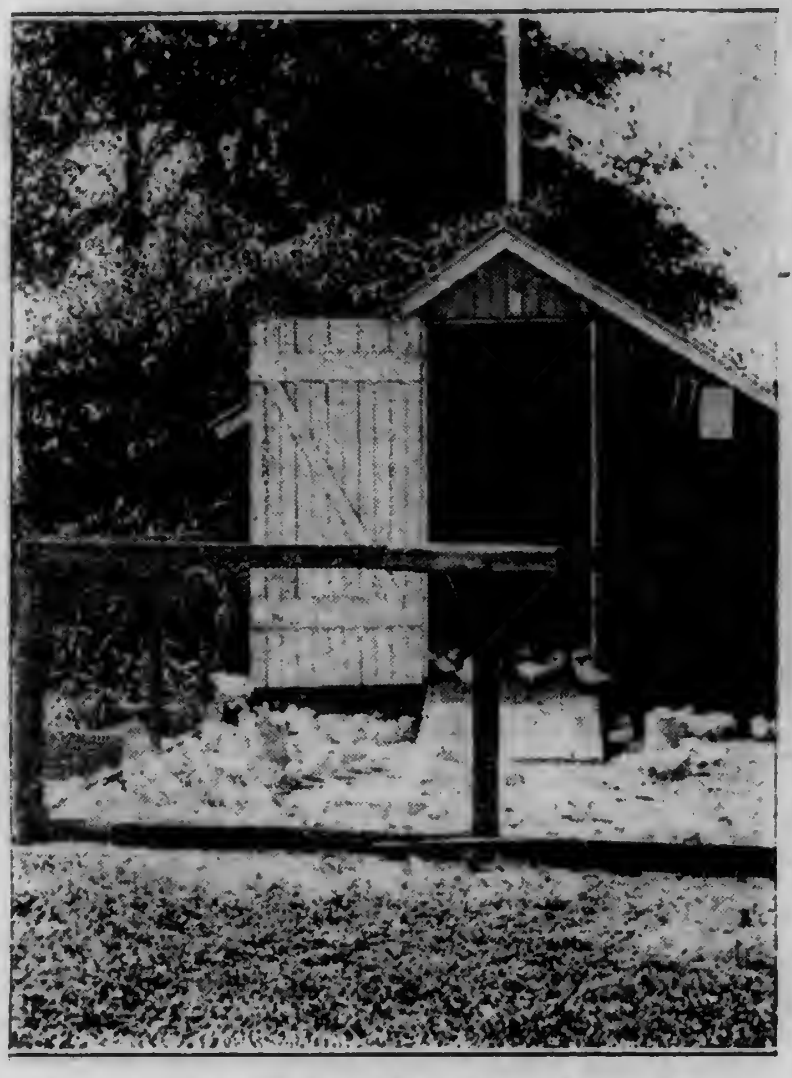
3. Not nearly as much forage can be produced per acre as when mixed. We have found that the corn is not merely just as good when the beans are sown with the corn as corn alone, but when we have a season of sufficient rainfall the corn is absolutely better. This is no doubt due to the nitrogen gathered by the soy beans being transferred to the use of the corn plant.

Therefore the beans which are grown can at least be regarded as profit for the extra labor involved.

It has also been claimed by some experimenters that corn grown with soybeans contains more protein than does corn grown alone. Whether or not this is the case we cannot say, but we do know that we can fill our silo on considerably less acreage and produce more and cheaper milk with the mixed ensilage than we can with corn alone.

The corn is a darker green in color and of more vigorous growth than when grown alone. Some growers claim that by the use of this mixed ensilage they can save as high as 40 percent on their feed bills. This estimate seems rather high but when it is taken into consideration that the tonnage per acre is not only greatly increased, but also that it increases the protein content, thereby making it unnecessary to buy so much high priced protein feeds, it can readily be seen that it is not impossible.

The corn should be planted about the same distance apart as you would plant the same variety for grain and using about an equal amount of beans, being careful not to plant too deep as the beans are liable to rot if planted too deep.



Colony House Chicks, Lexington Stock Farm, Bucks Co., Pa.

This year we are going to try growing the beans with our corn intended for grains as well as with the ensilage. They will then be harvested with a corn harvester, the corn husked and the stover, together with the beans, will be cut or shredded and used as roughage for the horses and dairy cattle. What the results will be we cannot tell, but believe they will warrant the extra trouble.

We believe by this method we can grow corn for a longer period of time on the same soil than would be possible with corn alone, for there is a marked increase in fertility where the beans are grown, over land growing corn alone, provided of course that the beans have been inoculated with the proper bacteria, either by the pure culture, or by the application of inoculated soil from an old soy bean field.

In this section, corn is indeed king and anything which will help to increase the amount of corn that can be grown is worth of a thoro trial.—E. P. Bechtel, Montgomery Co., Pa.

(Editors' Note.—We gladly publish the above article because we firmly believe that the soybean will be found a valuable addition to the general farm crops in the corn sections. There are, however, certain statements in this article to which we do not fully subscribe. We also doubt the advisability of planting the beans with the corn either for highest production or greatest economy of labor. We shall be glad to have others write us their experience in raising soy beans, since the practical knowledge thus gained is worth more than volumes of speculation.)

Cultivating Soy Beans Sown in Drills

THE MODERN FARMER AND POLITICS

(Continued from Page 1.)

action. There is need of it if they are to remain free men. A free country is a place where there are no slaves. New York farmers must not be slaves to drink, money or political power. The New York Federation of Agriculture stands for righteousness in public affairs; right dealings between man and man, and a square deal for all. Its membership has frankly stated that it will expose and oppose maladministration of public affairs, and especially such as relate primarily to farming. Handicapping the farmer increases the cost of food to the consumer. Using public offices which deal with food production as sinecures for politicians is intolerable today if "food will win the war." Telling farmers' organizations that the men they designate to direct agriculture cannot be appointed because "the job is promised" but that barbers, cigar packers, locomotive firemen and prison workers, who never saw a farm, are fit to direct the work of food production and solve the farm labor problem in New York has caused the farmers to arise and say "Away with such." "Such merely hinder production." And the only way to arouse the public to its sense of duty to the farmer is for the farmers to unite and stand together. Then they will command the respect of their fellowmen; not before. That is why the New York farmers are developing a Federation of Agriculture broad enough so that it will exclude no farmer, and on a foundation so true and with principles so just that it will command the attention of all.

NEW PRACTICES

The rising cost of grain feed has emphasized the need of better pastures for cattle. Improvement of pastures is the most ready and economical means of increasing animal products without actually increasing the grain feed. It is also a means toward saving labor, for a good pasture is a veritable self-feeder.

Heretofore little attention has been paid to the matter of pastures in this country. A seemingly inexhaustible area of pasture did not encourage conservation and improvement.

We must look to England for guidance in pasture improvement. That country faced the condition of high priced grain years ago, and has worked on methods of improving pastures as a means of feed saving. One experiment, reported by Director Russell of the Rothamsted (England) Experiment Station, shows how milk production may be increased without the use of more grain. A poor pasture was top-dressed with 550 pounds of fertilizer, and the milk production per acre per year was increased 92.5 gallons at a cost of $2.50 per acre per year, or 2.8 cents per gallon. Grain could never produce results like this, especially when we consider that the increase was obtained with almost no labor at all. Establishing and maintaining pastures has received too little attention.

Distribute The Fertilizer

Since corn roots feed in a wide circle about the hill and because succeeding crops can make better use of the fertilizer, the Ohio Experiment Station advises fertilization of all the cornfield rather than the application of fertilizer just in the rows. The corn may start off more quickly if fertilized only in the rows, but its roots later do not tend to spread out as far from the hill as when the plant food is scattered over the entire surface.

Plant roots restricted in their feeding to a small area about the hill may suffer for want of moisture in a period of drouth. Growth is more steady thruout the season when the fertilizer is so distributed that it encourages wider root feeding.

Crops following corn make use of about half of the fertilizer added to corn. Fifty-one percent of the total weight of the increased crop due to fertilizer was realized in the fertilized crop and forty-nine percent in the other crops of the rotation in tests conducted by the Experiment Station at Wooster. Sixty percent of the value of the total increase from fertilizer was realized in the crop receiving the fertilizer and forty percent in the crops following it without any fertilizer.

Small grains, like oats or wheat, which follow corn utilize the fertilizer better if it is distributed over the entire surface. Hill fertilization for corn is evidenced by spots of larger growth of the small grain or grass the next year.

Clover reduces the cost of crop production when it is grown in proper rotation with the cereals, and it can make greatest use of fertilizer applied to corn only when the plant food is scattered broadcast over the field.

A New Drainage Idea

We had a piece of ground about a quarter-acre in area on our place that would grow nothing whatever because of an underlying hardpan that seemed to be absolutely impervious to moisture.

I decided to try the widely advertised idea of subsoiling this plot with dynamite. According to directions, I put down bore holes 15 feet apart and 2½ feet deep and used a quarter-pound of 20 percent dynamite in each hole. The holes were tightly tamped after being loaded with the charges so as to get as wide an area of lateral breakage as possible.

I do not know what results others have had from subsoiling experiments but I can say that there is growing today on that plot a crop of wheat which is doing nicely. No surface water stands upon the ground any more and to all appearances the soil is now in fine condition for growing crops.—Frank A. Huntington, N. Y.

Value of Legumes

A Cattaraugus County, N. Y., farmer on a hardpan hill farm has had the following experience, which demonstrates the importance and value of growing clover for stock feeding. At present, this farmer is not able to grow respectable ensilage corn on his farm, consequently he does not have a silo. But he says, "With plenty of lime I am able to grow good clover and I find it is a money-making proposition." In the winter on a dairy of fifteen good Holstein cows he fed the following balanced ration: 200 pounds gluten, 200 pounds distillers, 100 pounds cotton seed, 100 pounds oil meal, 200 pounds bran and 200 pounds corn meal. He fed on a basis of 1 pound of grain to 3 pounds of milk, plus clover hay but without ensilage or roots.

Results.—When shifting from clover hay to timothy hay with a grain ration and everything else being equal except that timothy hay instead of clover was fed, this farmer's best cow giving 70 pounds of milk per day dropped 7 pounds. His dairy dropped on an average of 4 pounds of milk per day when changed from clover to timothy hay. Figure this up any way you choose and you will find a loss of from $1 to $1.50 per day due to the absence of clover or legumes in this dairy ration.

Three Tons of Clover and Timothy Per Acre on Limed Land That Formerly

To Prevent Crows Pulling Corn

Many plans have been suggested to prevent crows from pulling corn, but the majority of them are quite troublesome to use or are inefficient.

A simple, yet very effective, method which is worthy of more general application is that used by some farmers of Central Pennsylvania. It consists in the stringing of ordinary white cotton twine, such as is used in stores for tying packages, or slender poles about eight feet high. The twine is supported by these poles at frequent intervals and parallel to the rows of corn, to avoid trouble when cultivating, the rows of poles being placed from seventy-five to one hundred feet apart. Small on slender poles about eight feet high. The twine at frequent intervals as a further aid in frightening the crows. The twine should be put in place a few days before the corn comes up and should be kept there until the corn is several inches high, or until the crows will no longer bother it.

A Montgomery Co., Pa., Rural School Building

To those who have never seen this plan in operation it may seem ridiculous. Its principle of operation seems to lie in the fact that the crows suspect it as being a trap and religiously avoid it. Its utility lies in the fact that it works. If you have had trouble with crows, try it.—C. E. M.

The Choice and Use of Fertilizers

Fertilizers are expensive now and they will be high in price for a good while to come. This fact brings a temptation to use them sparingly or, perhaps, not use them at all. But because of the pressing need for large crops and, as far as the average farm is concerned, the necessity of using fertilizers to produce such crops, this temptation should be resisted. Under the present circumstances we simply must have fertilizers. Yet, because they cost so much, and the need for their greatest possible efficiency is so great, they should be bought and used with special care.

To begin with, they should be carefully selected. This not only because of the great difference in the character of the fertilizers themselves, but also, what is equally important tho often ignored, because there is a wide difference in their adaptation to various soils and crops, and to the conditions under which they will be applied. It is just as useless to seek for the best brand of fertilizers as it is to try to find the best breed of cows. As certain breeds are better than others in some places but are not nearly so good in other localities, so a brand of fertilizer that is superior in one place may be inferior in another in which different conditions prevail. Consequently, in selecting fertilizers, careful discrimination is required. The natural deficiencies of the land, if any, and the special needs of the crops that are to be grown should be considered.

Waste is to be avoided but the fertilizers should be used in liberal quantities. To a hungry man "half a loaf is better than no bread," but half a loaf may not be nearly as much as he ought to have. A light application of fertilizers will help some but it will not be nearly as efficient in the production of crops as a larger quantity would be.

After the fertilizers have been applied they should be given the best possible opportunity to be useful. This is a point of vital importance. It requires frequent and thoro cultivation of the land. Many a crop that has been well provided with plant food has given only a small yield because of a lack of sufficient tillage, or of tillage at the proper time. The surface soil should be stirred to keep it in good condition as far as retaining moisture is concerned and also to so finely pulverize it as to make immediately available much of the plant food which it contains. Cultivation should also be given to keep down foul plants and enable the crop to appropriate the fertilizers which have been provided for its use.

As far as growth is concerned, weeds can use fertilizers as freely and as efficiently as farm crops and they are not at all backward in taking all they can get. It is true that they sometimes prove useful. Under some circumstances they prevent the loss of nitrates and they furnish material to plow in for the improvement of the soil. But for these purposes there are other plants which can be used to much better advantage. Weeds are natural and inveterate enemies of all our farm crops.—Elliot.

Notes on Potatoes

That thoro spraying will control late blight in seasons of bad infection has been proved many times in the past, and most recently at Aroostook Farm, in Aroostook County, Maine.

In one block where small test plots sprayed be grown, should be considered. Then fertilizers with standard Bordeaux mixture were interspersed with untreated check plots, the average yield on 11 of the former was at the rate of 181.2 bushels per acre, while that on an equal number of untreated plots was at the rate of 143.5 bushels per acre. This was an increase of 37.7 bushels per acre, or more than 26 percent in favor of spraying. These plots received six applications.

Adjoining one of the experimental blocks was a field where spraying was begun earlier, and eight or nine applications were made. It was planted with the same lot of the same variety of seed, fertilized the same, and, except for spraying, received similar treatment in every respect. The yield on the portion of this field immediately adjoining one of the unsprayed check plots was 267.3 bushels per acre. This shows a gain of over 86 and 53 percent respectively.

Nineteen hundred and seventeen was one of the worst blight years in the history of Aroostook potato growing. The results cited above show conclusively that, even under the conditions that existed, late blight can be controlled by a grower who sets out to do the job thoroly. It is a good plan before planting to test some of the seed by cutting them and placing them in a warm, sunny place.

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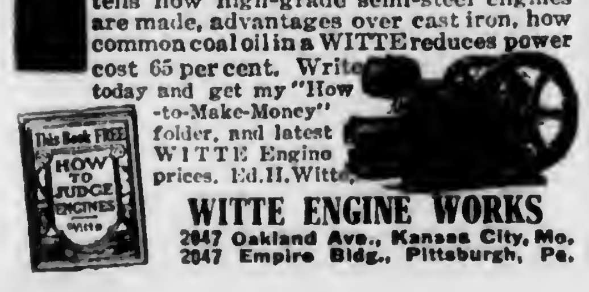
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The Dairy

BALTIMORE MILK PRICES

After an all-day conference between the representatives of the Maryland State Dairymen's Association, Milk Bottlers' Exchange, and the Federal Food Administrator of Maryland, it was decided that a fair price to the producer, for 4 percent milk, f. o. b. Baltimore for the summer months, beginning May 1st, and ending August 31st, be 30 cents per gallon, for the amount equal to that shipped during the months of October, November and December, 1917 and 26 cents per gallon for all over that amount; the latter price to apply to all new shippers. Everyone was of the opinion that there would be a shortage of milk this fall and winter, and to encourage winter production, and to partially take care of the losses incurred last winter, it was thought best to continue the winter price, for the amount shipped during the short season.

It was also agreed that a bonus of at least six cents per gallon be paid, above the standard price, for the amount of milk each producer shipped during the coming months of October, November and December, over the amount shipped during the same months of last year.

Owing to the fact that the prices received by the producers who ship to Washington, D. C., will remain the same, namely 33 cents per gallon for 3.5 percent milk, that the demand in that city exceeds the supply, and that the Washington distributors are going into Harford and Carroll Counties and are taking shippers from the Baltimore market, it was necessary to take some steps to insure an adequate milk supply for Baltimore this winter.

A great many dairymen in Maryland have discontinued their business and a great many more have reduced their herds because the price received did not cover the cost of production. The people are at last beginning to realize that unless a price be paid the farmer that will pay him a profit, there will be a shortage of dairy products.

The dairy industry could be put on a sound and profitable basis thru organization and co-operation between producer and consumer. Meetings could be arranged and the problems of each could be discussed and solved. A meeting of this kind was held May 4th, at Westminster, Carroll County, with over 200 dairymen present, and questions of interest to both producer and consumer were discussed. Dr. H. J. Patterson, of the State Experiment Station, discussed the necessity of increasing the production per cow and lowering the cost of production. He pointed out that Frederick, Baltimore and Carroll Counties have one-third of the cows of the state, and that in view of this it was the duty of the dairy association to study the dairy business and weed out as fast as possible the low-producing cows and to feed an economical and efficient ration.

Dr. Alfred F. Woods, of the State College, explained that Professor McCullom, of Johns Hopkins University, had recently found that there is something in milk which cannot be accounted for by chemical analysis that produces growth, and that children lacking milk in their ration are subject to all the diseases of malnutrition. Dr. Woods said that the adage that meat-eating nations are the leaders of the world was true because they are heavy users of milk and not because they eat a great deal of meat. He also explained that feeding rations too high in protein was notably an expensive practice, but that too much protein tended to lessen the flow of milk.

Senator Wade H. Warfield offered a resolution that the association go on record as unable to produce milk for less than 30 cents. J. F. Maxwell, farm visitor for the City Dairy, presented a resolution from the Bottlers' Exchange in regard to the price of milk for May. In view of the fact that the price from April to September had been agreed as noted above, no action was taken on these resolutions.—D. G. Harry, Harford Co., Md.

MAKING THE DAIRY PAY

Buy Feeds Or Sell Feeds To Cows?

Profit and loss in dairy farming depends in large measure on the system of dairying. In the market milk producing sections of Eastern New York, in fact in all districts supplying the large cities with liquid milk, the dairymen are extensive buyers of commercial feeds, and with the extremely high prices they have been compelled to pay for these feeds in recent years, together with the steadily increasing wages demanded by laborers, there is little left for them after paying feed and labor bills, even at the increased price of milk. These dairymen justly complain that there is little to be made in dairying under present conditions, and in numerous instances are reducing their herds or going out of the dairy business.

There are other dairy sections, however, where the farmers are not complaining of the returns they are receiving from their cows. I have in mind one such district in Southern New York. It consists of several townships located several miles from a railway shipping point. For many years, cheese factories and creameries have provided a market for the milk. The farmers keep just enough cows to consume the hay, ensilage and grain produced on their own farms. Little commercial feedstuffs are shipped in. Recently a condensory has been established in the center village of the district, giving an additional market, and there is a tendency to increase the herds, but this is made possible, not by importing commercial feeds, but by the growing of larger crops.

By following this system, the dairymen are sellers instead of buyers of dairy feeds. They sell their hay and grain, silage and root crops to the cows, at the highest price paid the retailers for western feeds, and do not have to haul them to or away from the farm except in the form of milk.

I believe these farmers have found the most profitable system of milk production. Prices for milk which yield the dairyman with his large herd a profit on high priced commercial feeds will return the farmer in this district not only a profit on his milk but a good price for his hay, corn and other home-raised cow feeds. Until milk prices are sufficiently high to make the feeding of commercial feedstuffs profitable, the logical solution of the dairy farmer's problem would seem to be the keeping of enough cows to consume all the feed that he can produce on his own farm.—E. E. R., New York.

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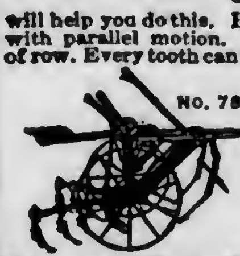
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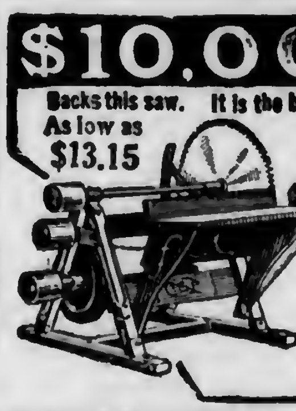
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PLANT ENSILAGE CORN EARLIER

Where only home grown seed corn is planted, it is proper practice to put the latest maturing corn into the silo. It is an expensive mistake, very generally made, to plant the ensilage corn last. This year especially, it should be planted first. The small supply of home-grown seed in the northern states should be supplemented with strong germinating ensilage seed from further south. This ensilage seed should be planted two or three weeks earlier than the home-grown seed.

After several years of testing, the Office of Corn Investigations has established the following fact which should be utilized by dairymen and ensilage corn growers of the northern states. When large ensilage varieties from Virginia, for example, are planted in the northern states late in May, they make a rapid, long-jointed, tender, succulent growth and are so green when fall frosts occur, that they make ensilage which is sloppy and too sour. But when planted very early in May they make a slower, hardier growth, better withstand spring frosts and summer droughts, reach a more advanced condition of maturity and produce more grain than when planted later. Fall frosts, not spring frosts, are most to be feared.

Early maturing, home-growing varieties do not need and are not benefitted by unusually early planting, but ensilage varieties are benefitted. Altho dwarfed and ripened by the early planting, the large ensilage varieties will by nature make ample stalk growth and a richer, sweeter silage because of being planted early. It supplies the days they need for maturing.

Altho by the fourth of July, June-planted corn may be as large as corn planted in early May, when fall frosts occur it will be composed mostly of water and not in as good condition for siloing as corn planted early in May. The early planted corn requires early and frequent cultivations to warm and dry the soil surface. In the northern states if the soil surface in May is wet it is also cold, and the corn cannot grow. Stirring causes the surface to dry rapidly, absorb heat, feel warm to the hand, and the corn will grow; while uncultivated soil nearby will be cold and the corn at a standstill.—E. P. Hartley, In Charge of Corn Investigations.

BUTTER CAMOUFLAGE

Commercial devices for mixing milk with butter to make the latter "go farther" should be regarded with caution and used only with the full knowledge that the sale of the resulting product as "butter" is unlawful. The U. S. Food Administration has observed with regret the activity of agents and others who have taken advantage of war conditions to exploit butter "mergers" as the mixing devices are called.

To make a high-class butter having satisfactory keeping qualities, a dairy specialist of the Food Administration points out, good buttermakers remove the buttermilk by thoro washing. If the housewife mixes milk of any kind with butter, except of course for cooking or immediate use, she is simply undoing what the skilled buttermaker has taken pains to accomplish. Such a product soon becomes sour in warm weather and wastes the butter it contains.

Where the housewife wishes to "extend" butter by incorporating milk, cream or other liquids with it, waste may be prevented by mixing just enough for a day's requirements, and for such quantities a rotary egg beater or even a spoon is sufficient equipment. Any mixing process is of course purely mechanical, adding nothing to the food value of the ingredients and because of the excess moisture contained in the merged product, it is officially known as adulterated butter. It may be lawfully used in private families, but heavy penalties are attached to its sale when offered as "butter".

The results of butter merging are largely psychological. To the eye the process appears to have converted milk into butter. But war-time economy suggests that the milk and butter be consumed separately in the usual manner, allowing the digestive system to do its merging in the natural way.

Oleo Production

Bureau of Markets reports on butter and oleo production for February, 1917 and 1918 were as follows:

	Pounds
Creamery Butter.—	
2,280 plants, Feb., 1918 ..	28,502,332
2,280 plants, Feb., 1917 ..	26,446,616
Increase, 1918, (7.77%) .	2,055,716
Whey Butter.—	
190 plants, Feb., 1918 ...	407,549
190 plants, Feb., 1917 ...	383,140
Increase, 1918, (6.37%) .	24,409
Process Butter.—	
24 plants, Feb., 1918 ...	1,665,968
24 plants, Feb., 1917 ...	1,522,045
Increase, 1918, (9.45%) .	143,923
Oleomargarine.—	
All factories, Feb., 1918 .	36,488,419
All factories, Feb., 1917 .	21,546,042
Increase, 1918, (69.35%) .	14,942,377

Of this amount purely vegetable oleomargarine comprised 9,652,041 lbs. in February, 1918, against 608,330 lbs. in February, 1917.

VIRGINIA ENFORCES NEW TUBERCULIN ORDER

To further protect the dairy and breeding cattle from tuberculosis, the Virginia Live Stock Sanitary Board has determined to require that all cattle six months old and over imported into Virginia for dairy or breeding purposes shall be immediately placed in quarantine upon reaching their destination, to remain so quarantined until tuberculin tested not earlier than 60 days nor longer than 90 days after their arrival in this state. This quarantine is automatic upon arrival of said cattle at their destination. The testing will be done by the State Veterinarian or by a deputy designated by him. The services of veterinarian will be free to the cattle owner. The order becomes effective July 1, 1918.

It is well to remember in these days of increasing building costs that fire insurance which was adequate a few years ago may be woefully inadequate now. It isn't what it cost originally to put up a building that counts in figuring on your insurance, but what is costs to build it now.

Plan to fill your silo to the brim and build another if you can. Dairymen are just beginning to know that silage is as good in summer as in winter and often can eke out unsatisfactory pasturage.

Plan Now For Greater Conservation Of Grains

Saving your grain to sell is doubly important this season—for the nation and for yourself. The more grain you can raise and sell the better fortified will the nation be. By using *more ensilage* and proportionately less grain feeds, you will make more money with which to *buy Liberty Bonds* or improve your farm for still greater production next season.

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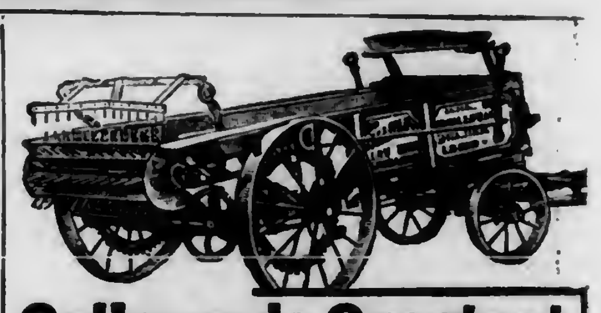
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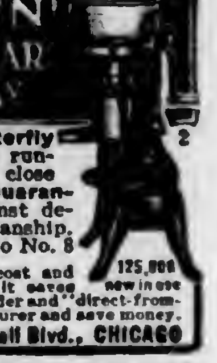
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Pennsylvania Farmer

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PHILADELPHIA, PA., MAY 18, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

Your Insurance

Do your fire insurance policies cover the present value of your property? Many farmers continue their fire insurance policies in force over a long period of time without change. In case of fire the insurance must be used to rebuild and refurnish, not at past prices, but at the cost of materials today. There have been striking price advances on all materials in the past few years, and an advance in your insurance valuation now may save money and much worry later.

* * *

Sugar Restrictions

at least two features in the Food Administration order restricting the use of sugar after May 15 will meet with general approval among farmers. The primary purpose of the restriction is to make sugar available to housekeepers and the manufacturers of essential foods. The ruling should insure about the normal amount of canning of fruits and vegetables, not only preserving these for future use as food, but also making a larger outlet for what the farmers produce. In order to make sugar available for these uses, the Administration has placed a limit on the amount available for the manufacture of candy and soft drinks.

The second favorable feature is the exclusion of ice cream from the restricted articles. Sherbets and water ices will be restricted, but in recognition of the food value of ice cream, and wanting to insure the consumption of at least a normal amount of the surplus milk and cream supply, the authorities have left ice cream on the unrestricted list. Some dealers have used the prediction of a restricted ice cream trade as a club to lower prices on summer milk. The Administration ruling removes the possibility and opens a way to a larger consumption of the summer surplus.

* * *

Over the Top

The Liberty Loan drive went "over the top." Final figures are not yet available, but it is certain that the loan was over-subscribed, with considerable to spare, and that a larger number of people bought bonds in this drive than in either of those preceding. It is unofficially reported that over 17,000,000 subscribers are enrolled. Small subscriptions by large numbers will mark the start of a campaign of saving that will be of lasting benefit to the individuals as well as to the country in the emergencies to be met in the next few years. They also indicate a general spirit of personal sacrifice to the needs of the country that augurs well for the future. The glowing reports of the farmers' subscriptions are not at all surprising to those who know the farmers, but they should silence for all time the half-baked criticisms that were being made. There is a thrill of accomplishment in "going over the top" in any undertaking. There will be many tops to be crossed in the months to come, but each success gives strength and inspiration for the work ahead. The unity of spirit demonstrated in this last drive will go far to help in other drives of whatever character. The purchase of bonds is a small service when compared with what our boys are doing "over there" and in the preparatory camps here. But the knowledge that over 17,000,000 supporters are saving and sacrificing at home will give new strength to the two millions forming for sterner work at the front.

* * *

By Way of Remembrance

We quote below part of a paid advertisement which appeared in the papers three years ago as a part of the campaign of education waged by the Philadelphia Brewers' Association entitled "Facts vs. Fallacies." At that time it was considered good argument to show the immense amount of grain and food material which the distilllers and brewers used in their products, and how the immense sums paid helped the farmer. At that time there was no food scarcity, but in these times their arguments lend emphasis to the demand that the business of converting grain into alcohol be stopped. It is interesting to note that the liquor men claim now that but a small quantity is used in this way. The brewers said:

> "What the liquor industry means to the farmer can be appreciated, when it is shown that in 1913 grain and other farm products to the enormous value of $133,513,971 were used in the manufacture of liquors; and this was the actual amount received by grain growers, not counting the largely-increased value and profits reported in the markets of Chicago and other distributing grain centers. This $113,513,971 worth of farm products, used in the production of distilled spirits and fermented liquors, consisted of barley to the value of $55,236,641, corn $30,924,335, wheat $869,938, rice $7,288,786, hops $11,155,215, rye $4,604,476, and other products of the farm to the value of $3,433,580. * * * The American farmer is not wanting in resourcefulness, but is it not a FACT that it would cause him grave embarrassment and heavy financial loss for products that annually return him $113,513,971 cash for his labor if the FALLACY of Prohibition were to become a law?"

The same brewers are now minimizing the effect of their industry on the supply of food products. We give their figures here as an interesting reminder.

* * *

A Bean-Stalk Proposition

The Department of Agriculture has issued a bulletin, Circular No. 107, intended to greatly stimulate the raising of poultry this year. The slogan is, "One hundred hens on every farm—one hundred eggs from every hen." The writer starts out with the general plea for more food and states that, "Meat is one of the most essential of food products." The calculation is then made showing that 100 hens on every farm would mean a total of 600,000,000 hens in the country, and if each hen laid 100 eggs per year we would have a production of sixty billion eggs, or five million dozen; more than four times the present production. Surely, that would be going some.

If this ambitious program should be carried out it would mean that we would have about three times as many hens as now. It would mean that we must raise twelve hundred million chicks to maturity, since one-half would be males. To get this number it would require that about 300,000,000 dozen eggs be set, or one-fourth as many eggs as were produced during the past year. The argument is presented that 100 hens could be kept on every farm, chiefly upon the table scraps and other wastes of the farm. Surely, the writer has little confidence in the effectiveness of the Food Administration's conservation advice.

It has been our experience that the raising of enough chicks to secure 100 hens, and the keeping of that 100, required something more than water, fresh air, sunlight and bugs. The expansion of any business beyond reasonable limits is an economic blunder, and if this program could be carried out there would be less food in the country one year hence than now because of the immense amount of grain required to bring it about—a food value which the poultry and eggs would not equal. This is evidently another case of a lead pencil getting beyond the control of a writer.

* * *

Why Non-Essentials Must Go

The amount of labor and other means of production available are the limiting factors in the creation of wealth and human necessities; and if it shall be reduced to one factor, that one is labor. Since we have been wont to rest in security and peace of mind because we have had an abundance and to spare in this country, we are brought up with a jerk upon realizing that a few months of war have put us in a position face to face with actual want in many respects. People are already beginning to feel the pinch and are unable to understand why, with all our great wealth of natural resources, we may not continue to have all the necessities, if not all the luxuries. Some even complain about the proposed curtailment of non-essentials. Let us look briefly at a few facts and figures that we may see what it is that limits our ability to go on living in the way in which we have been accustomed.

There are two accredited way of supplying our needs and increasing our wealth: One is the direct creation of wealth by applying labor to convert natural resources into human necessities; the other is by making a profit on the trade and commerce with other people or nations. Previous to the war we lived in prosperity and plenty because we had the natural resources, labor and other means of supplying ourselves with everything we needed. But perhaps we did not realize how little more than this we were doing. Our foreign trade figures show us that, with all our work and hustling, with all our enterprise and marvelous development, aside from making permanent improvements, we were living up to our income so far as production was concerned. In fact, our exports exceeded our imports by about the same ratio for the past 70 years, up to 1914. This excess varied from 400 million to 650 million dollars annually between 1900 and 1913. But since the war began the demands of the allies for necessities have been increasing at a wonderful rate so that in 1917, the excess of our exports over imports was $3,634,450,000, or five and one-half times as much as it was in 1913.

When we consider that we were called upon to produce this immense increase in amount of goods and material in addition to maintaining ourselves, and at the same time are required, by our participation in the war, to produce billions of dollars' worth of ships, munitions and equipment, and at the same time take two or three million men from the ranks of producers, is it any wonder that we are facing the necessity of giving up the use and production of non-essentials? To continue as in the past is simply a physical impossibility. But what things shall we eliminate?

It is probable that the natural law of economics will automatically work out a solution in regard to most things. But the greatest single extravagance is the manufacture and use of intoxicating liquors. It is not to be expected that the same laws will work towards the elimination or reduction of this non-essential as with other things, because, first, it is usual for drinkers to sacrifice everything else before they give up liquor; second, those engaged in its traffic are fighting tooth and nail to maintain the business. This is one non-essential which must be eliminated by law.

HARRISBURG NOTES

Wheat Crop Backward.—Preliminary surveys of reports which have been made to the State Department of Agriculture indicate that the condition of the wheat in Pennsylvania is below that of last year at this time, both as to acreage and quality and, while there are hopes that it may improve, people in touch with the situation do not look for any yield like the 26,000,000 bushel crop of 1917. Some of the reports show that the condition is eighty percent below the normal at this time of the last ten years and fields have been plowed down and prepared for corn. The chief difficulty appears due to the fact that the wheat was sown late and the winter came very early. There has been a tendency to sow as late as possible to keep down the fly, but the unusually early advent of severe weather caused trouble. The rye seems to have survived the winter better than the wheat. From all accounts farmers will sow less wheat next fall. The acreage to be given to corn in Pennsylvania this year is going to be immense.

After Horses.—From all accounts there is quite a drive under way for Pennsylvania horses and mules for army and construction use. The military demands do not seem to be any less in spite of the large purchases made in the last year and it is feared that at present prices there will be a drain on the animals of this state right at the time when they are most needed. A number of buyers have been going about getting options on animals for late summer delivery because they can not get them for immediate shipment.

Consolidated Schools.—The subject of consolidation of schools which has been looming up on the educational sky for some time has reached a point where something has to be done and a survey has been started. The conditions in rural districts in some parts of the state are of such a character that they call for consolidation, altho it is recognized that it has its disadvantages, especially in the matter of transportation. Some districts, thru lack of resources, are hard put to provide the required term, to purchase supplies, to keep teachers in the face of the more attractive salaries offered in industry and even to make improvements. The prices of material and labor have paralyzed many plans for improvement of rural schools. The question of state aid for the rural district and a change of the whole system of apportionment of the public money for this purpose will have to be met next winter by the legislature.

The Retirement System.—The Legislature will not only be called upon to make a substantial increase in the amount to be allowed for education on a new basis, but to help launch the teachers' pension system. This project is coming very much to the front and hundreds of thousands of dollars will have to be given. State revenues are increasing and the sum of $10,000,000 in the balances indicates that war time is not hurting the commonwealth.

The Campaign Lags.—In spite of the speeches of aspirants and the multiplicity of statements by rival leaders, the people of Pennsylvania are not losing sleep over politics. Indeed, with the campaign entering upon its last ten days, candidates are commencing to warn against apathy and lack of interest, which is a sure sign that the voters realize that this year's primary campaign is little else than a quadrennial struggle in each of the major parties for control of the organization and that it is of extremely minor importance when war is on and the workers and farmers are striving to back up the men at the front.

The Bureau of Markets.—Some people are puzzled as to why the state administration allows the bureau of markets places to be vacant so much when the claim is made that the bureau is so valuable. The place of chief, held for some troublous months by E. B. Dorsett, who is still unpaid for his work, is vacant and J. Wallace Hallowell, Jr., of Philadelphia, has just been succeeded by Miss A. Lippincott, who was with the federal bureau after serving in the Philadelphia city government.

Less Cattle Trouble.—While the comment is frequently made that Pennsylvania is slow to improve the breeds of cattle, there is no question about an effort being made to increase the herds. There have been reports coming here that indicate that farmers are alive to the chances for grazing and that there have been increases both of beef cattle and sheep and a marked increase in hogs. The state authorities claim that there has been a gratifying decrease in serious cattle diseases and that vaccination and strict adherence to quarantine regulations are bringing about a decline in the cases of hog cholera especially. Some of the claims are to the effect that farmers are insisting upon statements of health and general condition before buying hogs at sales, which has been urged for a long time.

State Roads.—The whole state road proposition is getting into a position where some hard and fast rule to govern during the war will have to be laid down, in opinion of some observers. County authorities are cutting down their road work and in many townships not much will be done this year. Meanwhile the state is distributing three quarters of a million dollars to second class townships and big sums to the credit of the Highway Department are piling up in banks.—Hamilton, Harrisburg, Pa., May 13.

NEW YORK LETTER

Bird Protection.—Governor Whitman has signed a bill making it lawful for any person to humanely kill a cat seen hunting game birds, or with dead game birds in their vicinity. This is the ultimate form of the proposal to enforce the wearing of bells by all cats.

State-Wide Milk Campaign.—Syracuse is to take the lead in a state-wide campaign to increase the consumption of milk as a food. The Farm Bureau, the home demonstration agents and the home economics teachers of the university will co-operate in the effort which will be launched directly after a big exhibit of milk foods at the Grand Central Palace, New York City, the week of May 20th. Representatives from all over the state will attend this big demonstration, which has the support of the federal authorities. With milk falling off in consumption, a big surplus on hand now and likely to increase thruout June, milk conditions are serious. Immediate action is deemed necessary to promote the use of milk in order to preserve the industry. Prof. Rider of Syracuse University is actively engaged in the cause, and makes striking facts very clear, chief of which is that there is no food today so cheap as milk or so perfect and one ready to use at once, with absolutely no waste. Other dairy sections are planning to co-operate in this movement which will hereafter have Mr. Hoover's emphatic support. The Syracuse committee is trying to fix the responsibility of placards on exhibition in hotels and restaurants asking for conservation in the use of milk. The state and federal officials deny authorizing such sentiments as foreign to their standards of conservation.

Sheep Breeders Co-operate.—Tompkins County has a live Sheep Growers' Association which will sell the wool of its members co-operatively. A committee will call for bids, and cash payment will be demanded. Seneca County will follow a similar plan, and the sheep growers of Cortland County are about to organize. At a recent well-attended gathering of sheep owners in Cortland, F. E. Dawley, a leading sheep man of Fayetteville and now state inspector, gave a talk on the dog laws. Cortland County alone has lost over $1,500 worth of sheep by dogs within the past year. W. F. Smith, a sheep expert from Cornell University, who is doing much for the industry in the state, made an address, showing the best types to choose for this state, where he says wool growing will be a side line in the future, with mutton raising the chief aim. There are but half a million dollars' worth of sheep in the state now as compared with over six million at one time. A good deal is being done, so far with fair success, to bring back sheep to our farms.

Boys Must Drill.—In compliance with the terms of an amendment to the state military training law just signed by the Governor, boys between 16 and 19 years of age must attend drill and perform military duties, else he cannot secure the certificate necessary if he is to attend public or private school or obtain employment.

Onondaga Wheat Report.—Onondaga County is the state's leading agricultural county, and its report on the wheat situation is bitterly disappointing to Farm Bureau workers and farmers with big acreages of winter wheat. Many farmers have suffered large financial loss by the total failure of the crop—it having winter killed. The trouble is due to late sowing and subsequent slow growth caused by bad weather conditions last fall. An elaborate investigation made by the Farm Bureau shows over 50 percent of the planting a total loss.

Federal Policing.—The War Department has taken over the policing of certain sections of New York City because of the dangerous conditions as affecting the welfare of soldiers and sailors. It is not the intention to take over the entire city unless there is a failure to get results from working in co-operation with city authorities. This is the beginning of broader action in such cases by the War Department.

Help Problems.—One detachment of New York City high school boys, some of them with experience last year, has been placed on Cortland and Tompkins County farms, and more are being arranged for. These boys are from 16 to 21 years of age, and most of them learn the work quite satisfactorily. It is harder to get city boys this year for farm work for the draft has taken so many city men that boys are offered higher wages in the city than farmers can pay, and only patriotic reasons influence most of them to choose the country work. Many Wells College girls will work on Cayuga County farms—about 40 working the college farm. About 1,500 boys in all will leave New York City for farm work within the coming two weeks.—F.

NEW JERSEY FARM NOTES

Lower Milk Prices.— A wholesale price which will net them a much lower price per quart for their milk during the spring and summer has aroused the farmers of Salem and Cumberland Counties in South Jersey who have large dairy herds. After fighting for months for what they claim to be reasonable prices, in view of the high cost of labor and feed, there seems to be a slump in the wholesale prices. The result is said to bring cheaper milk, but really little benefit to the consumers. There have been meetings of the Milk Producers' Associations, organized during the heat of the fight for the higher-priced milk, to discuss the present situation. The associations at Woodstown and Shiloh, which have the largest memberships in the region, at recent meetings reported that farmers are still selling off milk cows and young heifers to the butchers because of the unpromising outlook for milk prices.

Asparagus Cheap.—Recent reports from Swedesboro are to the effect that consumers will be able to obtain asparagus at a lower price this year than for a half a dozen years. The crop will be very large and because of shipping conditions growers will have difficulty in sending it to distant markets.

School Farm Census.—The farm census in Somerset County has been completed. Out of 55 school districts, reports were received from 35 and they show that 70 farmers are in need of additional labor for the summer; 89 farmers lack enough labor for the entire year and 195 farmers need more labor for a short time. The number of persons hired for the entire year reported is 259; yet to be hired, 77; hired for the summer, 124; yet to be hired, 87; for harvesting, 86; yet to be hired, 228.

To Prevent Fires.—Because the woodlands thruout the state are in an abnormally dry and inflammable condition at the present time, they are very subject to the spread of fire, if the smallest spark is allowed to have access to them, the Department of Conservation and Development has warned. State Fire Warden C. P. Wilber has therefore urged that there be no delay in any burning for clearing land, disposing of rubbish or any other purpose, near the woods, until after the next rainfall. It is further declared that, at this time, no one should start a fire in woodlands.

State Crop Report.—The latest crop report of the State Department of Agriculture says: "Experienced farm labor continues scarce. Severe winter weather together with a lack of packing and wind protection resulted in a loss of 26 percent of bee colonies. The same causes are responsible for the lowered condition. Reports from correspondents indicate some reduction in potato acreage this year, and some increase in the acreages of corn and tomatoes. Egg production for April shows a slight advance over that for March."

Cold Storage Holdings.—There were 233,800 cases of eggs in cold storage in this state on April 30 last as compared with 11,771 a month previous; 487,050 pounds of broken eggs, compared with 422,685 on March 31; 298,420 pounds in milk and milk products as compared with 288,120 for the previous month.—Lanning.

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with this Pipeless Furnace

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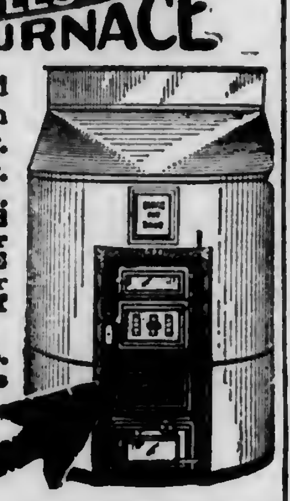

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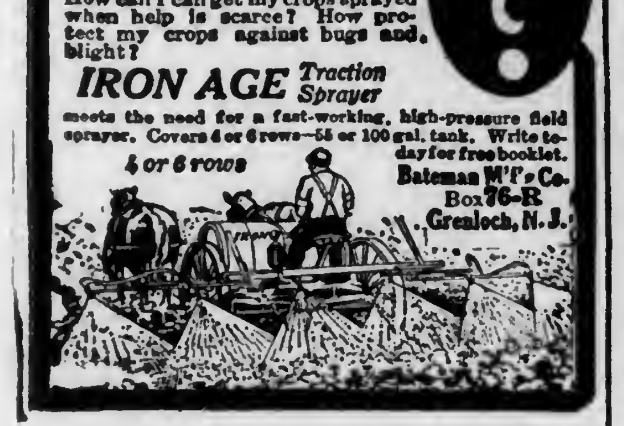

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—a new combination which bids fair to replace the old Lime Sulphur-Arsenate of Lead and Bordeaux-Lead mixtures, in both orchard and garden.
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Horticulture

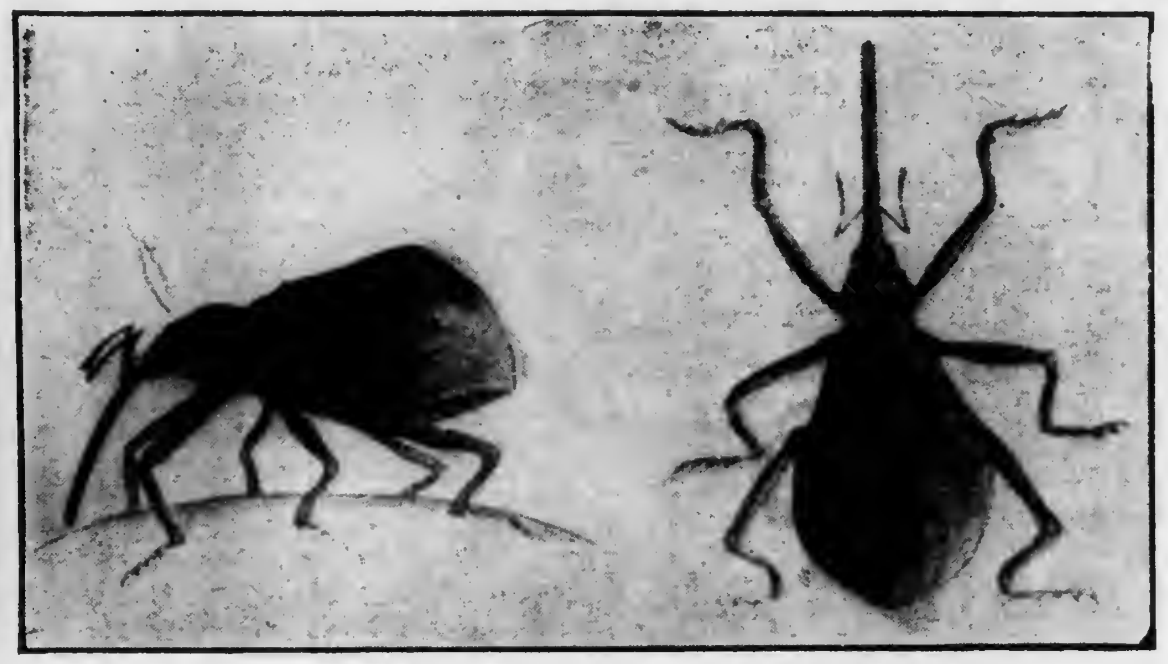
Timely Fruit Notes

By J. P. STEWART

Lime-Sulphur Solution on Peaches

"Is it permissable to use commercial lime-sulphur for brown rot on peaches instead of self-boiled? If soo, in what proportions."—T. P., Bucks County, Pa.

Replying to this inquiry, I would say that it is possible to use lime-sulphur solution alone, that is, without combination with any arsenical, on some varieties of peaches, if diluted sufficiently. I have therefore advised it occasionally for the final application on account of its much greater ease of application, relative cheapness, and freedom from stain on the fruit. When so used, however, it should not be applied stronger than a density of 1.003, which is obtained by diluting the best commercial materials at the rate of about 1 to 100 and the average home-made solution at the rate of about 1 to 80.



The Apple Curculio—Greatly Magnified

Cherry Plant Lice and Pear Blight

"I have several young cherry trees the leaves of which are polluted with insects on the under side. These eaves curl up and die. Would like to know just what to do to rid the trees of these pests.

"I also have a pear tree, the leaves of which are turning brown and the branches dying. There seems to be no insect visible."—D. R., Franklin County, Pa.

The difficulty with the cherry tree is probably the cherry plant louse. If the leaves are badly curled and the trees are relatively small, the best means of control are to dip the infested foliage in a solution of whale oil or white laundry soap, made up at the rate of 1 pound in 5 or 6 gallons of water. The solution may be carried in a pail and the tips of the young trees should be carefully bent over and held in the liquid long enough to wet all the lice.

In the case of the pear tree, the trouble is evidently fire blight. This is a bacterial disease and the only satisfactory method of control is to cut out all infested twigs at least 8 or 10 inches below the external evidence of the disease and disinfect both the tools and cuts with a solution of corrosive sublimate, made up at the rate of 1 tablet to a pint of water. Where the number of trees is small, it will also be advisable to gather up the diseased twigs and burn them.

Dry Lime-Sulphur For Spraying

"A commercial spray company has placed on the market and is highly recommending a dry lime-sulphur compound. Can you give me some information as to the reliability and effectiveness of this new product? Is its chemical composition the same as the standard liquid lime-sulphur? Are the proportions recommended correct, namely, 10 to 12 pounds to 50 gallons of water for dormant spray; 3 pounds to 50 gallons of water for summer spray on apples, pears and quinces; and one to one and one-half pounds to 50 gallons of water for summer spray on peaches? Is the regular proportion of one pound of arsenate of lead powder to 50 gallons of water per acre of potatoes or for apple tree spray correct?"—T. D. A., Bucks County, Pa.

We have made some tests of the dry lime-sulphur put out by the company named, but they have not yet been sufficient to warrant a definite opinion concerning it. The principle involved is undoubtedly good but the samples that we have received have not been as readily soluble as they should be before giving them full approval.

In fact, the materials that we have had, when made up in the proportion of 10 or 12 pounds to 50 gallons of spray, have not given a solution of more than half the density that it should have in order to correspond with the ordinary liquid lime-sulphurs at scale strength. It is possible that the proper density would have been obtained if all the material had gone into solution, but it is doubtful if more than half of it has yet dissolved either in cold or hot water. I believe, therefore, that it is advisable to stick to the liquid concentrate for at least another year.

From our limited tests of last summer, I would not recommend the dry material for use as a summer spray on peaches at any length, as we obtained rather severe burning from it even at the dilution of 1 pound to 50 gallons. The burning did not show up at once, but it developed very decidedly shortly after the first rain. I would also not advise the use of any of the sulphur sprays on potatoes, as bordeaux mixture has generally proved most satisfactory on them.

THE APPLE CURCULIO

The apple curculio is one of the three very common pests which attack and destroy the fruit in the east; the other two being the plum curculio and the apple weevil. The plum curculio is perhaps even more numerous and destructive to apples than the real apple curculio. However, their appearance and habits are very similar and methods of control, insofar as they can controlled, are about the same. The apple curculio is a reddish-brown snout beetle, and may be distinguished from its relatives by its four distinct humps on the rear end. The female is about one-fourth inch long and the male a little smaller.

The beetles live over winter in grass and rubbish and appear upon the trees after the petals fall. They begin to feed upon the little apple as soon as it is as large as a pea, eating out a cavity as deep as the snout is long. Growth is stopped in that part of the apple, a knotty formation develops and, if the apple does not drop, it becomes lop-sided.

The female loosens a little of the skin, eats out a small cavity and deposits her eggs there. The opening is covered and when the egg hatches the young live by eating the pulp inside. Since most such young apples fall, the larvae are thus provided with a resting and growing place until next season when they emerge fully developed. Spraying with arsenical poisons is of little avail, since the beetle eats little or none of the skin of the apple.

Shade and moisture are necessary for their development. Exposure to sunlight is fatal to the young larvae, and this offers the only practical method of combatting them. The dropped fruit should be removed from under the tree and either destroyed or left unprotected in the sun. Clean culture also tends to discourage their growth. Persistent care in these directions offers about the only practicable methods to date.

Garden and Truck Crops

TIMELY TOPICS

Cultivating Potatoes

The potato growers who usually have the most profitable crops cultivate their potatoes three or four times, harrow them once and go over them once or twice with the weeder. The fellow who has no wood pile when spring opens is usually "too busy" telling about his hard luck to give his money crops the attention they should have in order to make them profitable.

Training Pole Lima Beans

After the pole lima beans are past the danger of being destroyed by the cut worms, it will be a small task to go thru the field with a trowel and carefully take up the extra plants and transplant them to those hills which may have no plants. If the growing weather is good it will take but a few days for the runners to start; therefore, the thinning should be done before the runners are large enough to interfere with quick work. Two plants to a hill are plenty while excellent growers claim they would just as soon have but one. Training the runners to the pole is quite a task and much of this work can be saved if the grower will remember to favor those plants on the side of the pole from which the prevailing wind comes. This inclines the runner towards the pole

so that a much larger percentage of them get started on the right course without special attention. Another excellent idea is to run a stout string from one end of the row to the other, having it just high enough so that it can be easily reached. It is held in place by passing it once around each pole. When the runners get as high as this string most of them will follow along it, so that it will furnish additional support for bearing vines and keep all poles exactly in their places no matter how heavy the vines become.

Cutting Asparagus

The asparagus season is now in full swing. The Philadelphia and Baltimore markets are oversupplied and because of the very poor transportation conditions, asparagus which is shipped to distant points may not reach its destination until it is unfit for use. When marketing conditions are so poor, it may be well to consider the best ways of holding the cut product in good condition. By all means the asparagus should be cut very early in the morning while it is cool. Then it should be gathered at once and transferred to cover where it can be kept cool. As soon as possible, it is bunched and cut off at the butt end. Most growers stand it in shallow pans containing a half-inch of water so that it will remain plump. This practice is alright, but few realize that these pans should be in a very cool place. If it is warm the asparagus will actually continue to grow. However, the quality will rapidly deteriorate as the stalks throw moisture off into the air and take up more water. By keeping the pans in a very cool place this transpiration and growth will be much slower and the quality will remain "fresher." Furthermore, the cooler the "grass" is when it is shipped, the better it will carry.

The destructive beetles at this season are busy depositing tiny black eggs on the asparagus shoots. Any crooked or otherwise worthless stalks that are allowed to remain growing will soon become actually covered with these eggs. Therefore, it is very apparent that every shoot should be removed from the field if the infestation is to be reduced.

Carrots For Winter Use

Carrots are very easy to grow and yield from 300 to 800 bushels per acre. The Chantenay variety is used for bunching as it is the most desirable shape. Danvers Half Long will outyield it and is therefore more generally used if the product is to be sold by the bushel. Unfortunately, the foliage blights and defoliates the carrots if they are planted too early in the spring. Late in the summer the blighted carrot will develop a new top and an enormous amount of root hairs. Furthermore, this blight sometimes affects the crown of the carrot so that it has a tendency to decay in storage. Most of this trouble can be avoided by planting early in June those carrots which are to be stored for winter use. One thing about carrots worthy of consideration is that, if they do not sell readily, a barrel of them is practically equivalent to a bag of grain as horse feed.—R. W. DeBaun.

Government estimates indicate that there were 150,000,000 bushels of surplus potatoes to be used up before they wasted this spring.

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As a war measure, Mount Sinai Hospital School of Nursing is entering a special class, June 15th, 1918. Recognizing the need for additional nurses for military and civilian purposes, the Mayor's Advisory War Committee of Cleveland, and the Western Reserve University have made this Course possible, the former, by supplying the funds, and the latter by offering its facilities for a ten weeks' course in theory. Students will live at the hospital which is in close proximity to the University. No tuition will be charged for the course at the University. Living expenses will be met by the Hospital.
This plan offers unusual opportunities to qualified young women wishing to serve their country. Applications should be made at once to Miss C. A. Wheeler, Principal of Mount Sinai Hospital School of Nursing, 1800 East 105th Street, Cleveland, Ohio.

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Poultry

SCALY LEG CAUSES LOSS

Scaly leg of poultry is a common and well-known affection of chickens that sometimes causes affected birds to become worthless. It is caused by an extremely small mite that works in and under the crusts that form on the legs. Caraway or sulphur ointment will kill the pests.

Scales form at the point of invasion of the insect, and under them the skin is irritated and bloody. Badly affected birds walk with difficulty and may even lose a toe; later they become thin, lose their appetites and prove worthless.

The disease is slowly contagious, and for this reason a quarantine pen is desirable on the farm so that purchased fowls may be treated for parasites and watched for any contagious or infectious disease.

Beginning Early

To treat scaly leg the feet and legs of affected fowls are held in warm water for several minutes, so that the crusts are softened and can be removed. A mite killer is then applied to the dry diseased surface. The Ohio Experiment Station recommends the following mixture: (1) Oil of caraway mixed in four times as much lard or vaseline, and (2) flowers of sulphur, one dram; carbonate of potash, 20 grains; and lard or vaseline, half an ounce.

Some poultry have used a mixture of one part of kerosene and two parts of raw linseed oil with speedy effect. The legs of the affected fowls are dipped in this mixture, care being taken that the feathers are not wet.

A CHEAP PORTABLE FENCE

Most poultrymen find portable fencing very necessary and useful, especially during the spring and summer months when it is desired to fence a flock of chicks around a brooder for a few weeks, or fence the flock of young stock about the colony coop for a short time until they become well enough acquainted to return to their coop when given freedom.

The usual type of portable fence is the panel kind made to hook together. Such fence is very cumbersome to handle and unsatisfactory because it does not work well on rough ground. The panels also require considerable space when stored.

The cheapest and most satisfactory type of portable fence we have found consists of a roll of ordinary poultry netting, large pointed stakes and some small pegs. Stakes made of one by two stuff are best. They should be sharply pointed and about a foot longer than the size of the wire, thus, three-foot wire would require a four-foot stake.

To start the fence tack the end of the roll of wire fast to the side of the coop with staples, then unroll the wire, drive a stake every five feet and tack the wire fast to it, keeping the wire close to the ground and as tight as possible. The fence should be continued in this manner until the roll is brought back to the other side of the coop and fastened. After the wire has been tacked fast to the house at both sides and to the stakes, the stakes should be driven into the earth an inch or two more. This will taut the wire and bring the bottom edge down tight on the ground. After that any open place along the bottom may be pegged down. In this manner a fence of any size and shape can be quickly made and at small cost.

When it is desired to take it down all that is necesssary is to loosen the wire from the sides of the coop and pull up the stakes, leaving the wire fastened to them. If taken up in this way the fence can again be erected at another coop without trouble.

If a gate is desired, it may be made by simply nailing the end of the wire to a flat board instead of to the coop and then place two hooks on the board, one at the top and one at the bottom and two eyes in the side of the coop, hooking the board fast to the coop.

We have built portable fences like this five feet high and used them for as long as six months in one place without trouble. The stability of the fence depends entirely upon driving the stakes into the ground deep enough. A crowbar is often useful in making the holes for the stakes.—J. Raymond Kessler, Chester Co., Pa.

QUERIES

Remedy For Cholera Wanted

"I would like to know what to do for my chickens which, I think, have cholera. Cannot you give me a remedy which I can mix in the mash?"—C. R. R., Kent Co., Md.

Too Much Glass For Either Summer or Winter

There is little use in trying to cure genuine cholera by giving medicine alone. This is the most fatal of all diseases, tho not as frequent as some others. Cases of real cholera are comparatively rare. Bowel troubles of various kinds are often mistaken for cholera, altho these if neglected may lead to it. The symptoms of cholera are diarrhea, loss of appetite, excessive thirst, pale comb and wattles and extreme exhaustion. Death occurs in a few hours, or within two or three days. Kill all victims and bury the carcasses, and thoroly clean and disinfect the premises. If it is only diarrhea, feed no laxative feeds and give each fowl a teaspoonful of olive oil or 25 grains of epsom salts dissolved in water. Boiled milk is helpful.

By-Products Feeds

"What about the by-products feeds which are being recommended by state officials?"—E. F. T., Montgomery Co., Pa.

The by-products of manufacture are a valuable source of food when chosen intelligently and fed with discrimination. This is especially true of protein carriers. But it is well to remember that experience has shown that such feeds are supplemental and that it is not economical to try to compose a satisfactory ration by the use of by-products alone. This applies with especial force to poultry, since poultry is not able to take care of a great amount of roughage. A recent state bulletin recommends the combining of certain grains and by-products, many of which have not been in common use as poultry feed, and claims that the cost of poultry feed may be reduced by several dollars per ton under the cost of whole grains. Our advice is, go slow on this. Depend upon natural grains as heretofore and use such by-products as are economical as supplementary feeds to balance the ration.

MARK THE HENS

Before she outgrows the "pullet look" the young hen just coming into laying should be marked so her age can readily be determined in the future. Many very old hens are retained in the flock because the farmer has no means of determining their ages.

The easiest way of marking pullets is to punch holes in the web between the toes. Thus pullets of this year could be marked on the left foot and those of next year on the right foot. Where the hens are held but two years no other system of marking need be practiced, since for hens more than two years, additional identification marks can be made by having the holes come between different toes.—T. Z. Richey.

VINELAND CONTEST MONTHLY REPORT

Second or Yearling Year

At the end of April, the sixth month of the second year of the Vineland Egg Laying and Breeding Contest, the production stands at 58,584 or an average production of 32.3 percent. The production for the month of April was 19,415, or a production of 64.5 percent.

The special cash prizes for the month have been awarded as follows: To Pen No. 76 for the highest production for any one pen for the month, having laid 243 eggs, or a production of 81 percent. This pen is a White Leghorn pen and is owned by P. G. Platt of Wallingford, Pa. To Hen No. 63 for the highest production for any one hen for the month, having laid 30 eggs or a production of 100 percent. This hen is a Barred Plymouth Rock and is owned by Overbrook Farm, of New Brunswick, N. J. Pen No. 26, the White Wyandotte pen owned by Mr. H. S. Tuthill of Vineland, N. J., still leads the contest to date, having laid 794 eggs, or an average production of 43.8 percent.

The following table shows the percent of production for the month and to date for each of the breeds represented:

Breed	April	To Date
Black Leghorns	74.1	32.5
White Leghorns	70.1	32.1
Buff Leghorns	65.1	30.4
Barred Plymouth Rocks	62.8	35.7
White Plymouth Rocks	56.2	28.2
R. I. Reds	55.9	33.4
White Wyandottes	55.2	34.2
Columbian Plymouth Rocks	54.7	34.1
Columbian Wyandottes	53.9	31.6
Buff Wyandottes	51.2	27.1

POULTRY IN THE ORCHARD

Is the keeping and raising of poultry in connection with horticulture feasible? Do they work well together? Men who have had years of experience in growing chickens and fruit on the same ground answer that the two certainly make an ideal combination. It is a reasonable assumption that an orchard of fruit trees cannot fail to be benefited when enclosed as a poultry park. A more ideal place for rearing chickens cannot be found. The shade of the old apple or some other tree is absolutely necessary for poultry welfare. Nature furnishes no better place for young chickens and laying hens during the summer season than an orchard, and the great economy of space is apparent.

The work which chickens will do in ridding an orchard of insect pests is great, as the healthy chick and biddies are after the insects all the time. The droppings of poultry are also beneficial to an orchard. A neighbor claims that his trees have doubled their yield from this cause.

Any fruit growing high enough to be out of reach of the hens is benefited by their presence, giving better crops and growing more rapidly than elsewhere. In a test made and reported by Cornell University some years ago, the presence of chickens was found to accomplish more in killing certain injurious insects than all the liquid sprays that could be applied.—W. F. Purdue, Indiana.

The sheep killing dog is on the side of the Huns in these days when our soldiers need all the wool they can get.

Milking Quality in Ewes

Points in Selection and Breeding of Sheep

By B. O. SEVERSON

In reply to an inquiry in your issue of April 27 as to the importance of milk yield in breeding ewes, I wish to express my opinion gained by careful study of our experimental sheep at the Pennsylvania State College.

Breed Characteristics

The milk supply of a breeding ewe is determined by breeding, feeding, good health and management Breeding, of course, is of greatest importance since the inherited tendency of milk production in sheep is very similar to that in dairy cattle. The reason that Dorset sheep can raise twins and triplets and produce hot house lambs better than other breeds is because of their superior milking tendencies. In the case of Delaine Merinos, as a rule, the ewes have enough milk to develop one lamb but when twins are produced they are smaller and make less gains than single lambs. This rule holds in all breeds, but not to the same extent as shown in the case of Merinos.

In the case of Shropshires, there is great variation in milking tendencies. Some ewes that tend to fatten easily and show extreme mutton form are, as a rule, poor milkers and have runty lambs, unless they are fed a great deal of grain. Ewes that are large and roomy; that is, that have the digestive capacity for a large amount of rough feed, are invariably the best milkers and raise twins successfully.

After close observations on these ewes, it has been found that the rate of growth of the lambs is dependent upon the amount of milk produced by their mothers. The more milk, the greater the gains. It has been shown in the case of Merinos that the more vigorous and larger ewes tend to produce the greatest amount of milk. This, however, is not always the case. Often the best milkers are discarded in the fall of the year because they do not look as well as the other ewes. A good mother always gives her lambs her surplus flesh. In building up a flock of sheep it is important to make careful studies on many factors of improvement and one of greatest importance is the inherited milking tendencies.

Experiments by Ritzman have shown that the percent of butterfat in the milk of ewes does not affect the growth of the lambs, but that the amount of milk was directly proportional with gains of lambs. However, in case of single lambs it is possible to have too much milk, especially during the first few days of the lamb's life. When lambs receive too much milk they are subject to colic. Sometimes lambs when six or eight weeks old and apparently the best in the flock suddenly "go off" feed, become stiff (paralyzed) and die. This is caused by over-feeding. Therefore, proper management of the flock is essential for best results.

Feeding For Milk

Concerning feeding in general, it may be said that roughages like clover hay or alfalfa hay with two pounds of corn silage daily per ewe are excellent feeds for sheep. If corn stover, timothy hay or straw is fed, a greater amount of gain is necessary. The breeding ewe that is gaining in weight, and the quality of gain is not soft surplus fat, when properly exercised will generally have a sufficient amount of milk for the lambs at lambing time. Some ewes in spite of good management and feeding do not produce enough milk because they place fat on their own bodies instead of yielding milk for the lambs. The reason for feeding a grain mixture like corn, oats and wheat bran in equal parts by weight for four or six weeks prior to lambing is that when fed in this manner the ewe has milk for her lambs when they are born. The sheep that are fed nothing but corn stalks and straw yield little milk, even tho they have the best of breeding. Further than this, the large losses of lambs at lambing time are in most cases due to improper feeding, the low physical condition of the ewes and the lack of exercise in the ewes before lambing. Following lambing, liberal feeding of the ewes is necessary for the best growth of the lambs. On good pasture it is not economical to feed grain to breeding ewes.

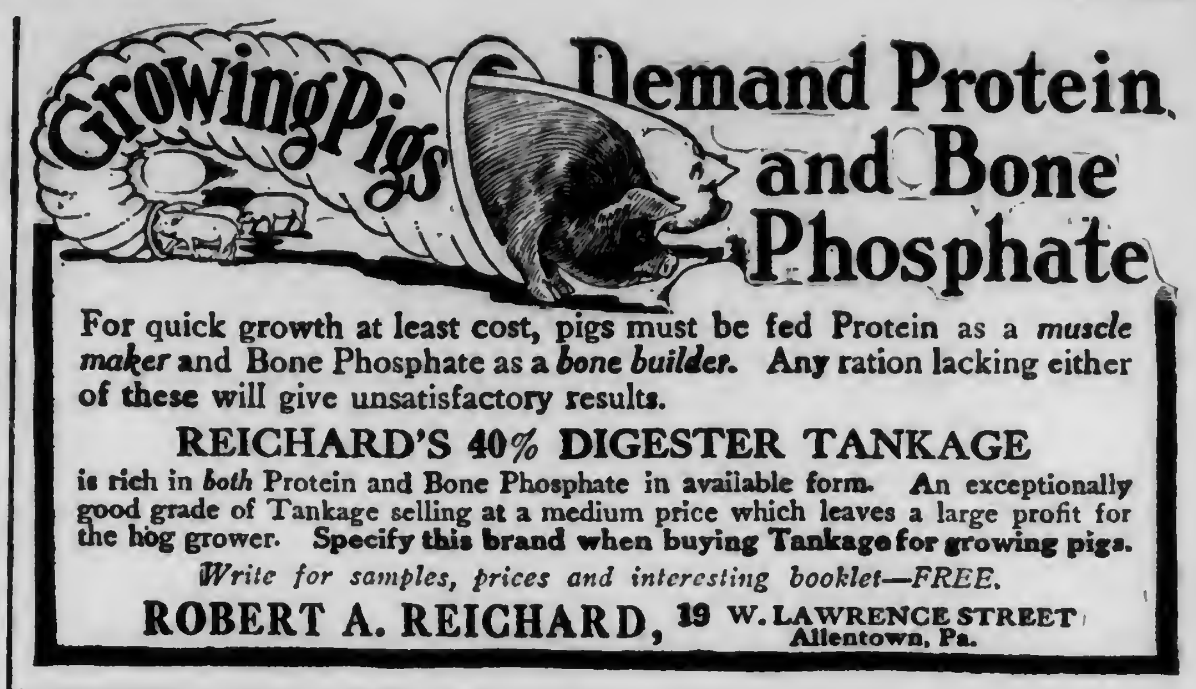
Exercise is almost as important as feeding in keeping the ewes in good physical condition for lambing and the production of milk for the lambs. During the winter the flock should have access to the corn fields or pastures on bright days and to liberal exercise yards when the snow is too deep to turn the flock out in the fields.

Good Management

Good health in sheep is largely a matter of management. Proper exercise and feeding are of first importance. Providing shelter that affords a dry, well-drained bed and free from draughts is essential. A sheep can stand weather as cold as 40 degrees below zero, provided it is well fed, well bedded and dry. Another very important matter is parasites. Sheep in Pennsylvania are subject to infestations of stomach worms and worms causing nodular disease of the intestines. Special precautions should be placed on prevention of these parasites because when once badly infested the flock is likely to be a financial loss to the owner. The most practical means of prevention of infestation is the rotation of pastures; that is, by having two or three pastures so that the flock can be alternated on these pastures every two weeks during the pasturing season. By having the lambs born in March and weaned by the first of July is another important means of preventing losses in lambs. The use of plowed fields, forage crops and the like should be used to the greatest possible extent.

HALL ON STEER FEEDING

E. P. Hall, who fed and exhibited the 1910, 1912, 1916 and 1917 International Grand Champion carlots, has written a meaty little leaflet for the American Aberdeen-Angus Breeders' Association. This is illustrated with pictures of the four International show loads of cattle and Mr. Hall's portrait, and is being distributed by the Association free to cattle feeders and breeders who ask for it. Write the American Aberdeen-Angus Breeders' Association, Union Stock Yards, Chicago, Ill.



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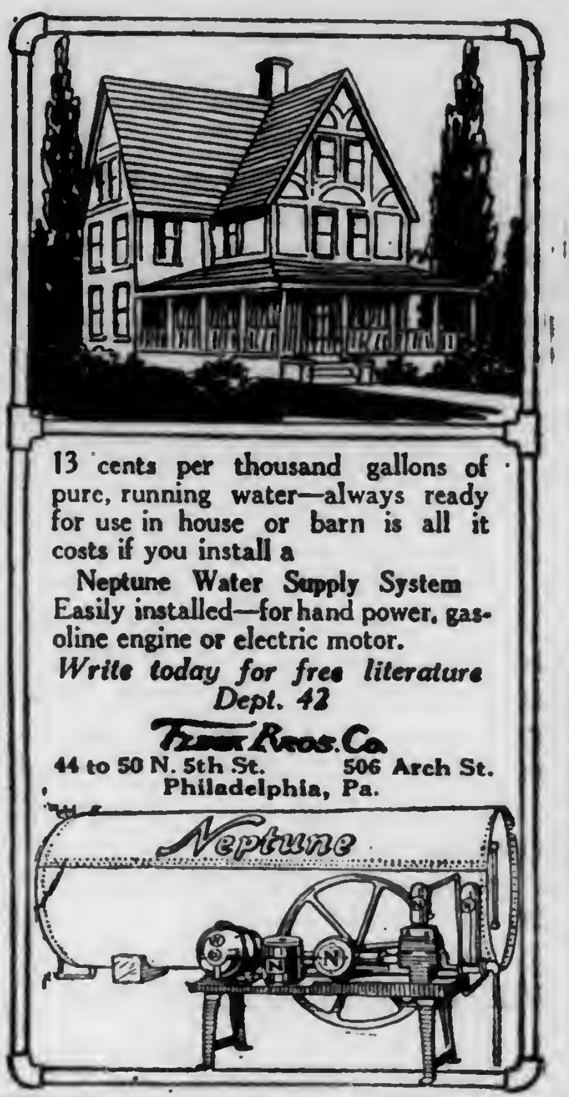

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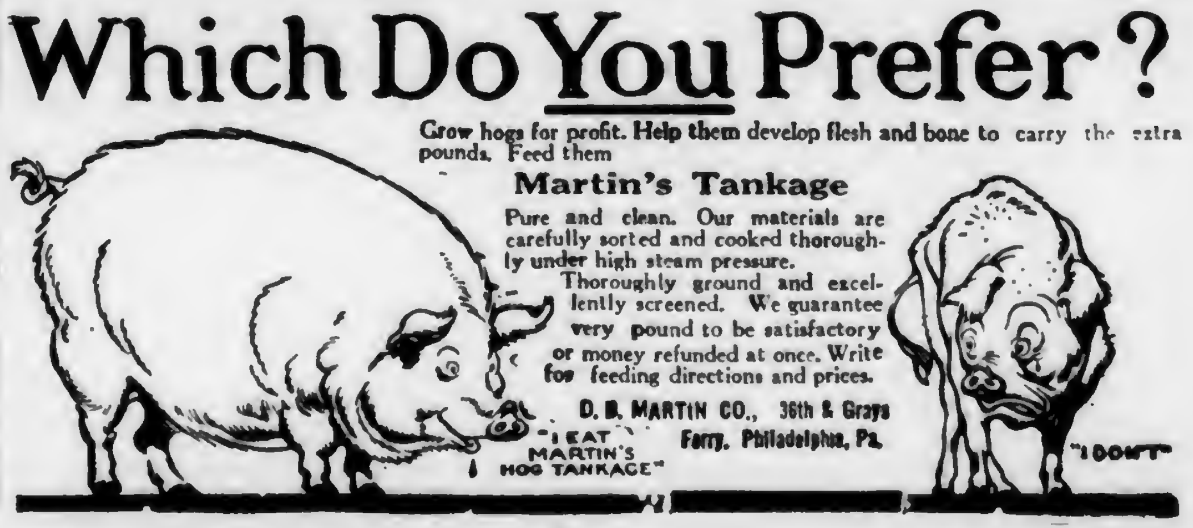

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Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Potato Markets Show Weak Tone

The majority of markets in the shipping sections continued weak, altho Maine and the northwestern shipping districts held firm and the tone improved at the close. No. 1 Green Mountains sold firm at $1.36 per cwt. bulk, and field run $1.27. No. 1 round whites again lost 10c, ranging $1@1.10 in bulk to growers in the Rochester, N. Y., shipping section. Michigan white stock met similar decline at Grand Rapids, closing the period at 60@70c. Carlots Michigan and Minnesota No. 1 white stock sold about steady at $1.20 per cwt. in Chicago.

New Potatoes Much Lower

Sharp declines occurred in the producing sections, the price to growers reaching $3 per barrel for No. 1 Spalding Rose, f. o. b. usual terms, Hastings, Fla. Resisting power was shown at the low point, values recovered temporary $3.25; but sagged back at the close. These prices are about half the range at the beginning of the season and compare with the range of $7.75@8 on May 8th of last year. Total movement of new potatoes was 968 cars compared with 501 last week and 979 for the corresponding week of last year.

Old Onions Draggy

Demand and movement continued slow, and market generally weak. The prevailing range for old yellow stock was $1@1.75 in Eastern markets, and $1@1.50 in Central, Southern and Western markets. Shipments were lighter, 59 cars, New York, Ohio and Massachusetts leading.

New Onions Slow and Declining

At Texas shipping point demand was reported slow and market lower. No. 1 yellow stock declined 20@25c closing at a range of $1.10@1.15 for crate Laredo f. o. b. usual terms. No. 2 yellow stock ranged 10@15c lower, ruling $1.10 per crate. No. 1, white stock was firm $1.50, and No. 2 white ruled at $1.35. These prices compare with a range of $1.40@1.50 to growers for corresponding week in 1917.

Old Cabbage Is Practically Gone

Only 3 cars, all Michigan started this week. A few sales were reported, ranging $25@35 per ton. Movement of new cabbage was heavy, 1092 cars; South Carolina shipped 494 compared with 344 last week and with only 10 reported for the corresponding week last year.

New Cabbage Still Lower

Prices of new cabbage show a very weak range in the producing sections, at $1.25@1.75 per 100-lb. crate for South Carolina pointed type, and $1@1.40 for drum heads closing near the low point, f. o. b. usual terms. In northern consuming markets heavy supplies caused sharp declines for pointed and flat type. New York ruled very weak, closing the period $1.50@2.25 per 100-lb. crate. This range was about that of the other leading markets.

Tomato Market Fairly Steady

Prices in Florida shipping sections held at a narrow, slightly weaker range, ruling $2.60@2.75 per 6-basket crate at Miami, Florida. The market at Palmetto showed a strong tone, closing the week at $2.75@3.

Strawberry Market Advances

Markets were strong at North Carolina shipping points, good Klondykes reaching $6@8 per 32-quart. Prices in the Arkansas shipping sections ruled lower, good Klondykes ranging mostly $5@5.25 per 24-qt. crate in carloads f. o. b. cash track. Movement from Arkansas increased greatly during the week, reaching 174 cars compared with 66 last week.

Other Vegetables and Fruits

Florida string beans ranged firm at $2.50@3.25 per hamper. Shipment was heavy, 146 cars. Florida egg plant was also firm at $3@4.50 per crate. Peppers advanced about 25c, ranging generally $3.75@4.25 per crate. California fancy asparagus ranged much lower, with heavy arrivals of other stock, and jobbing sales ruled $2@2.35 per dozen. New Jersey extra fancy gradually declined, reaching $3@3.50 in eastern markets with a weak tone. Movement from New Jersey was 71 cars compared with 25 cars last week.

WINTER WHEAT PROSPECTS

"A possible 650,000,000 bushels, the greatest winter wheat crop since the record breaking yield of 1915, together with a probable increase of 15 percent in the acreage of spring wheat—that is the forecast made in a report on the condition of winter wheat issued today by the Chamber of Commerce of the United States thru its Committee on Statistics and Standards.

"The present acreage now standing in winter wheat," says the report, "is 20 percent greater than the acreage at the same time in 1917. But the greatest promise of a high yield of winter wheat is found in the general high condition of the wheat, a condition which has improved steadily since the first of April.

"Estimates of coming yields are always uncertain because of the possible vicissitudes of weather and depredations of insect enemies. But the crop has come thru the trying month of March with a higher condition than it entered it, and with moderately favorable weather from now on there is promised a production of at least 600,000,000 bushels. It may go as high as 650,000,000 bushels if all goes well."

Spring Wheat Outlook

On the subject of spring wheat the report says: "There is little to be said of spring wheat, but that little is most encouraging. Seeding is nearly completed and under most favorable conditions; one of the most important of which is the large amount of moisture in the sub-soil. The outlook is for an increased acreage over last year of about 15 per cent."

The above wheat estimate put out by the Chamber of Commerce of the United States, an organization of business men of the country, does not square with the figures of the Department of Agriculture and the Department is not noted for publishing pessimistic figures concerning crop production. While everyone hopes that the wheat crop may be enormous, no good can come from misrepresentation.

The December Crop Reporter, published by the Department of Agriculture, for last December, estimates an increase of four percent in acreage instead of 20 percent as stated by the Chamber of Commerce. It also gives the condition on December 1 as 79 percent of normal as against 89 percent for the 10-year average. It is true that the winter and spring has been favorable over a greater part of the country, but it will be well for the country to take the Chamber's figures with a grain of salt.

Hope for the billion-bushel wheat crop, for which the Government is striving this year, was strengthened since the above was written by the Department of Agriculture's May crop report forecasting a production of 572,539,000 bushels of winter wheat.

The winter wheat crop harvested in 1917 was 418,000,000 bushels. The May forecast last year was for 366,000,000 bushels.

Realization of a winter wheat crop as large as that forecast would place this year's harvest of that grain as the third largest ever gathered. The estimate is 12,500,000 bushels more than forecast in April from conditions then existing and 154,400,000 bushels more than the crop harvested last summer. On conditions from now until harvest time will depend whether the crop will be larger or smaller than today's forecast, based on conditions May 1. In the week since then, generally favorable weather for wheat development continued, and the crop has made excellent progress in all principal producing areas.

BUCKWHEAT STOCKS AND PRICES

With a view of ascertaining the commercial stocks of buckwheat suitable for seed in the most important buckwheat producing states, schedules were sent to seedsmen, shippers and mills that handle buckwheat, according to the records of the Seed Reporting Service. The stocks are exceedingly small and it seems necessary that all buckwheat held for milling purposes, which may be suitable for sowing, be tested and if of satisfactory germination be reserved until the sowing season is over, in order that all seed that is available may be utilized for sowing this season. The fact that there has been, perhaps, a greater demand than ever before for wheat flour substitutes has tended to reduce earlier in the year than usual the supplies of buckwheat held by country shippers and by growers. Furthermore, it appears that the mills themselves have unusually small stocks of buckwheat on hand and that they have been grinding the buckwheat into flour as fast as they have been receiving it.

Some of the correspondents stated that many of their farmers were saving seed for their own use and possibly a little surplus for the use of their neighbors, but that it was too early now to determine accurately the quantity held by farmers in the aggregate. It is evident that most of the stocks reported by dealers will not be available for shipment, but will be needed locally for sowing.

The retail prices reported vary from $2.20 to $2.45 per bushel for uncleaned or thresher-run buckwheat.

PENNSYLVANIA CROP REPORT

The Crop Reporting Board of the Bureau of Crop Estimates, United States Department of Agriculture makes the following estimates from the reports of its correspondents and agents:

On May 1 the area of winter wheat to be harvested in Pennsylvania is about 1,454,000 acres, or 5 percent less than the acreage planted last autumn, and 55,000 acres more than was harvested last year.

The average condition of winter wheat in Pennsylvania on May 1 was 79 percent of a normal, compared with 79 percent on April 1, 81 percent on May 1, 1917, and 89 percent the average condition for the past ten years on May 1.

A condition of 79 percent on May 1 is indicative of a yield per acre of approximately 16 bushels, assuming average variations to prevail thereafter. On the estimated area to be harvested, 16 bushels per acre would produce 23,203,000 bushels, or about 5 percent less than the 1917 crop, 2 percent less than the average production of the past five years. The out-turn of the crop will probably be above or below the figures given according as the change in condition from May 1 to harvest is above or below the average change.

The late seeding and dry weather last fall caused the crop to go into the winter with about the shortest growth ever seen in the state, consequently there has been somewhat more than the usual amount of winter killing, especially in Bucks, Chester, and parts of Lancaster and York Counties. In the Cumberland Valley the crop is looking fine; there was practically no winter killing, except possibly a very small percentage in stubble wheat. In other parts of the state the percentage of abandonment is about the same as usual.

The average condition of rye in Pennsylvania on May 1 was 86 percent of a normal, compared with 83 percent April 1, 87 percent May 1, 1917, and 90 percent the average condition for the past ten years on May 1. The condition May 1 forecasts the production of about 4,330,000 bushels, compared with 4,420,000 bushels, last year's final estimate, 4,845,000 bushels, the average production of the last five years.

The average condition of meadow lands on May 1 is 92 percent of a normal, compared with 89 percent May 1, 1917, and 88 percent the average condition for the past ten years on May 1.

The Voice of the People

We propose to reserve this department for the use of our readers to discuss all problems and matters of general interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. It will be necessary to limit such articles to 200 or 300 words. Publication of an article in this department does not signify editorial endorsement.

FARMERS BOUGHT BONDS

In your editorial, issue of April 27th, I read an account entitled "Farmers Buy Bonds." I was chairman of the committee on farmers for Cumberland County, N. J., for the sale of the bonds of the Third Liberty Loan. I would like to add to the statements that you have already made. In our county some of our sub-committees selling to farmers, who visited every farm house, stated that they sold bonds to over 90 percent of the farmers in their district, and that they have sold bonds to people in very poor circumstances whom they know will have to sacrifice a great deal in order to meet the payments on these bonds. One of our farmers, who canvassed in Deerfield Township, visited 14 farmers in one afternoon. He found the men home at 12 of these farms and sold to every one of them. His total sales for that afternoon were $15,600. This was one of the best reports, of course. Our farmers, however, are very largely using the weekly payment plan so that they can pay a certain amount of these bonds after their crop returns come in. I am simply giving you this information because of your request for more reports.—Warren W. Oley, County Agricultural Agent.

Farming States Lead

Iowa and Oregon are disputing as to which was first to exceed its quota for the Liberty Loan. And what state would you say would be third. Massachusetts, perhaps, or New York, or Ohio? Wrong. Its Arkansas. All western states, all strongly rural in population. Neither Iowa nor Arkansas contains a single large city, and it is especially hard to canvass rural communities because the population is so widely scattered. Yet these states led all the rest. Farmers are likely to be conservative in starting new things. But once they get to going they go, all right.—Kansas City Star.

THE FARM SHIFT

We turned our clock ahead with the rest of the crowd. At first we thought it might not seem necessary out here in the country, but we can't travel an hour behind the procession. I heard the alarm clock this morning and when I got down stairs my brother had two rousing wood fires and some kerosene lamps going in the house, a big fire in the arch under the maple syrup pan, and over in the orchard a brush fire was blazing merrily away. The sun showed no disposition to follow the new schedule, but the birds were singing and our dairying neighbors had already gone by with the milk they were delivering to the milk haulers to take ten miles to the milk plant—and the milk plant is conserving daylight. We have only three cows and they are kept for the sole purpose of supplying our own family needs. The neighbors with big dairies are selling off their cows just as fast as possible. One big auction was held today and several more are "brewing;" the business was a losing one before the April price was announced, and few people are anxious enough to lose money to get up in the middle of the night to lose more.

But in these days we all get up. The only confirmed slacker here is the baby. She was always something of a nuisance about insisting on being up as soon as I was, but she draws the line at this. Speaking of the work I had been doing in one day last week, a city friend said, "You should take two days for it. In the city we'd make two 8-hour shifts of that much work." Perhaps, but that's just what we do here too. All days are very similar in that respect, we make two 8-hour shifts and everybody works both shifts and in busy seasons, like sugaring, housecleaning and haying, we work two and a half or three shifts; we don't have any half-hour off for lunch, either. We haven't the slightest objection to this labor arrangement so long as none of us get seriously ill. But we are wondering if all the people who are yelling "slacker" at the farmer are doing it, too. —E. M. A., New York.

THE HIRED MAN

I noted your call for notes on farm hand problem. I have very strong ideas on the topic and it seems to me that the matter should be treated from the standpoint of its fundamental principles, as follows:

1—The farm hand is just what the farmer can pay for, no more and no less. If he is incompetent, poorly paid and poorly treated, it is only because the farmer's business pays him so poorly that he can only afford to pay a price which will attract only the poorest grade of labor. City pursuits are so much more profitable than farming that they can bid far higher for labor and attract from the farm all the best men.

2—Whenever the farm becomes more profitable thru higher prices for its produce, the farmer instantly raises farm wages in the effort to hire more men to produce more food. Either a fall in prices (witness 1895) or such uncertainty as we have under Hoover prevents the farmer from venturing into increasing his food production, reduces his demand for labor, and so labor wages.

3—Results of Warren's investigations show how closely farm wages follow farmers' incomes.

4—City wages and farm wages show flow of labor from farm to city.

5—Need of more food for war, requiring more labor, which must be hired back from the city to the farm in the face of city bidding.

6—Effect of Government hammering food prices on price and grade of farm labor.

Have you read President Schurman's address at Cornell Farmers' Week? You may think I am radical, but things must indeed be bad when a man in his position comes out squarely in favor of stopping food-price hammering.—Daniel Dean, Tioga Co., N. Y.

No Worry About Harvest

HAVE you noticed how discussion of the food supply situation seems to center around the number of acres it is possible to plant rather than around the harvesting of those planted acres?

It is an unconscious, but none the less wonderful, tribute to the genius of the inventors of the reaper and binder that the American public takes the harvesting of the greatest grain crop ever planted as a matter of course. The sole question now is, "How many acres can we plant?" The power and help required by the planting will be amply sufficient for the harvest where Champion, Deering, McCormick, Milwaukee or Osborne binders and binder twine are used.

And, where they are used, the harvest will be complete. No matter whether the grain be tall or short, heavy or light, standing or down, lodged and tangled, an International Harvester binder cuts and binds it all without waste.

It is an easy matter to be fully prepared for harvest. Buy the largest binder you can use. An 8-foot is better than a 7, and a 7 better than a 6 or 5 because the larger sizes conserve labor. Buy a new machine if there is any question about the efficiency of the old one. There is a limit, you know, to the dependability of repaired machines, while a new one is absolutely reliable.

Through our 90 branch houses and over 30,000 dealers, we furnish promptly either new machines or repairs for old ones. Do not hesitate to call on our organization for any help we can give in the harvesting of this year's grain crop—the most important crop ever raised. See the local dealer or write us direct.

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Our Vegetable Canning

Tests and Experiences of Readers

(Editor's Note.—Last fall we asked for reports from our readers of their experience with canning vegetables the cold-pack way last summer. Following are some of the responses, which we ask you to read because they will show you, if you are not already familiar with this process, how to have a goodly supply of delicious vegetables during winter at very little expense, compared with what one has to pay for canned vegetables purchased at the store.)

From Westmoreland County, Pa.

We canned 254 quarts of vegetables last season. We planted a large garden. The pea and bean seed were inoculated, and the beans, tomatoes and cucumber vines were all sprayed; then with careful cultivation, we had an abundance of all kinds of vegetables. We canned 35 quarts of peas, 136 quarts of string beans, 5 quarts lima beans, 26 quarts sweet corn, 37 quarts tomatoes and 5 quarts beets. Some of the root vegetables were canned merely as an experiment and for variety, as any root vegetables are so easily kept prime for winter use by burying in sand in the cellar; therefore we put up mostly only two cans each of these root vegetables. We canned 1 quart of shelled beans, 2 quarts succotash, 2 quarts tomatoes and corn combined, 2 quarts of tomatoes, corn and string beans combined, 1 quart of rutabagas, 1 quart of celery, and 1 quart of carrots.

Our cans were all tested for seal tightness before they were packed, the test being made thus: We put a quantity of water in each can, sealed it, turned it upside down to see if any water oozed out. The cans and covers were sterilized by leaving in scalding water until ready to pack. All utensils and everything needed were put in convenient reach.

All vegetables were cleaned, then blanched according to Government directions (blanching consists of scalding or cooking a few minutes, according to the vegetables, to loosen skin, to reduce bulk, to wash off a large number of ferment spores, etc). After the blanching we plunged them at once into cold water to stop the cooking, to firm up the flesh and to wash off still more of the ferments that would be likely to cause trouble in the cans. We were careful not to let them stand and soak in the cold water, but packed them in the cans as quickly as possible. One level teaspoon of salt was sprinkled over the top of each can's contents, then boiling water was poured in to fill the can, the rubbers were adjusted and the covers screwed on loosely. The cans were then processed the required length of time for each vegetable in our steam pressure cooker or canner. We always begin counting the time when the pressure gets up to the required number of pounds.

Only one can (a can of peas) spoiled out of the 254 quarts which we canned last season. And not one can broke in the canner, altho some of them were cooked in 15 pounds pressure.

In addition to the above we put up 52 quarts of pickled vegetables, as follows: 31 quarts of pickled cucumbers, 4 quarts spiced cucumber pickles, 9 quarts mixed vegetable pickle, 6 quarts pickled beets and 2 quarts of pickled celery. In all, last season, we canned 589 quarts of vegetables and fruit, besides the few cans of apples that we put up for late spring use and to save the apples from rotting. We canned these without sugar, as well as quite a lot of our fruit put up last fall.

And we need all this canned stuff for our own use. We have four hard working men to cook for, besides the other members of the family, and quite a bit of company. We cooked 90 meals for guests in one month last summer. We like it, but you can see that we needs must also like to put up a goodly supply of the wherewithal to prepare these meals.

Baehr Canner-Sterilizer. A 3-in-1 Outfit

In addition to these canned things we raised some shell beans and stored plenty of root vegetables. We also sold quite a bit of produce fresh from our garden. We have a good market, and it is more profitable to sell it right from the garden than to can it. Besides, it keeps us busy to get our own family supply canned. —Westmoreland Co., Pa., Farmer's Daughter.

Some Attractive Cans of Vegetables

This picture shows some of Westmoreland Co., Pa., farmer's daughter's 254 quarts of vegetables which she canned last season. In the top row, left to right, are: Celery, beets, corn and tomatoes combined, string beans (whole), and corn. In the bottom row are: Tomatoes, lima beans, lazy wife beans, carrots, tomatoes and corn beans combined, peas.

From Juniata Co., Pa.

Once a town friend said to me, "Mrs. Shuman, when does your canning season close?" I replied, "We can fruits and vegetables all summer and fall for winter, then all winter we can meats for summer use."

Our canning begins with strawberries and pineapples, raspberries, blackberries, dewberries, then cherries of several varieties, now and then a can of rhubarb, then plums (of which we have fine varieties), then peaches from trees which we planted in odd corners. With the late peaches come the pears and grapes, and last the quinces. We put up last fall between 400 and 500 jars of fruit alone.

We canned several kinds of vegetables of which we are fond. We have a family of six, and besides it takes as much to provision the comers and goers as it does for our own family. In the country where old-time hospitality is still the farmer's great pleasure, where the extra knife and fork is never put away, even in these war times of great conservation, we try to live up to our inherited generous natures, and dance just a little faster after the surplus for the outside calls which this war has brought us.

We can beans by the sterilizing, 3-hour process. If we are canning a quantity at a time, we use a wash boiler with a fitted wooden bottom. If I have only about 5 quarts to put up, I do them in a smaller kettle in which the cans fit, and plan to sterilize around meal time, not making an extra job of it. We use a wood fire, but when we do a 3-hour sterilizing job, we throw on a few shovelfuls of soft coal to keep the fire going longer.

We dry many apples, sour and sweet, having for this purpose a dry house with 10 dryers besides a cookstove dryer. We dry enough for ourselves and for orders for "snits and knep apples." The dried apple money goes to our oldest maid; the walnuts that are hulled beyond our needs are turned over to our little second girl for her pin money.—Mrs. Lloyd R. Shuman.

From Wayne Co., Pa.

I canned 18 quarts of wax and green beans this way: They were picked young, so did not need stringing. They were cut into small pieces across. I then filled quart glass jars, slightly warmed, with them packed tightly; I poured in boiling water to fill the can, salted in proportion of 1 level teaspoon of salt per quart. Then I put on the rubbers (which had been soaking in warm water), put on the caps with wire over them, but with fastener raised. If screw-top jars were used, I partially screwed on the covers. Then in the wash boiler with a false wooden bottom I put the jars, had the water come up to the neck. (Editor's Note. —It should come at least two inches above the cans to prevent loss of liquid from the cans.) After the water had commenced to boil I kept it boiling one hour more, then I took the can out, clamped down the tops and left to cool. (Editor's Note.—One hour is scarcely long enough to insure safe keeping with beans which should be cooked fully two hours. Also they should have been blanched and cold-dipped as previously described by "Westmoreland Co., Pa., Farmer's Daughter.")

Peas and corn I did the same way, first shelling the peas, and of course the corn was cut off the cob. (Editor's Note.—Peas and corn should be cooked not less than three hours in the cans, and the peas should be blanched, and cold-dipped the same as beans. The corn is cooked on the cob cold-dipped and then cut off, which cooking answers for the blanching. Corn and peas give canners more trouble than any other vegetable, and anyone is running a risk of almost sure spoilage who does not cook as we have just directed.)

Small round tomatoes I canned whole, but the larger ones I cut into sections, and processed the same as the beans. (You need not have cooked the tomatoes so long—22 minutes is long enough for them. Send to the U. S. Department of Agriculture, Washington, D. C., for a free copy of Farmers' Bulletin No. 839, which tells explicitly just what to do in canning every kind of vegetable and fruit. Too many people are right now blaming the cold pack method for their spoilage, when the whole trouble is that they did not follow directions.)

Plums I canned by wiping carefully, then placing them tightly in jars, pouring over them boiling water sweetened with a tablespoonful of sugar per pint of water. Then I sterilized them.—Mrs. Lillian Carr.

WAR BREAD

Scald one and one-half cupfuls of yellow Indian meal with three and one-half cupfuls of boiling water and boil three minutes. Pour into a mixing bowl and add half a cupful of molasses, one-fourth cupful of sugar, two tablespoonfuls of shortening, a tablespoonful of salt, half a teaspoonful of soda dissolved in a little hot water, and a yeast-cake softened in a quarter cupful of lukewarm water. Mix all these ingredients well and add white flour enough to make a stiff dough. Let rise over night and in the morning proceed as with white bread. This makes two loaves and a large pan of rolls.

Grange

NEW JERSEY GRANGES

Burlington Co. Pomona.—There was an attendance of about four hundred and fifty at the meeting of Burlington County Pomona Grange, held at Columbus recently. The local grange acted as host to the visitors and, as usual, they were received with cordial hospitality The weather man was indulgent and grangers were present from far and near.

The morning session was largely given over to listening to the interesting reports of committees. All the local granges reported a flourishing condition. Moorestown tops the list with a membership of 456 and Columbus comes next with 407 There is a total grange membership of 2,170 in the county.

Herman Croshaw, of Wrightstown grange, who had been prevented from attending the earlier meeting, was present and was installed as Worthy Master.

In the afternoon the Lecturer's program held attention, during which there was interesting speaking on timely subjects and singing by grange members.

Among the visitors were Worthy Master Peacock, of Franklin Grange No. 130, of Bergen County, who spoke entertainingly; brother and sister Bishop, of Salem County, and sister Freed, of Warren County, an accomplished elocutionist, who delighted her hearers with several selections.

At the beginning of the Lecturer's program Morris Lippincott, of Columbus Grange, delivered the words of welcome and sister Clara Hollingshead, of Medford Grange, made the response.

Columbus Grange.—At a recent meeting of Columbus Grange, the third and fourth degrees were conferred on 21 candidates, by Worthy Master William R. Shinn, in a very impressive manner. He was assisted by the other officers of the grange. There were about 200 present, visitors from nearly every grange in the county being noted. Among the latter were: District Deputy Albert Evans, of Moorestown; Farm Demonstrator Kiel, of Mount Holly; Past Master Emerson Yard, of Mercer County Pomona Grange; Past Master Cline, of Crosswicks grange; and Past Deputy Joseph Engle, of Rancocas. During the lecturer's hour there was singing and also some interesting impromptu addresses by the visitors.

Columbus grange is one of the largest in the state, having a membership of 407, and an average attendance of about 80. This grange owns its own hall, one of the best in the state, and is in good financial condition.

GREAT BRITISH SCIENTIFIC COMMMITTEE INDICTS ALCOHOL

The Liquid Board of Control of England has complete authority over liquor regulation in that island. It recently appointed a scientific advisory committee to report upon the physical effects of alcohol with special reference to physical efficiency of war workers. There was not a single abstainer on that committee, with the possible exception of one man. Its inquiry was restricted solely to the physical effects of alcohol, no report being rendered upon social aspects of the problem.

Already use has been made by the liquor interests in this country of extracts from this report, in which it is said that small quantities may be resisted by the human system under certain favorable circumstances.

"Without Signs of Intoxication"

says the committee, "the bearing and individual attitude of mind suffer temporary change as an effect of the drug; and those in contact with the person so affected have for the time being to deal with an altered individual, whose mind lacks temporarily its normal factor of judgment and conspicuous elements of its self-control. There is hardly any need to emphasize here the obvious fact that the directions which these alterations tend to take commonly, even as instanced merely by the few sub-types of deviation of judgment and behavior just mentioned, are likely to be fraught with serious consequences for the due discharge of responsibilities in all walks of practical life. Accuracy, avoidance of accidents, tactful handling of colleagues and subordinates, observance of discipline, punctuality, reticence in matters of confidence are all obviously jeopardized, and an additional source of friction is brought to complicate the relations between the employer and the employee."

The superstition that alcohol is useful as an ordinary medicine is attached by the committee in the following words:

"No scientific ground has been discovered for any claim made on behalf of alcohol to practical value as a direct stimulant of the heart in cases of threatened failure of the heart. When it appears to promote recovery from fainting it probably acts simply by virtue of its irritant action on the mucous membrane of the mouth and throat."

Particularly interesting is the Committee's finding in regard to the contention that alcohol is useful in cases of exposure: "The taking of alcohol during, or as a preliminary to prolonged or severe exposure to cold, is on every ground to be condemned. Any sensation of warmth which it produces under such conditions is an illusion fraught with danger; its effect is to render the subject indifferent to a peril which is, in fact, seriously increased by its use."

It is reported that alcohol may have technical place as a fuel-food, altho it is worthless from a practical standpoint. The evidence is "amply sufficient to condemn the use of alcohol as an ordinary source from which to supply the energy required by the body in health. To use it, as it is very commonly used by people who do not appreciate its limitations and drawbacks, as a staple food for muscular work, is to run a grave risk of damage to health and efficiency (for) malted liquors cannot be used as a large element in the working diet without danger of inducing such bodily disorders as may be incurred thru the constant exposure of the tissues to the action of alcohol."

The Committee rendering these findings is without doubt one of the most influential ever investigating the subject and its bias was distinctly anti-prohibition.

TO UNDERSTAND THE SIGNS

I fear that we must take your editorial on "Signs of the Times," in your March 9th issue, with a grain of salt. The statements attributed to such men as C. M. Schwab, W. G. Merritt, Council of American Anti-Boycott Association, Sir Edw. Carson and other English statesmen are interesting. But do those men believe what they say or are their remarks made for business or political reasons? If the Governments of the world ever get in complete control of the organized laboring men, the bottom of the deep sea will be the only place for such men as above mentioned.

The Bible says there is a time to build and a time to destroy. It seems that the latter is now our object. If ever to begin to rebuild, capitalists will help do it. If ever Russia gets organized into a fighting unit, it will be done thru the aid of capitalists. If Germany retains control, money men of Germany will handle it. The 181 million starved Russians are not going to have much say about their Government.

The conditions of prosperity which preceded the beginning of this war and which were increased by the war's effects in this country were due to the fact that for around 50 years there had been no great wars and the countries of the world were getting prosperous.

This generation has been getting an idea that the country will always be prosperous. So they unionize and demand until the bubble bursts. We face the greatest crisis in history which will teach this generation that this world was not made for pleasure alone. To do this it may be necessary for the majority to be brought to the verge of want. When factories begin to close down, as they did in the early 90's, the laborers will not aspire to regulate or control every governmental activity.—A. R. S., Tompkins Co., N. Y.

DON'T WASH THAT CUT

When we were boys we always held that cut finger under the pump and washed it out. But the Red Cross Magazine now tells us that such a proceeding was dangerous in the extreme and makes us wonder how we ever survived. The danger is that the water will carry germs deeper into the flesh where they can get a more tenacious hold upon you. It is even worse to touch a wound, for there are billions of germs on your hands waiting for just such a chance to jump at you. Peroxide is thority, for it carries the germs in, and is not strong enough to destroy them. The thing to do with a wound is to apply a sterilized bandage and let it bleed. The blood will carry out the germs, and if you don't bleed to death you will survive germless. —Milestones.

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The Trainmaster's Story

By Frank H. Spearman

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I never found it very hard to get into trouble; as far back as I can remember that has come dead easy for me.

When this happened I hadn't been railroading a month and I was up with my conductor on the carpet, sweating from sheer grogginess and excitement. The job of front-end brakeman on a mountain division is no great stake for a man ordinarily, but it was one for me, just then. We knew when we went into the superintendent's office that somebody was to get fired; the only question was, who?—the train crew or the operator? Our engine crew were out of it; it was up to the conductor and to me. Had the operator displayed red signals? The conductor said, no; I said, no; the operator said, yes; but he lied. We couldn't prove it; we could only put our word against his; and what made it the worse for me, my conductor was something of a liar himself.

I stood beading in a cold sweat for I could see with half an eye it was going against us; the superintendent, an up-and-up railroad man every inch and all business, but suspicious, was leading the operator's way the strongest kind.

There wasn't another soul in the little room as the three of us stood before the superintendent's desk except a passenger conductor, who sat behind me with his feet on the window ledge, looking out into the yard.

"Morrison's record in this office is clean," the superintendent was saying of the operator, who was doing us smooth as smokeless powder, "he has never to my knowledge lied in an investigation. But, Allbers," continued the superintendent speaking bluntly to my conductor, "you've never told a straight story about that Rat River switch matter yet. This man is a new man," he added, throwing a hard look at me. "Ordinarily I'd be inclined to take the word of two men against one, but I don't know one at all and the other has done me once. I can't see anything for it but to take Morrison's word and let you fellows both out. There wasn't any wreck, but that's not your fault; not for a minute."

"Mr. Rocksby," I protested, speaking up to the division boss in a clean funk—the prospect of losing my job that way, thru a lying operator, took the heart clean out of me—"you don't know me, it is true, but I pledge you my word of honor—"

"What's your word of honor?" asked the superintendent, cutting into me like a hatchet. "I don't know any more about your word of honor than I do about you."

What could I say? There were men who did know me, but they were a long cry from the Rocky Mountains and the headquarters of the Mountain Division. I glanced about me from his face, gray as alkali, to Allbers, shuffling on the carpet, and to Morrison, as steady as a successful liar, taking my job and my reputation at one swallow; and to the passenger conductor with the glossy black whiskers; but he was looking out the window. "What do I know about your word of honor?" repeated Rocksby sharply. "Allbers, take your man and get your time."

A wave of helpless rage swept over me. The only thing I could think of was strangling the lying operator in the hall. Then somebody spoke. "Show your papers, your darn fool."

It came calm as sunshine and cold as a northwester from the passenger conductor behind me, from Dave Hawk, and it pulled me into line like a bugle call. I felt my English all back at once. Everybody heard him and looked my way; again it was up to me. This time I was ready for the superintendent, or for that matter for the blooming Mountain Division. I had forgotten all about my papers till Dave Hawk spoke. I put my hand, shaking, into my inside vest pocket for a piece of oilskin—it was all I had left; I was a good way from my base that year. I laid the oilskin on the superintendent's table, unfolded it jealously and took out a medal and a letter, that in spite of the most careful wrapping was creased and sweated. But the letter was from my captain and the bit of bronze was the Cross. Rocksby picked up the letter and read it.

"Have you been in the British Army?" he asked curtly.

"Yes, sir."

He scowled a minute over Picton's scrawl, laid it down and gratified his curiosity by picking up the medal. He studied the face of the token, looked curiously at the dingy red ribbon, twirled it and saw the words on the reverse, "For Valour," and looked again at me.

"Where'd you get this?" he asked indicating the Victoria.

"In the Soudan, sir."

Dave Hawk kept right on looking out the window. Neither my conductor nor the operator seemed to know just what the row was. Nobody spoke.

"What' you doing here?" Rocksby went on.

"I came out to learn the cattle business." His brows went up easy-like. "They cleaned me out." Brows dropped gentle-like. "Then I went bad with mountain-fever," and he looked decent at me.

"You say you had your head out the cupola and saw the white signal?" he asked, sort of puzzled.

"I saw the white signal." Rocksby looked at the operator Morrison.

"We'll adjourn this thing," said he at last, "till I look into it a little further. For the present, go back to your runs."

We never heard any more of it. Allbers got out quick. I waited to pick up my stuff and turned to thank Dave Hawk; he was gone.

It wasn't the first time Dave had pulled me out of the water. About two weeks before that I had crawled one night up on the front platform of the baggage at Peace River to steal a ride to Medicine Bend on Number One. It was Dave's train. I had been kicked out of the McCloud hospital two days before without a cent, or a friend on earth outside the old country, and I hadn't a mind to bother the folks at home any more, come Conan or the devil.

The night was bitter bad, black as a Fuzzy and sleeting out of the foothills like manslaughter. When the train stopped at Rosebud for water, what with gripping the icy hand-rail and trying to keep my teeth steady on my knees I must have been a hard sight. Just as the train was ready to pull out, Dave came by and poked his lantern full in my face.

He was an older man than I, a good bit older, for I was hardly more than a kid then, only spindling tall, and so thin I couldn't tell a stomach ache from a back ache. As I sat huddled down on the lee step with my cap pulled over my head and ears, he poked his light full into my face and snapped, "Get out!"

If it had been a headlight I could not have been worse scared, and I found afterward he carried the brightest lamp on the division. I looked up into his face and he looked into mine. I wonder if in this life it isn't mostly in the face after all? I couldn't say anything, I was shaking in a chill as I pulled myself together and climbed down into the storm.

Yet I never saw a face harder in some ways than Dave Hawk's. His visor hid his forehead and a black beard covered his face till it left only his straight cold nose and a dash of olive white under the eyes. His whiskers loomed high as a Cossack's and his eyes were onyx black with just such a glitter. He knew it was no better than murder to put me off in that storm at a mountain siding; I knew it; but I didn't much care for I knew before very long I should fall off, anyway. After I crawled down he stood looking at me, and with nothing better on I stood looking at him.

"If you get up there again I'll break your neck," he promised, holding up his lantern. I was quiet; the nerve was out of me.

"Where you going?" he asked shortly.

"Medicine Ben—"

"Get into the smoker, you darn fool."

How it galvanized me. For twenty-four hours I hadn't eaten. I was just out of a hospital bed and six weeks of mountain fever, but I braced at his words like a Sioux buck. I hurried back ahead of him to the smoking car, drenched wet, and tough, I know. I looked so tough that the brakeman grabbed me the minute I opened the front door and tried to kick me out. I turned snarling then, crazy as a wolf all in a second, and somehow backed the brakeman against the water cooler with his windpipe twisted in my bony fingers like a corkscrew. The train was moving out. I had been cuffed and kicked till I would rather kill somebody than not; this seemed a fair chance for a homicide. When the poor fellow's wind went off—he wasn't much of a scrapper, I fancy—he whipped around in the aislo like a dying rooster. As he struggled in my grip there behind him in the doorway stood Dave, lantern in hand, looking on with a new face. This time he was smiling—Dave's smile meant just the parting of his lips over a row of glistening teeth; perfectly even teeth and under his black mustache whiter than ivory. It appeared to amuse him to see me killing the brakeman. The instant I saw Dave I let go and he watched the crestfallen trainman pull himself together.

"Guess you'll let him alone now, won't you?" said Dave pleasantly to my rattled assailant. "Sit down," he growled harshly at me, stringing his lantern on his arm. He walked unconcernedly down the aisle, and I dropped exhausted into the front seat facing the Baker heater. It was heavenly hot; red hot. I have loved a car heater ever since, and Baker to me is hardly lower than the angels. My togs began to steam, my blood began to flow, the train boy gave me a wormy apple, an Irishman with a bottle of rank whiskey gave me a stinger and I wanted to live again. I curled up in the seat and in five minutes I was roasting, oh, such a heavenly roast; and dozing, Lord! what a heavenly doze, before that Baker heater. All night the forward truck beat and pounded under me; all night I woke and slept in the steaming, stinking air of the hot car. And whenever I opened my eyes I saw always the same thing, a topping tall conductor looming in the aisle, his green-hooded lamp, like a semaphore, under his arm. And above, in the gloom, a bush of black beard and a pair of deep-set, shining eyes back under a peaked cap. Dave often comes back as I saw him, waking and dreaming, that night in the smoker of Number One.

It was breaking day when he bent over me.

"We're getting into the Bend," he said gruffly. "Got any money for breakfast?"

"I haven't a cent on God's earth." He put his hand in his pocket and pulling out a handful of loose bills shoved one into my fingers.

"I'll take it from you and gladly," said sitting up. "But I'm not a beggar nor a tramp."

"Off track?"

"Yes. I'm going to enlist—" His teeth flashed. "That's worse than railroading, ain't it?" Something came into my head like a rocket.

"If I could get started railroading——"

"Get started easy enough."

That's how I happened to show him my Victoria. He gave me a card to the trainmaster, and next day I went to braking for Allbers, who, by the way, was the biggest liar I ever knew.

But the morning I got into Medicine Bend that first time on Number One I had another scare. I went into the lunch room for coffee and sandwiches and threw my bill at the boy He opened it, looked at it and looked at me.

"Well," I growled, for I was impudent with luck and a hot stomach. 'Good, ain't it?"

"Smallest you got?"

I nodded as if I had a pocket full. He hustled around and came back with a handful of money. I said nothing but when he spread it out before me I sat paralyzed. I had just assumed that Dave had given me a dollar. Sinkers, deducting the price of two coffees and six sandwiches from the bill counted out nineteen dollars and thirty cents for me.

That change kept me running for a month, and after my first pay day I hunted up Dave to pay him back. I found him in the evening. He was sitting alone on the eating-house porch, his feet up against the rail,

looking at the mountains in the sunset.

"Never mind," he said, as I held out a twenty dollar bill and tried to speak my little piece. He did not move except to wave back my hand.

"Oh, but I can't let you do that—" I protested.

"Put up your money, Tommie." He called me Tommie.

"No," he repeated putting by my hand; his face set hard, and when Dave's face did set it set stony. "Put up your money; you don't owe me anything. I stole it."

It was a queer deal out on the West End in those days. It was a case of wide open from the river to the Rockies. Everybody on the line from the directors to the car-tinks were giving the company the worst of it. The section hands hooked the ties for the maintenance, the painters drank the alcohol for the shellac, the purchasing agent had more fast horses than we had locomotives, and what made it discouraging for the conductors, the auditors stole what little money the boys did turn in.

A hard place to begin railroading the old line was then; but that's where I had to tackle the game, and in all the hard crowd I mixed with Dave Hawk was the only big man on the division. There were others there who fixed the thing up by comparing notes on their collections and turning in percentages to make their reports look right. But Dave was not a conspirator; never made a confidant of any man in his stealing or his spending, and despised their figuring. He did as he pleased and cared for no one; no superior had any terror for Dave. He had a wife somewhere back east of the river, they said, that had sold him out—that's why he was in the mountains—and he lived among free and easy men a lonely life. If anybody ever got close to him, I think maybe I did, tho I was still only a freight conductor when the lightning struck the division.

It came with a clean sweep thru the general offices at the River. Everybody in the auditing department, the executive heads down to general manager and a whole raft of East End conductors. It was a shake-out from top to bottom, and the bloods on our division went white and sickly very fast.

Of course it was somebody's gain. When the heads of our passenger conductors began to drop, they began setting up freight men. Rocksby had resigned a year earlier, and Haverly, his successor, an ex-despatcher and as big a knave as there was on the pay roll, let the men out right and left with the sole idea of saving his own scalp. By the time I was put up to a passenger train the old force was pretty much cleared out except Dave.

Every day, almost, we looked to see him go. Everybody loved him because he was a master railroad man, and everybody except Dave himself was apprehensive about his future. He moved on just the same, calm and cold as icewater, taking the same old chances, reckless of everything and everybody. I never knew till afterward, but the truth was Haverly with all his bluff talk was just enough afraid of Dave Hawk to want to let him alone. The matter, tho, focused one day up in the old office in an unexpected way.

Haverly's own seat got so hot that bedeviled by his fears of losing it and afraid to discharge Dave, who now sailed up and down the line reckless as any pirate of the Spanish Main, he cowered, called Dave into the little room at the Wickiup and asked him to resign. In all the storm that raged on the division the old conductor alone had remained calm. Every day it was somebody's head off; every night a new alarm; Dave alone ignored it all. He was, thru it all, the shining mark, the daredevil target; yet he bore a charmed life and survived every last associate. Then Haverly asked him to resign. Dave, bitter angry, faced him with black words in his throat.

"Its come to a showdown," muttered the superintendent uneasily after a minute's talking. "Do you want to resign?"

Dave eyed the mountains coldly. "No."

"You'll have to—"

"Have to?" Hawk whirled dark as a storm. "Have to? Who says so?"

The superintendent shifted the paperweight on the desk uncomfortably.

"Why should I resign?" demanded the old conductor angrily. "Resign?" He rose from his chair. "You know I'm a thief. You're a thief yourself. You helped make me one. I've carried more men for you than for anybody else on the whole division. I don't resign for anybody. Discharge me, darn you. I don't ask any odds of you."

Haverly met it sullenly, yet he didn't dare do anything. He knew Dave could ruin him any day he chose to open his mouth. What he did not know was that Dave Hawk was molded in a class of men different from his own. Even dishonor was safe in the hands of Dave Hawk.

There was no change after, except that darker, moodier, lonelier than ever, Dave moved along on his runs, the last of the Old Guard. Better railroad man than he never took a train out of division. Stress of wind or stress of weather, storm, flood or blockade, Dave Hawk's trains came and went on time or very close. So he rode, grim old privateer, with his letters of marque on the company's strongbox, and Haverly trembled night and day till that day came that fear had foretold to him. A clap of thunder struck the Wickiup and Haverly's head fell low; and Dave Hawk sailed boldly on.

I was extra passenger man when John Stanley Bucks took the West End. He came from south of our country, and we heard great things about the new superintendent and about what would happen as soon as he got into the saddle. What few of the old men in the Wickiup were left looked at Bucks just once and began to arrange their temporal affairs. His appearance bore out his reputation. Only, everybody while pretty clear in his own mind as to what he would do—that is, as to what he would have to do—wondered what Dave would do.

He and Bucks met. I couldn't for the life of me help thinking when they struck hands, this grizzled mountaineer and this contained, strong, soldierly executive who had come to command us, of another meeting I once saw when I carried Crook out on a special and watched him at Bear Dance strike hands with the last of the big fighting chiefs of the mountain Sioux.

For three months Bucks sat his new saddle without a word or an act to show what he was thinking; then there came from the little room a general order that swept right and left from trainmaster to wrecking boss. The last one of the old timers in the operating department went except Dave Hawk.

The day the order was bulletined Bucks sent for Dave; sent word by me he wanted to see him.

"Come on," said Dave to me when I gave him the message.

"What do you want me for?"

"Come on," he repeated, and, greatly against my inclination, I went up with him. I looked for a scene.

"Dave, you've been running here a good while, haven't you?" Bucks began.

"Long as anybody, I guess," said Dave curtly.

"How many years?"

"Nineteen."

"There's been some pretty lively shake-outs on the system lately," continued Bucks; the veteran conductor looked at him coldly. "I am trying to shape things here for an entire new deal."

"Don't let me stand in your way," returned Dave grimly.

"That's what I want to see you about."

"It needn't take long," blurted Dave.

"Then I'll tell you what I want—"

"I don't resign. You can discharge me any minute."

"I wouldn't ask any man to resign, Dave, if I wanted to discharge him. Don't make a mistake like that. I suppose you will admit there's room for improvement in the running of this division?"

Dave never twitched. "A whole lot of improvement," Bucks, with perceptible emphasis, added. It came from the new superintendent as a sort of gauntlet and Dave picked it up.

"I guess that's right enough," he replied candidly, "there is room for a whole lot of improvement. If I sat where you do I'd fire every man that stood in the way of it, too."

"That's why I've sent for you," Bucks resumed.

"Then drop the chinook talk and give me my time."

"You don't understand me yet, Dave. I want you to give up your run. I want your friend, Burnes here, to take your run——"

A queer shadow went over Dave's face. When Bucks began he was getting a thunderstorm on Somehow the way it ended, the way it was coming about—putting me into his place—I, the only boy on the division he cared "a darn" about—it struck him, as it struck me, all in a heap. He couldn't say a word; his eyes went out the window into the mountains; something in it looked like fate. For my part I felt murder guilty.

"What I want you to do, Dave," added Bucks evenly, "is to come into the office here with me and look after the train crews. Just at present I've got to lean considerably on a trainmaster. Do you want the job?"

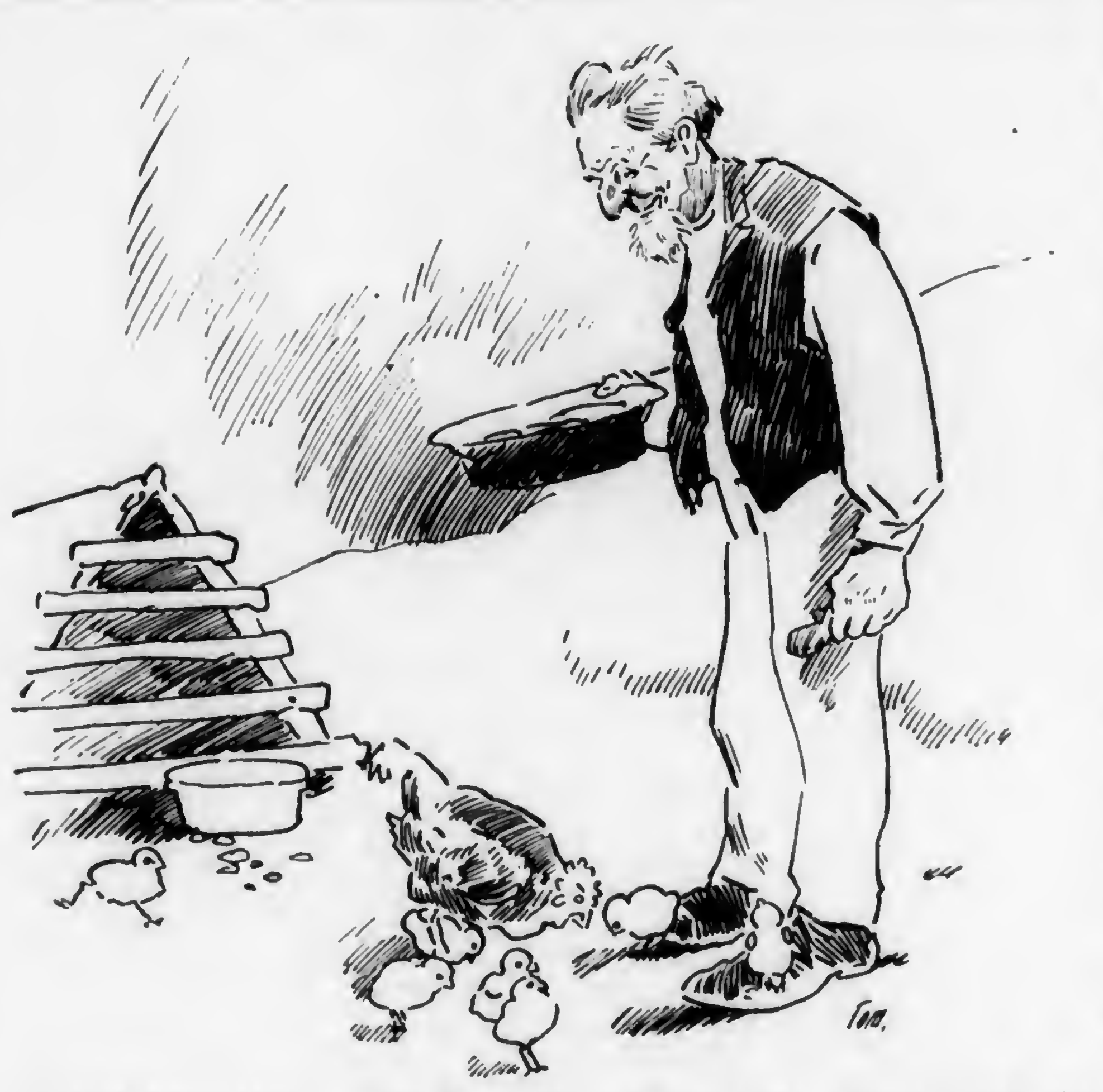
The silent conductor turned to stone.

"The men who own the road are new men, Dave; they didn't steal it. They bought it and paid for it. They want a new deal and they propose to give a new deal to the men. They will pay salaries a man can live on honestly; they will give no excuse for knocking down; they want what's coming to them, and they propose the men shall have their right share of it in the pay checks.

"But there's more than that in it. They want to build up the operating force, as fast as it can be built, from the men in the ranks. I aim to make a start now on this division. If you're with me, hang up your coat here the first of the month, and take the train crews."

Dave left the office groggy. The best Bucks could do he couldn't get a positive answer out of him. He was overcome and couldn't focus on the proposition. Bucks saw how he had gone to pieces and managed diplomatically to leave the matter open. Callahan, whom Bucks had brought with him as assistant, filling in meanwhile as trainmaster.

(To be concluded.)



Uncle Amos says: "Just hear that old hen fuss! You'd think she created all of those grains and that I had nothin' to do with it. But there is a lot of hen in all of us. Give us easy pickin' and we get mighty chesty in our estimation of our own powers. It is when it gets down to the real long and hard scratchin' that we're not quite so sure but that Providence and circumstances may have somethin' to do with the results. I guess that is why complaints are always louder than thanksgiving."

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 13, 1918.

The low prices that have been prevailing on new potatoes for the past several days seem to have stimulated the demand and this week the market has been both firm and higher. No. 1's are selling generally at $3.25@3.50 per barrel, and No. 2's from $2.25@2.65. No. 1's in 150-lb. sacks are selling at $2.15@2.25, and No. 2's mostly at $1.50, with a few at $1.75. Old potatoes on the other hand are showing very little change from last week. Many of the supplies are running more or less poor, and while supplies are much lighter than last week the demand is not nearly so active. Pennsylvanias are selling generally from 90c@$1.10, mostly at $1. New York States are selling all the way from $1@1.25, the latter price being extreme top and only obtainable on small sales.

Sweet potatoes continue in very light supply and prices are ruling a little higher. Best New Jersey stock in ⅝ bushel baskets is selling at $1.50@1.60, and Southern at $2@2.15.

Vegetables

Asparagus from near-by points continues very plentiful, but under a good demand and movement the market cleans up from day to day at prices showing little change from last week. Colossal, 20@25c per bunch; fancy, 15@20c; prime, 10@15c; culls, 8@10c. Supplies from Maryland and Delaware are moderate and prices are ranging anywhere from 10@20c per bunch. Shippers should bear in mind that green Asparagus always sells from 2@5c per bunch higher than the white, grade for grade. Fancy green and wax beans continue in light supply, and readily command $2.50@3 per hamper. Poor and spotted beans, however, meet practically no demand, and such are very irregular in price, selling anywhere from $1@1.50 per hamper, some being so poor as to be practically worthless. Dried beans continue in ample supply, but the demand and movement is dull and prices show no change from last week. Marrows are selling at $13.50@14 per cwt.; pea and medium, $12@13; red kidney, $12@13.50. Artichokes have declined fully 30 cents per box, prices now ranging from $2@3, with the half boxes at $1@1.50.

New beets are in very light supply and the market is firm and high. Good stock is selling readily at 6@8c per bunch. Fancy carrots are scarce and bringing high prices. Old stock in barrels is selling at $2.50@3.25, and new carrots from 3@4c per bunch. Altho cabbage is selling much lower than last week, it would appear that the bottom has been reached and the market now seems to be reacting. Sales have been made as low as 75c@$1.25 per crate, but at this writing most sales are being made at $1.40@1.50, with a few at $1.75. Cucumbers are showing a very wide range in quality. Strictly fancy are scarce and about 50c per hamper higher than last week, selling generally from $4@4.50 per hamper, with choice bringing from $2@2.50. Egg plants continue in rather light supply an are possibly a trifle easier, fancy selling mostly at $3.50@3.75 per crate, with a few at $4; choice and small sizes, $2@2.50. Horse radish continues to sell slowly at $3@5.50 per barrel. Good fancy kale continues very scarce and is bringing good prices. Some fancy nearby Pennsylvania and New Jersey stock in barrels have brought from $2.50@3 per barrel. Lettuce is not selling as high as it did last week, possibly on account of not being as fancy in quality. North Carolina hampers are selling from $1.25@2; Eastern Shore, $2@2.50 per hamper; California Iceberg, $3.50@3.75. Pennsylvania lettuce is showing quite a range with an active demand for the best stock at $4 per barrel of 50 heads, with poorer grades ranging on down according to quality as low as $2.50 per barrel. Mushrooms are a trifle higher than last week, ranging all the way from 20@40c per pound.

Onions have taken a further decline from that reported in these columns last week. Supplies are quite heavy, there being at this time 34 cars on track and with the demand and movement slow the market is weak. No. 1's yellows are selling at $1.40@1.50 per crate; No. 2's, $1.25@1.40; boilers and culls, $1@1.15. Peas continue in very light supply and the market shows an advance over last week of from 50@75c per hamper. Fancy Telephones are selling from $4@4.50 per ½ barrel hamper and fancy small peas at $3@3.75. Parsley is light supply and firmer at $2.50@3 per barrel. Nearby radishes from New Jersey and Pennsylvania points are quite plentiful, moving freely at $1.50@3 per 100 bunches. Peppers continue in light supply and the market rules firm and active at $3@4 per crate. Pennsylvania and New Jersey rhubarb is showing very little change from day to day, selling mostly at 2@3c per bunch. Scullions are not so active and prices are somewhat lower, now ranging from 75c@$1 per 100. Under the daily increase from nearby Pennsylvania and New Jersey points, the spinach market is gradually seeking a lower level. Norfolk spinach is selling from 75c@$1.50 per barrel; Pennsylvania boxes, 50@75c; New Jersey baskets, 25@40c. The supplies of tomatoes are running light, strictly fancy being scarce and selling at $3.50@4 per crate. Ordinary to fair quality tomatoes are selling from $2@3 per crate with some poor selling as low as $1 per crate. White turnips are meeting practically no demand, the movement being very slow around $1@1.25 per barrel sack; this being about $1 lower than last week. Watercress remains about steady at 1½@2c per bunch.

Fruits

The supplies of seasonable fresh fruits continue very light and the market is ruling firm and active on all kinds. Supplies of strawberries continue very light and high prices are prevailing on fancy berries. At the same time some of the supplies are arriving in a weak condition and these are selling at lower and irregular prices. North Carolina berries have been selling all the way from 15@24c, as to quality; Norfolk berries, 15@25c; Eastern Shore, 10@25c. The light offerings of other fruits have been a big help to the apple market, prices on which have been ruling exceedingly high. Ben Davis have been selling from $4@6; Baldwins, $5@7; Russetts, $6. Boxed Winesaps have sold from $2.50@3.50; Newtowns, $2.50@2.80. These are about the only varieties on the market at this time.

Poultry

The market on live fowl has taken quite a drop since last week, prices now ranging from 30@31c. Spring chickens on the other hand are in such light supply that a sharp advance has been made over the high prices that were prevailing. Spring chickens weighing 1½ lbs. are now bringing the fine prices of 65@70 per pound, with smaller sizes at 58@63c. Staggy roosters are selling from 24@26c and old roosters are steady at 22@23c. Ducks are steady at 26@30c.

Eggs

The egg market is showing an inclination to ease off, altho no big decline can be expected at this writing. Nearby current receipts are selling at 35½@36c; nearby firsts, 37c; Western eggs, 35½@37c; Southern eggs, 34@34½c. These prices are about ½c lower than the prices prevailing last week.

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PITTSBURGH PRODUCE

Pittsburgh, Pa., May 13, 1918.

Country produce is active and distributors are handling liberal lots of both fruit and vegetables. Prices are well maintained on lines in light supply. In fruits there is a steady outgo of strawberries, oranges, apples, grape fruit and pineapples. The movement of vegetables includes white potatoes, celery, lettuce, onions, cabbage, tomatoes and other staples.

Asparagus, southern, $3.50@4 box; do., home grown, 75@85c per bundle. Beans, green, $2.25@3 hamper. Beets, $1.50@1.75 hamper. Cabbbage, old, $25@30 ton; do., new, $2@3 crate. Carrots, new, 35@45c doz. Cucumbers, $2@2.50 hamper. Horse-radish, $5.50@6 bbl. Lettuce, southern, $1.75@2 hamper; do. leaf, 40@45c basket. Onions, $1.50@1.75 sack; yellow, $1.65@1.75. Peas, $2.50@2.75 hamper. Potatoes, old $1.75@2.25 sack; do., new, $2.50@4 bbl; do., sweet, $1.85@2 hamper. Radishes, 25@35c doz.; $1@1.35 basket. Rhubarb, 20@25c bundle. Spinach, 75@90c bu. Tomatoes, $1.75@3.50 crate. Apples, $4@7 bbl. Strawberries, $5.75@6.25 crate; do., fair, $4.75@5.25.

Poultry, both live and dressed, continues in pressing demand at high prices, which are no deterrent to consumers. The demand is mainly for fresh dressed hens and pullets, but there is a fair call for ducks and an indifferent one for turkeys and geese. Guinea hens are slow while home dressed squabs meet with a ready market.

Live Poultry.—Hens, 33@35c lb; springers, 32@35c; roosters, 23@25c; turkeys, 30@35c; ducks, 28@30c; geese, 22@25c; guinea hens, $1 pr.

Dressed Poultry.—Hens, 40@45c lb; springers, 43@46c; turkeys, 38@40c; ducks, 35@36c; fowls, 40@43c.

Creamery butter was cut one cent a pound at Chicago Saturday and reduced the same here, effective today.

Elgin prints, 46@46½c; Elgin tubs, 45½@46c; New York cheese, 28@30c; do., Swiss, 37½@38½c. Selected eggs, 36½@37½c; eggs at mark, 35@38c. Goose eggs, $1@1.10 doz; ducks eggs, 38@40c.

Grain and Hay.—No. 2 yellow ear corn, $2@2.05 bu; No. 3 yellow shelled, $1.75@1.80; No. 2 white oats, 88½@89c; No. 3 do., 87½@88c bu; standard oats, 87½@89c bu; No. 1 timothy hay, $27@28 ton; No. 2 do., $24.50@25. No. 1 light mixed, $22@23. Rye straw, $14@14.50. Oat straw, $18@18.50. Wheat straw, $18@18.50.

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LANCASTER PRODUCE

Lancaster, Pa., May 13, 1918.

For the first time in half a year, butter was quoted lower than fifty cents a pound, some sales of country trades being reported at forty-five cents. The supply was liberal and demand good. Eggs and potatoes were also offered in large quantities, and prices remained unchanged.

Butter and Eggs.—Creamery butter, 55@60c per lb; country butter, 45c; fresh eggs, 33@35c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; live old chickens, 35c per lb.

Vegetables and Produce.—Asparagus, 5@8c bunch; spinach, 20c ½ pk; potatoes, 8@12c ½ pk; do., 40@75c per bu; new potatoes, 35c ½ pk; sweet potatoes, 25@30c ½ pk; new peas, 40c ½ pk; new beans, 25@30c ½ pk; tomatoes, 10@12c box; lima beans, 18c pint; apples, 25@35c ½ pk.

Grain Market.—Wheat, $2.10 per bu; chicken wheat, $2.10; ear corn, $1.45; corn, $1.55; rye, $1.80; timothy hay, $27@28 per ton; mixed hay, $26@27; wheat straw, $17@18.

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YORK PRODUCE MARKET

York, Pa., May 13, 1918.

Quotations in the various markets are stationary for this week with but a light showing of early spring produce.

Eggs.—32@34c per dozen.

Butter.—Country, 45@48c lb; separator, 48@54c lb. Milk, 10c quart.

Poultry.—Hens, 23@25c lb; dressed, 65c@$1.50 each.

Vegetables.—Potatoes, 5@10c ½ pk; 40@75c bu; cabbage, 5@10c hd; lettuce, 5@8c a hd; beets, 3@5c bx; radishes, 5@7c bch; onions, 3@5c bch; lima beans, 18c pt; soup beans, 15@17c pt; corn meal, 10@12c qt; turnips, 20@25c ½ pk.

Country Butchering.—Hams, 42@45c lb; sliced, 45@64c lb; bacon, 60c lb; bologna, 15c ¼ lb; dried beef, 16c ¼ lb; lard, 30@35c lb.

Fruit.—Apples, 8@20c ½ pk.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.20; rye, $2.25; bran, $2.50 cwt; middlings, $3 per cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.60; oats, $1; rye, $2; bran, $50 ton; middlings, $60 per ton.

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NEW YORK PRODUCE

New York City, May 13, 1918.

Butter is about 1 cent lower than last week. Cheese market is steady, and eggs are firm. Much dressed poultry is arriving in poor condition. Apples firm, strawberries lower. Most vegetables in liberal supply.

Butter. — Creamery, extras (92 score), per pound, 46½c; higher score, 47@47½c; thirds to firsts, 35@46c; state dairy, 36@43c; ladies, 30@33c.

Cheese.—Colored specials, 25½@26c; daisies, 25@25½c.

Eggs.—Fresh gathered extras, 38@38½c; extra firsts, 36½@37c; nearby white, fine to fancy, 41@42c; ordinary to good, 38@40c; browns, 38@39c.

Vegetables and Greens.—Asparagus, fancy $3@3.50 doz. bchs; prime, $1.75@2; culls, $1.25@1.50. Beets, per bbl. $1@1.50. Onions, per 100-lb. bag, 50c@$2.25. Potatoes, Jersey, $1.25@1.50 per 100 lbs. Carrots, $1@1.50 per barrel. Scullions, per 100 bchs. $1@2; spinach, per bbl. 25c@$1.25.

Apples.—Baldwin, $4@7.50; Northern Spy, $4@8; Ben Davis, $3.50@5.

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BALTIMORE PRODUCE

Baltimore, Md., May 13, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.15@1.25 cwt; do., New York, $1.15@1.25; Easter Shore, 75c@$1 cwt. Sweet potatoes, yellow, $4@5 bbl; $1.60@2 hamper. Asparagus $1.50@2.50 doz. Beets, 3@5c bch. Cabbbage, new, $2@2.50 crate. Celery, Florida, $2@2.75 crate; do., native, 5@6c bch. Cucumbers, $2.50@3 crate. Lettuce, $1.50@2 basket. Onions, yellow, $1.50@1.75 cwt; red, $1.25@1.50 cwt. Radishes, $1@1.25 basket. Tomatoes, $2@3 crate. Rhubarb, $2 per 100.

Fruit.—Apples, Maryland and Pennsylvania.

Butter.—Creamery, western, fancy, 46@47c; choice, 44@45c; pound prints, 47@48c; do., firsts, 45@47c. Nearby creamery, 40@41c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 34c; Easter Shore and Virginia, 34c; Southerns, 33c.

Live Poultry. — Chickens, 29@30c; do., springers, 55c@60c; old roosters, 18@20c; ducks, 27@28c; pigeons, 35c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $32; standard timothy, $31@31.50; No. 2 timothy, $30@30.50; No. 1 light clover mixed, $30@30.50; No. 2 light clover, $29.50@30. No. 1 clover mixed, $29.50@30; No. 2 $26@29. No. 1 straight rye straw, $18.50; No. 1 tangled, $17@17.50; wheat straw, $15@17; oats straw, $16@18.

Grains.—Wheat, bag lots, $2@2.14 bu. Corn, bag lots, white, $1.65@1.70 bu; yellow ear corn, $8.25@8.50 bbl. Standard white oats, 80½@81c; No. 3 white, 79@80c. Rye, No. 2 western, $1.90@2.10; bag lots, $1.75@2.

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PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 13, 1918.

Beef Cattle.—Offerings of steers, bulls and cows were light and the market ruled a shade firmer, with demand fairly active. Other descriptions were generally steady, with demand fair.

Steers, good to choice, $15@17; fair to good, $13.50@15; common to fair, $12@13.50; bulls, $11@13; extra higher; bulls, common, $9@11; cows, fat, per lb.; choice, 9@10¾c; fair to good, per lb., 7½@9c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $15@15.50; fair to good, $13@14.50; common, $10@12; Tennessee and southern, $8@13.50.

Sheep and Lambs.—Demand for sheep was about equal to the limited offerings, and values were steadily maintained. Lambs were quiet and without important change.

Sheep wethers, extra, $15@15.25; good to choice, $13@14; medium, $11@12; common, $7@8.50; ewes, heavy, fat, $13.50@15; lambs, choice, $21@21.50; do., medium, $18@19; inferior, $15@16.50.

Hogs.—The market ruled firm, with offerings moderate and demand fair. Quotations for best western, $19.50.

City Dressed Stock.—Steers, heifers and cows were in fairly active demand and ruled steady under light offerings. Other kinds showed no quotable change.

Steers, 21@26c; heifers, 21@23c; cows, 16@22c; calves, 25@26c; southern and barnyards, 16@18c; country dressed, 20@22c; sheep, choice, 27@28c; lambs, 34@35c; hogs, 25½c.

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LIVE STOCK MARKETS

East Buffalo, N. Y., May 13.—Cattle.—Receipts, 3800; slow; prime steers, $16.50@17.25; shipping steers, $16@16.25; butchers, $12@16.50; yearlings, $13.50@16.50; heifers, $10@14; cows, $6.50@12; bulls, $7.50@12.50; stockers and feeders, $7.50@11; fresh cows and springers, $65@145.

Calves.—Receipts, 3500, easier, $7@14.50.

Hogs.—Receipts, 12,800; slow; heavy, $18.25@18.40; mixed, yorkers and light yorkers, $18.40; pigs, $18.25@18.40; roughs $16@16.25; stags, $12@13.

Sheep and Lambs.—Receipts, 8400; active and easier; lambs, $11@17.85; yearlings, $13@15.50; wethers, $14.50@14.75; ewes, $6@14; mixed sheep, $14@14.25.

Lancaster, May 13.—Cattle.—Receipts, 1055, against 1080 last Monday; market sluggish, prices lower; good to fat steers, $14@14.50; medium to good steers, $13@14; common to medium steers, $11.50@12.25; good to prime fat bulls, $11.50@12.75; medium to good, $11.25@11.75; common to medium, $10@11.25; prime fat cows, $9.25@10.50; medium to good fat cows, $8.25@9.25; fair fleshed and common killers, $7@8; bologna cows, $5.50@6; common bolognas, $5@5.50.

Calves.—Receipts, small; 14½@15½c; best grades, 10@12½c.

Hogs.—Receipts, 192; market active, prices higher; best grades, $18.50@19; light rough, $16.75@17.75; heavy roughs, $12.75@16.25.

New York, May 13.—Beeves.—Receipts, 2870; steers, $13@17.20; bulls, $8.25@13.65; cows, $5@10.50.

Calves.—Receipts, 8400; steady; veals, $12@15.50; culls, $10.11; skim milk calves, $9@10.

Sheep and Lambs.—Receipts, 3700; dull; clipped sheep, $8@15; wool wethers, $18; clipped lambs, $15.50@17.

Hogs.—Receipts, 6100; weak; medium to light, $18.50@18.75; light pigs, $18.25; roughs, $16.75.

Pittsburgh, Pa., May 13.—Cattle lower; supply, 75 cars. Prime, $16@16.50.

Sheep.—Strong, supply, 16 double-decks. Prime wethers, $14@14.50; cull and common, $6.50@9; lambs, $10@17.25. Veal calves, $14.50@15.

Hogs.—Lower; receipts, 55 doubledecks. Prime heavies, $18; mediums, light yorkers, rough, $15@16; pigs, $18.40@18.50.

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NEW YORK HAY AND GRAIN

New York City, May 13, 1918.

Feed.—There was no particular feature to the market on Saturday. Prices naturally held steady in view of the limited spot supplies, but consumers are not interested. They have fair stocks in transit, sufficient to carry them for a time and apparently will not be in the market again on an active scale until new crop stuff is offered. Northwest mills have a little oat feed, for prompt shipment, on hand and are asking $32 per ton, also some barley feed at $37 per ton and corn feed meal at $57 per ton. Linseed meal is offered in larger volume and supplies are expected to accumulate. Contract orders is the only business passing at this time. Quotations (prompt Western shipment): Rye middlings nominal; oat feed, $32 per ton; barley feed, $37; linseed meal, per ton, $55.50; corn feed meal, $57 per ton.

Hay and Straw.—Market is still weak on medium and low grades of hay. Trade at 33rd street on the high grades is quiet, but in Brooklyn the moderate arrivals of No. 1 and No. 2 are clearing well with the exceptional sales still reported above our top quotations.

Hay.—No. 1, prime, $29@30; No. 2, $25@28; fancy clover mixed, $26@28.

Straw.—No. 1 rye, $18.

Corn.—No. 3, $1.60.

Oats.—No. 2, white, 82@83c.

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PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., May 13, 1918.

Baled Hay and Straw.—Receipts, 36 tons of hay and 1 car of straw. Hay of fine quality was kept well cleaned up at firm prices. Straw showed little change. Quotations:

Timothy hay, according to location—No. 1 large bales, $29@30; No. 1, small bales, $29@30; No. 2, $27@28; No. 3, $23@25; sample, $17@20; no grade, $14@16; clover-mixed hay, light mixed, $27@28; No. 1 do., $25.50@26.50; No. 2, do. $24@25.

Straw. — No. 1 straight rye, $21@22; No. 2 do., $21.50@22; No. 1 tangled rye, $19.50@20; No. 2 do., $18.50@19; No. 1, wheat straw, $18.50@19; No. 2 do., $18@18.50; No. 1 oat straw, $19@19.50; No. 2 do., $18@18.50.

Corn.—Car lots, No. 2 yellow, $1.73.

Oats.—No. 2 white, 84½@85c.

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PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., May 13, 1918.

Butter.—Offerings of fine creamery were light and the market advanced 1½c, with a good inquiry for this class of stock. Medium grades sold fairly at inside prices. Prints were in small supply and 1c higher, with demand equal to the offerings.

Western, fresh, solid-packed creamery, extra, 46½c; higher-scoring goods, 47½c@48½c; extra firsts, 45@45½c; firsts, 44@44½c; seconds, 41@43c; sweet creamery, extra, 47½c; under grades, 43@46½c; near-by prints, extra, 50c; jobbing sales of fancy brands at 51@53c; extra firsts, 48@49c; firsts, 45@47c; seconds, 42@44c; garlicky, 39@43c.

Receipts, as compiled by the Bureau of Markets, 2253 tubs of butter and 8761 cases of eggs.

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NEW YORK MILK MARKET

New York City, May 13, 1918.

The market has been very satisfactory the week past owing to the warm weather. Practically all of the surplus has been absorbed, an unusual condition at this season of the year. Commission rates for Grade B to the producer in the first district are $2.46 a hundred for 3 percent milk; $2.70, or approximately 5.75 cents a quart, for 3.6 percent, and $2.86 for 4 percent. Receipts of milk and cream in 40-quart cans for week ending May 11 were as follows:

Railroad	Milk	Cream
Erie	44,414	3,869
Susquehanna	6,056	30
West Shore	10,940	1,120
Lackawanna	67,410	2,190
N. Y. Central (long haul)	129,197	3,313
Ontario	44,504	5,405
Lehigh Valley	47,950	1,681
New Haven	4,586	69
Pennsylvania	11,375	275
Other Sources	7,480	235
Totals	373,912	18,187
Same week last year	374,194	17,116

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EGGS Black and White Langshans, Light & Dark Brahmas, Barred Columbian and Partridge Plymouth Rock, Partridge and Columbian Wyandottes, Pekin Ducks. 15 for $1.50 prepaid.
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Chicks Broilers $11.50 per 100, S.C.W.Leg. and S.& R.C.Br.Leg. $12.50, R. I. Reds both combs, $13.50. Brd. Rks. $14.50. Buff Rks. & Buff Orp. $16.50 Del. Parcel Post. Satisfied Customers-Prompt shipments. Sunny Side Poultry Farms & Hatchery, Blanchester, O.

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

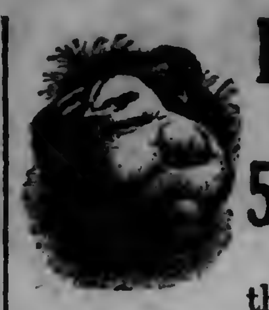
Collar Galls.—We have two horses that are troubled with sore shoulders. Both are doing ordinary farm work, not much heavy pulling. Before we commenced plowing these horses were seldom worked, but had been regularly exercised. So far as we know the collars fit fairly well and are kept clean. Never before have we had such trouble. Altho we have applied different commercial gall cures we have failed to heal the sores and reduce swelling. H. G. K., Cabot, Pa.—Dissolve ¼ lb. acetate lead and ¼ lb. alum in one gallon of clean cold water and apply to sore shoulders, four times a day. Occasionally dust on equal parts oxide zinc and boric acid to wounds and it will have good effect. The collar should not be too short, neither too narrow nor too wide.

Lice.—Rough Coat.—I have three three-year-old colts that are lousy. They are all low in flesh and have long shaggy coats, which none of them seem to shed off as rapidly as they should. I have fed them wheat bran and a few ears of corn daily during the winter, besides they have had plenty corn fodder, but it was not of best quality. These colts were wintered out dooors, but had good shed to shelter them from storms. They have not been groomed and am unable to state how long they have been infested with lice. A. H. M., Canoe Creek, Pa.—You will benefit the colts right away by clipping them. This will simplify your work in destroying their lice, which by the way are blood suckers, and if numerous reduce the strength of stock. Apply one part coal-tar disinfectant and 30 parts water daily until all the lice are killed. In order to destroy the nits, apply one part cider vinegar and eight parts water occasionally. I advise you to increase the colts' grain ration. Your stable or shed where the colts have slept should be disinfected, or sprayed with same remedy you apply to kill lice.

Mange.—Several of my cattle seem to itch, the skin under eyes and neck is rough and unhealthy, quite dry and scurvy like. What had I better apply? D. S., Elroy, Pa.—Apply one part sulphur, one-half a part carbonate potash and four parts fresh lard to itchy sore parts of skin, twice a week. Give each one of them a small teaspoonful sulphur at dose in feed daily for 10 days or more.

Lumpy Jaw.—I have a two-year-old heifer that has some kind of lump jaw. I first noticed small bunches last winter, now there are a group of them, but not unusually large. What can be done in line of treatment that will cure her? G. L., Adelia, Pa.—Doubtless this is a case that could be quickly cured by cutting out these small bunches, or if you will clip hair off and apply one part red iodide mercury and four parts lard every ten days and give her one dram doses potassium iodide, 3 times a day, she will get well.

Stunted Pig.—I have a pig that was farrowed last October that has seemingly not gained a bit of growth all winter. He is unthrifty, skin is scurvy like and so far as I can tell he is not sick. He has been well fed on corn, oats and middlings. I am greatly disappointed in him as I fully expected to make a breeder of him. C. W. P., Annandale, N. J.—Doubtless the growth of this pig has been stunted, the result of indigestion or perhaps worms. It would be a mistake to keep him for breeding purposes, he will always be below size. He should be turned on grass and fed plenty of grain which will start him growing. Give him a teaspoonful ground gentian at dose in each feed.



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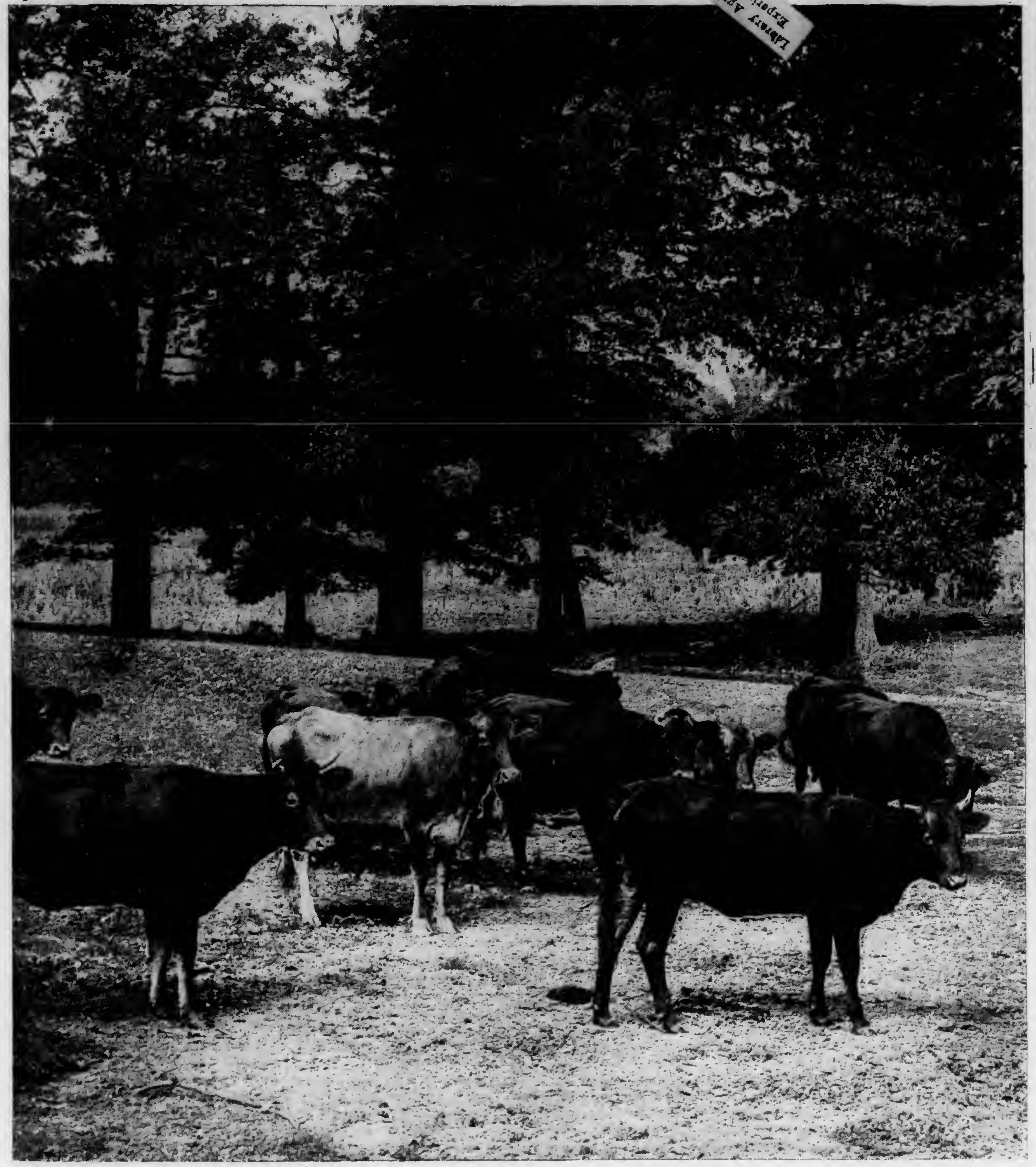


Farmers Are Called To Mobilize

Some Timely But Neglected Duties Pointed Out

It is a hazardous undertaking to write down for the public eye preliminary impressions of anything, let alone about disclosures coming out of the war. Nevertheless, some predictions may be safely made even now.

A world's famine, like a huge cloud in the sky, is not only visible but grows nearer with each passing day. This is not a delusion or wild idea. Predictions of over a year ago from unquestioned authorities are already making themselves manifest; Government officials, the press and the public are disregarding all warnings more or less, because this, the greatest of all catastrophies, is completely over-shadowed (eclipsed, so to speak) by our entire engrossment in the preparation for war.

To be sure, the producer will not be found in the least advantageous position during such a turbulent period. But even so, it behooves the farmer to look well to his halyards in the face of a storm of such magnitude. No one can pretend to know the real facts of the situation, but it is difficult not to believe that the German drive on the Western front has hastened matters to a considerable extent so far as America is concerned at least. The pressing need on the firing line for every trained soldier available will increase the perplexity of the already over-taxed shipping facilities. We received instructions some weeks ago to sweep the granaries clean, while all the time millions of bushels of grain are piling up on the wharves at Australia and other distant ports, for the very good reason that the shrinkage in ships reached the point several months ago where it became necessary to draw upon the supply nearest at hand to meet the demands of our allies. There is no question but that this country will give her very all if need be, and as the situation becomes more intense people will be jostled into serious thought. Our highly costly system of living, whereby 65 percent of the consumer's dollar, a great part of which goes for work of no social value, will come up for review. No one doubts the final outcome. The ultimate consumer under such circumstances must win a decisive victory in the curtailment of prices on all food stuffs. Is agriculture sufficiently organized to demand a seat at the council table, and present a claim for a price to the producer which shall be an increase over the farmers' 35 percent of present prices?

The two classes of people have no way of dealing directly with each other. They have to deal thru representatives. It would be absurd to speak of negotiations between the farmer and the consumer. For when you look around to find the farmers, you discover several million people spread thruout the length and breadth of the land, with certain common habits, ideas and loyalties, but nowhere do you find them banded together in sufficient numbers to have what might be termed a "representative negotiator".

In recalling the many appointments to advisory boards made by the President during the past year, the farmer has evidently not been thought of in sufficient numbers to gain recognition. To be sure, there are some thirty million people working and living on farms, but a large percentage have never elevated themselves above the great mass that go to make up the every-day citizen. The farmer who has never affiliated himself with an association that is working for a better and more enlightened agriculture is no more a farmer than an oarsman is a sailor. Paddling one's own canoe in the industrial world is as impracticable as the use of row boats would be in carrying on sea trade and coast defense. Co-operation with a unity of purpose is what makes a large body of men formidable and effective. Germany treated America's threats of war with more or less contempt because they were reckoning with our small army and not a nation of over a hundred million people.

The farmers' nonentity in the world of affairs today is due to prejudices, customs and the failure to support a co-ordinated effort of any kind. Take the labor situation for a recent example. Right here we find collective bargaining going on thru a Labor Policies Board with representatives of organized business and the American Federation of Labor together with two members appointed by Secretary of Labor Wilson to represent the public. From all indications, the matter of hours, wages, etc., has been adjusted for the duration of the war, to the apparent satisfaction of every one concerned; with but one exception, the food producer whose part in the nation's war stands second to none, has not been considered. Men not wanted for other work, and boys and young women are thought to be all that is necessary to fill in the gaps on the farms. Does any one suppose that such an assumption could have gained headway, to say nothing of the omission from the conference, were it not for the fact that the farmer has been neglectful of his duty in placing agriculture on the front line where it could not fail of being a potent factor?

This is only another indication as to which way the wind blows. But after all has been said, providing space would permit a discussion of the hundred and one different subjects that might easily be reviewed, the farmers should require no other incentive to spur them on to action than the opportunity brought about by the war to crush their arch enemy for all time. This enemy of which I speak is a common enemy to society, standing between the producer and the consumer, keeping them as widely separated as possible, fixing prices both ways, conducting grain elevators, storage and cold storage plants, whose sides bulge with their load during the time crops are marketed, to be drawn upon during off-seasons when prices are pushed up to a desirable altitude.

Mailbox in Concrete Fence Post

This special privilege system, operating as a distributor, exercising an influence at the national and state capitols, has reached its last inning. Public opinion, driven by dire necessity, once aroused, will make short work of such a drain on the wealth and vitality of the nation. Will the farmers be in at the killing? That is the question.

Organized labor has a representative at Washington and little trouble in gaining the President's ear when important matters come up for attention. The farmer must gain a similar position when "hungry America" demands a more direct marketing system; otherwise, agriculture may be found burdened with just as heavy a load as it has always had to carry.

I want to impress upon my readers that the kind of co-operation advocated in this article has become a necessary duty. Strikes and force methods are despicable and should be unlawful, but when it comes to the point where organized action is required to protect family and property from conditions that have brought about a situation whereby the average man of industry cannot prosper, it is time for the farmer to leave off plowing long enough to attend and give the agricultural association in his community undivided support.

During times like these, the Department of Agriculture should have been an active agent working for better conditions on the farms, thereby enabling agriculture to strengthen its position. In this respect it has failed, as well as neglected pressing problems that came up for attention. Secretary Houston's policies have been the cause of much unfavorable comment, and justly so, for obvious reasons. It is no part of my purpose to criticize the administration except so far as it is necessary to show that agriculture has been slighted, probably unintentionally so to a considerable extent, but nevertheless responsible for a reaction which is viewed by Mr. Hoover with some alarm.

If the farmers are to be held responsible for production they must be granted the right to participate in the formulation of production policies as well as be granted agencies for the adjustment of difficulties that may arise from time to time. Such representation and participation can only exist where the farmers are organized.

Canada is in a better position than the United States to meet the crisis, because of a somewhat better labor situation, its efficient coalition government and, above all, because of the spirit of effective co-operation that dominates in spite of minor discords. The farmers' associations, the bankers, and a government that has done much to help remove obstacles are striving to attack this huge problem in a practical way. The United Farmers of Alberta and the United Grain Growers' Limited and similar organizations which began a few years ago as small local co-operative farmers' associations, are a power in Canada today that has been responsible for much good in an agricultural way.

A Canadian writer states as follows: "Western Canada now has 43 members in the House of Commons as against 27 in the last Parliament, but even more significant is the fact that the organized farmers are represented."

The war has been a great stimulus to centripetal motion in the masses. Labor is going to be a dominant figure in the reconstruction period after the war. Mr. Schwab forsees the man without property, the workman who labors with his hands, as the man who will dominate the world. In the face of such a statement, the Labor Party in England has become 90 percent organized during the past two years. Overtures have been made to the farmers to join hands and there is little doubt but that a gigantic scheme to amalgamate forces is already under way.

Speaking of America, the farmers can ill afford to be hampered by labor with its fixed habit of thinking and acting in terms of immediate wages and hours, instead of in terms of control of economic conditions. The public will be exceedingly wary of radical innovations and ready, upon the slightest provocation, to resist any economic changes the farmers propose unless they are entirely free from entanglements that can be questioned.

An entering wedge at Washington has been made by the Federal Board of Farm Organizations. This should be followed by a federation of all associations pertaining to agricultural improvement. Opportunity is surely knocking at the farmers' door this time.—Nathan Price, Chester Co., Pa.

By the Way

By

Father Penn

It is not too soon to order seed, implements, etc., for the sowing of cover crops. Altho every factor in the farming business is in such shape as to cause neglect of such work—the price of seed being high, labor scarce and freighting uncertain—it is also true that every factor in favor of sowing cover crops is intensified at this time. In fact, it is doubly important to make special effort to see that the corn fields and other fallow fields shall not lie bare and idle, but shall raise some crop to save fertility and add to their productiveness.

It is not too late up to the middle of June to plant soybeans for hay. A bushel to the acre drilled in good soil will produce two or more tons per acre of splendid dairy forage and help out wonderfully in keeping the brood sows economically next winter. The price of protein feeds during the past two or three years has opened the eyes of a great many stock keepers to the necessity of raising as great a proportion as possible, but there are still many who will not change the kinds of crops raised to meet the changed conditions. Not only should there be a much more general use made of the comparatively new crops, but the raising of clovers might well be doubled thruout most of the east. Too many farms lack a sufficient amount of lime for best success, and others lessen the value of their hay for home use by sowing too large a proportion of timothy.

The question is often asked, "Does it pay for the average farmer to spend time and money trying to grow alfalfa since success in the majority of cases is uncertain while other legume crops are comparatively easy to grow?" This is a perfectly sensible question and one which under present circumstances may be answered in the negative. Except on farms where alfalfa has been established and inoculation secured, time, land and labor are now too precious too risk on a gamble—especially on a scale of any extent. I am aware that such advice is not orthodox when compared with past teaching, but since it is safe to assume that nine out of ten men who have tried it in the past have failed the first time at least, is it not wise to forego uncertainties until time and space are less valuable? Wherever it is possible, however, alfalfa will furnish the greatest and most economical results by using it as a summer pasture for growing swine. They need little else besides good water and a little corn.

A trade paper remarks that, "The pampering which farmers have received from the government has made them a whining class". It is not worth while to get worked up over such expressions. Unsympathetic people are likely to arrive at that conclusion because farmers protest against unfairness and injustice. Much of such protest has been made mainly in the shape of fault-finding without an effort to remedy conditions and the critical outsider has jumped to the conclusion that farmers are whiners and pessimists. This is not true. Altho much of the work and experience is calculated to discourage, yet the environment and its influence upon those who live in the country tend to keep alive the spirit of hope and ambition, and the world continues to be fed. Of course, there are some real pessimists, but the proportion is lower than in many other classes.

A gentleman in referring the other day to a woman of mutual acquaintance said, "She is the prize pessimist". That's not an enviable reputation. To be known among our friends as a "kill joy," or "crape hanger," is only slightly less objectionable than having the reputation of being a chicken thief or a pickpocket. They all take something from you without giving anything in return. The long-faced, dyspeptic pessimist tends to destroy hope, lessen ambition and spread gloom where joy might exist. There are enough sobering influences come into every life without having imaginary ones sung in a minor key all the time. At this of all times everyone should make special effort to curb their imaginary forebodings since there is enough real trouble in the world.

The Automobile in Hot Weather

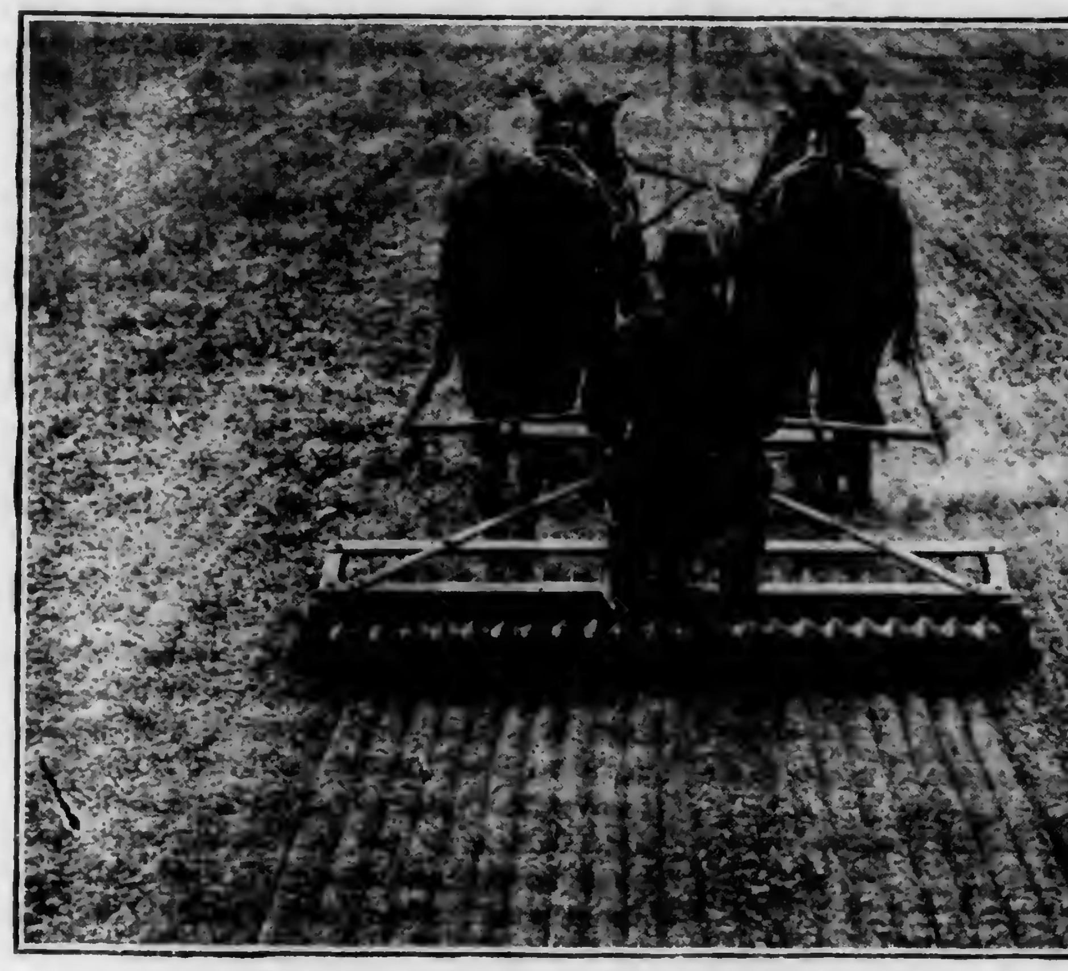
With the production of automobiles greatly cut down, and tire prices constantly growing higher, it behooves the automobile owner to give unusual attention to his machine this summer. It seems difficult to persuade many people to believe that more tires are ruined by under-inflation than by over-inflation. There is a popular belief that if tires are inflated to their rated capacity in hot weather they are likely to blow out. The truth is that there is little danger of a blow out unless the tire is weak at some point. On the other hand, if the amount of air in the tire is allowed to run low, so that the tire spreads, the side walls are broken down and a blow out invited. Still, when the weather is extremely warm, it may be well to run the tires with about ten pounds less of air than is recommended by the manufacturer. This is especially true when traveling is to be done over asphalt or artificial road surfaces of any kind, because there is greater friction than when running on dirt roads, and the tires heat up more. It is the part of wisdom to carry a gauge and test the tires after every day's run, because a leaky valve is likely at any time to cause a tire to run soft. It is almost impossible to tell by the eye whether a tire is properly inflated.

When the same size tires are used all round considerable economy can be affected by transferring those on the rear wheels to the front wheels after they show considerable wear. They will run much longer in front than they would if left on the driving wheels. If you carry a spare tire keep it in a case or at least do not allow water to remain in it after being caught in a shower. If you have to change a tire, be certain to use a moderate amount of talc because in hot weather the tape is likely to adhere to the inner wall of the tire and be damaged when removed. It is economy for the man who runs a small car to use oversize tires. The cost is not very much greater and the tires will last very much longer; moreover, the car will run easier.

The fact is often overlooked that there is a real saving in gasoline if the tires are kept fully inflated. Less power is required to propel the machine than when the tires present a broad surface, and consequently drag a little. It is also economy to make the mixture a little leaner when warm weather comes. The car will give more speed and act better, too. If you are not familiar with carbureter adjustment, you will find it worth while to consult an expert.

Naturally, a machine heats up much more quickly in hot weather than when the air is cool. Water evaporates and it may get low in the radiator before that fact is realized. Consequently it is well to look to this matter each day before starting out. With some automobiles it is quite a common thing for the fan belt to become loose, so that the fan does not revolve as rapidly as it should. When this happens the water is sure to boil and the engine is likely to become overheated. Not infrequently a fan belt breaks so that the fan stops revolving entirely. Look to the fan belt whenever you find that the water in your radiator is boiling.

Water in the storage battery disappears much faster in warm weather than when the weather is cool. It should be replenished every week. Grease often shows up in different parts of the car when the weather becomes warm as it gets softer then. Be sure that you wipe off all surplus grease from around the cups and turn the cups down tighter. The grease collects dirt, some of which may work into the bearings. Of course, you inspect your car regularly to be sure that all the grease cups are filled. Altho most cars run best with a certain grade of oil, it often happens that better results are obtained in summer with a slightly heavier oil than that used in winter. Also, when a car has been run several seasons, it is likely to give better results with a heavier oil than was needed when it was new, unless of course it has been recently and thoroly overhauled.—E. I. Farrington, Mass.



An Ideal Seedbed is Fine and Firm But Not Flat

CUT CLOVER EARLY

Clover must be cut early in June in the southern half of the state and about the middle of the month in the northern part if the second crop is to be harvested for seed. In this way the later crop will escape the ravages of the clover seed midge, a small maggot that lives in the blossoms and by its feeding prevents seed development.

The midges appear in late May and lay their eggs in the clover heads. The small maggots feed in the heads until late June, then fall to the ground, pupate and later emerge as a second brood of flies late in July or early in August. When the crop of hay is removed early in June, the insects die as the hay is cured and the next crop is free from any possibility of severe attack. Pasturing the field until about the middle of June brings the same result.

CONSERVING FOREST RESOURCES

A land owner of Baltimore County, Md., who had a 100-acre tract of timber called on the state forester last winter to make an examination of this land. He wished some practical plans of improvement. The plan prepared after the examination was accepted by the owner and in March a forester marked the trees to be cut and estimated the values. There was matured timber but also a heavy growth of "weed trees" which must be removed, root and branch, that the better young trees might have a fair chance for growth and development.

The thrifty, young trees of valued kinds were left. Over-mature ones, defective or diseased, were eliminated as were the matured ones. A forester with two assistants did the work of marking. Cost was $20; value of trees, $1,772.04.

News of the Milk Markets

The June Price

We finally got by the first of May more easily than was expected. The real trouble seemed to be the Bordens. They bolted but finally came back, this being due we understand to a larger deal including June and perhaps more. On the 27th of April there was an agreement by which the price for June was set at not less than $1.80 at 150 miles from New York, for 3 percent milk and probably will be no more. We know that the retail price for quart bottled milk of "B" grade is set at 13 cents for May. We are fearful that the same price is fixed for June, altho the producers pay nearly a cent and a half less. Perhaps it is unfair to assume this but it is in keeping with much good business of the distributor. The League did a fine thing when it notified the local branches that the Bordens had come into the agreement, as they did the evening of the 27th, by telegraph.

While June milk is admittedly low it is possible that with the surplus on the market and the unsettled condition of the cheese and butter markets it may be about all we can reasonably expect. Many farmers, since grain feeds have gone so high, have cut out winter dairying to a degree and are producing a larger proportion of summer milk. It would seem as tho there ought to be a demand for all the milk produced next winter, but that depends much on the mental attitude of the consumer. If he continues to believe that the dairyman is growing rich at his expense he may still cut down his orders for milk and let his family go hungry for it in order to get even, as he thinks, with the farmer. It is stated that the Milk Commission will meet again May 20th and again go over costs and see if they cannot make some decision that will settle the milk question for the remainder of the summer.

Option on Plants

In the April bargain with the Bordens it is understood that the League went further in some ways than appears on the surface. This agreement gave the League options on the Borden plants and the Bordens agreed to buy all their milk from the association and do with non-league milk whatever the League advised. They also agreed to pay to the League on each hundred of milk which is due from every member of the League on each hundred of milk that is sold by the League, and to do it without further signing of authorization papers. The one hundred dealers in the conference board have heretofore refused to pay this commission unless authorized to do so by each man signing such a request, and the result has been that many farmers have neglected or refused to pay their rightful share toward the expenses of the League. This statement relative to the commissions is signed by the vice-president of the Bordens and by the president of the League, and is posted on the door of each of the 250 plants of the Bordens. This it is believed will eventually force all dealers to pay this commission.

The information relative to the purchase of the Borden plants is not so authentic, but there is almost certainly an option granted on their purchase. It does not seem that there can be a purchase made by the League without first getting the membership interested in it and this will be slow. It may be that this option is intended only for local farmers where the plants are located. A little later we will likely know just what is being aimed at by this option.

Even if we have to take the $1.80 for June milk and let the dealers sell at 13 cents a quart, it will be some satisfaction to know that all League milk is taken. It will be necessary to take somewhat lower prices if dealers have to manufacture some of it as is claimed now. While the June price here with us is 8 cents less than a year ago, the League claims that for April, May and June they have made the price 37 cents higher than last year. I have figured somewhat on this and make it 30 cents for us up-state. The present abnormal situation is said to be the cause of the cut.—H. H. L.

June Drop

The early May trouble with the milk dealers of New York has again been settled temporarily without a strike. Concessions have been made by the Dairymen's League towards this end, and it is probable that the June price of milk will be $1.80—a big drop. This was because of the big surplus of milk now existing and which will increase thru June. There is also a great surplus of foods made from milk to be forced onto the market to make room for new stocks. It is hoped that this new price will enable all dealers to continue in business. The Federal Milk Commission for once reduced the dealers' price to consumers one cent a quart for May, and may take further action on June retail prices. The average city milk will test about 3.3 percent butterfat, making the April price to farmers about 5.8 cents a quart. No further recoups will be made after the 12 cents per cwt. on the April price. A few small manufacturers have not yet agreed to pay League prices but it is thought that they will.

Option on Plants

Perhaps the most momentous milk news for years is that the Dairymen's League has secured a six-months' option on all Borden plants. If a sale is finally consummated it will be the most far-reaching piece of co-operative action ever accomplished by farmers. Borden's are the largest distributors of fluid milk in New York and it is probable that if the deal is finally consummated that the League will eventually obtain control of other companies and the entire distributing business. The obtaining of the option was brought about by the very serious market conditions and the troublesome surplus of milk and milk products.

Receivers' Settlement

The receivers of the Mutual-McDermott Dairy Company are trying to buy up farmers' unsecured claims, at 10 to 25 cents on the dollar. There are $780,000 in these claims and the trustees have on hand assets to the value of $500,000 and will have $600,000, enabling them to realize 6 percent on the claims. Farmers are warned not to sell their claims at too low a figure.

Milk producers of the Auburn district are asking 7 cents a quart, and the dealers of the city will raise retail prices to 12 cents. State dairymen are interested to know that the Canadian Food Board has purchased the entire surplus of the country's supply of cheese, butter and condensed milk at standard prices, or 23 cents for No. 1 cheese and 22 and 22½ cents for inferior grades, f. o. b. steamer at Montreal. The Canadian cheese output amounts to about $40,000,000 a year, and is thus put on a safe basis. Our country may well follow the example and make use of the burdensome surplus stocks.—F.

Build a Silo

Stop wasting 40 per cent of the corn crop. Make green pastures last through the winter.

A silo is a crop savings bank—a bank that you will own, and pay the profits from to yourself. Many silos have paid for themselves in one season. After that they return 100 per cent profit yearly.

Build a Concrete Silo

—because concrete is rotproof, ratproof, windproof, fireproof, permanent.

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"Good to the Last Drop"

Raise Your Calves on

Blatchford's Calf Meal

and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.

Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Company, Dept. 98 Waukegan, Ill.

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Write today and get this wonderful book about silage and dairy profit. Tells why Harder Silos are big money earners. Send postal now to

HARDER MFG. CO.
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A MILKER That Milks

without stripping after—without injuring your cows. Investigate this milker!

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Dept. P. Lancaster, Pa.

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TRADE MARK.

ROSS SILO FILLERS with STEEL BLOWER AND CUTTING CYLINDER

The Ross Cylinder type Silo Fillers No. 18 and 20 with 6 Fan "DISTRIBUTION LIFT" LOW SPEED "STEEL" BLOWER are The Silo Fillers that operate successfully with 10-20 and 12-24 Tractors.

No Silo too high or requirements so great but what the ROSS Silo Filler will do the work with ease.

Reasons for this fully explained in ROSS Catalog. No limit to our guarantee because there is no limit to THE ROSS.

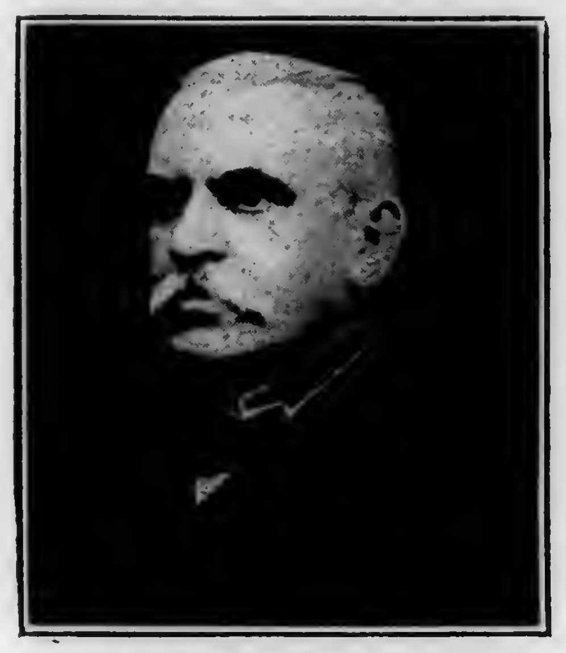
For jobbing work and extra heavy neighborhood work these Silo Fillers have no equal. Individual Guarantee with every machine. Our proposition is especially interesting to Early Buyers.

THE E. W. ROSS COMPANY Box 161 SPRINGFIELD, OHIO 68 Years' Experience

Machinery and Repairs carried at convenient points.

VETERAN JERSEY BREEDER DIES

Another of America's veteran breeders has answered the last roll call. Mr. Henry N. McKinney, of the firm of Ayer & McKinney, prominent as the owners of Meridale Jerseys, died at his home in New York, April 26th. Mr. McKinney entered the employ of Messrs. N. W. Ayer & Son, advertising agents, Philadelphia, in 1875, when 29 years old. Three years later he became a member of the firm, and aided in making that house one of the largest advertising agencies in the world.



The Late Henry N. McKinney

Mr. McKinney and Mr. Ayer were associated in the early days of Jersey breeding in America. Meridale Jerseys became a working herd in 1888, and is now one of the largest as well as one of the oldest in the country. Mr. McKinney served as vice president of the American Jersey Cattle Club in 1892-93 and as a director of the club in 1892-94. It is interesting to recall that Mr. McKinney purchased the entire Baron von Richtofen herd of Jerseys in Colorado, in 1890, and brought it East. He paid $50,000 for the 103 head, making the largest purchase of blooded stock in America up to that time. By this purchase he kept intact a famous line-bred St. Lambert family.

PROTEST LOADING MILK

Waste of Valuable Time

For years there has been widespread, tho unorganized, dissatisfaction among farmers with the railroad regulation that compels the individual milk shippers to assist in loading milk cans from station platforms into the milk cars. This practice has been defended by the railroads on the grounds thas it expidited the movement of combination milk and passenger trains, and was an important consideration in arriving at milk traffic rates. Farmers west of Pittsburgh have recently secured relief from this practice thru a decision of a Public Service Commission. This gives grounds for renewed hope to farmers in the central and eastern parts of the state. The Inter-State Milk Producers' Association has recently taken the matter up with representatives of the Pennsylvania and the Philadelphia and Reading Railroads in an informal conference, but to date the appeal has been turned down.

The farmers' representatives showed that dairy farmers are losing much valuable man and horse labor thru this practice, labor that should be in use on the farm taking care of the rush of crops. Many times trains are not on schedule time and some are frequently hours late. All of these delays keep both farmer and his team at the station and away from work that ought to be done at home. The practice was attached as being an economic loss to the country, since it was shown that the employment of extra labor by the railroads would not cost as much as is now lost by farmers whose horses are idle all the time they have to give to this loading. All agreed that when the railroads were able to show before the Interstate Commerce Commission the amount of the increased expense entailed, the farmers would recognize such claim as valid.

The increased cost to the railroads necessary to handle milk as they do other classes of freight cannot, from the nature of the case, equal the loss of time which is handicapping those who have to load the milk at present. We feel that the desired relief is in line with the policy of the Government to sustain and if possible increase farm production this year. Farmers are offered many suggestions these days in regard to labor. Some are practical but most are visionary. Here is a concrete proposition that should receive the support of all those interested in conserving time and increasing effort on the farm. The Inter-State Milk Producers' Association will press the appeal. No matter where you are located, write us and give your experience, and we will pass the information on in an appeal to those higher up. Act now before it is too late for this season's crops.—Robert W. Balderston, Secretary Inter-State Milk Producers' Association, Heed Bldg., Philadelphia, Pa.

DON'T WASTE SKIM MILK

Because skim milk is not profitably utilized for human food, the loss from waste of this important product amounts to more than the total food value of all the meat produced in the United States, according to the U. S. Department of Agriculture. The Missouri College of Agriculture in pointing out the value of cottage cheese as a human food, calls attention to the fact that in every pound of cottage cheese there is about one-fifth of a pound of protein, nearly all of which is digestible. Meats, on the other hand, usually contain less protein and besides have a certain waste, such as bone and other inedible material. Cottage cheese does not contain quite so much energy-producing material as meats, but nevertheless supplies energy much cheaper than meats. Large quantities of skim milk which normally go to waste could be saved for human consumption by making it into cottage cheese.

THE "ACID" TEST OF VALUE

At an auction sale the buyer makes the price.

Auction prices are apt to be lower than the real value warrants, rather than higher.

In any case, auction prices represent the estimate of value placed on the article by the buyer and not the seller.

During the past few months, the cow owner's appreciation of the unusual values offered in De Laval Cream Separators has been demonstrated in a most remarkable way.

From one state after another have come reports of the sale of De Laval machines at farm auctions—machines which had been in steady use for several years—at prices, in most cases, only two or three dollars less than the sale price when new; sometimes at practically the same price at which the machine was sold when new; and, in several instances, at even more than the original list price.

In February, at a Missouri auction sale, a De Laval in use two years was sold for $1.25 above the original purchase price. In Kentucky a farmer paid for a De Laval $2.00 more than the original price, at an auction sale. Last January, in West Virginia, a second-hand De Laval sold at auction for $2.50 less than the original catalog price. On January 15th, in Ohio, a De Laval machine in use a year was sold at auction for exactly the same price it brought when new, and at another point in Ohio a De Laval in use several months brought several dollars more at auction than the original list price. In the province of Ontario, early in April, a De Laval in use since 1916 brought at auction a price $5.00 higher than the owner paid for it when new.

In contrast with these prices paid for De Lavals at farm auctions, it is interesting to note that when other makes of cream separators are offered they are usually listed simply as a "cream separator," and not by name. Often there is no bid for such machines and their usual auction prices run from $10 to $15. We have never heard of one that sold at auction for half its original cost.

Perhaps you may not have had an opportunity to learn of the cleaner skimming, easier turning, the great durability and the splendid service given by the De Laval machines, but here is the strongest and best sort of evidence that those who do know cream separators appreciate that the man who buys a De Laval gets good and generous value for the purchase price. And further that even after a De Laval has been several years in use, it is practically as good as new.

If you are without a cream separator or in need of a new or better one, why not see the local De Laval agent immediately? If you don't know him, address the nearest De Laval office as below, for any desired particulars.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York
29 E. Madison St., Chicago

Green Mountain SILOS

are built to stay. Best materials and workmanship maintain the Green Mountain reputation for quality. Creosote dipped staves, close-fitting, safe-like doors, and new guy-wire anchorage system make a perfect silo. *Write for descriptive folders.* Save by ordering early.

The CREAMERY PACKAGE MFG. CO.
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TIGHT AS A DRUM

A PERMANENT SILO

Every Economy Silo is equipped with the Storm Proof anchoring system that makes it absolutely permanent. Ensilage is always fresh and sweet—it can't spoil in an Economy Silo. Perfect fitting doors make the Silo perfectly air-tight. Hoops form easy ladder. Built of long leaf Yellow Pine or Oregon Fir. You can't buy a better silo. Also all sizes Water Tanks. Our motto is quality through and through. Factories at Frederick, Md. and Roanoke, Va. Write for catalog.

ECONOMY SILO & MFG. CO., Dept. O, Frederick, Md.

ECONOMY SILOS

HERE'S the simplest, most convenient and efficient hand separator. It gets every ounce of cream out of the milk; gives you every penny of profit in your butter.

Reid Disc Separator

attaches to wall—out of way when not in use. Weighs 50 lbs. boxed for shipment. Send for booklet of Dairy Supplies.

A. H. Reid Creamery & Dairy Supply Co.
69th St. and Haverford Ave., Phila.

Improved Champion

MILK—COOLER—AERATOR

Aerates as well as cools milk. Recommended by leading creameries and producers.

If your dealer cannot supply you, write for special offer. Descriptive folder free.

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PHILADELPHIA, PA., MAY 25, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

Feed the Soldiers

Reports of shortened rations for the allied soldiers emphasizes the urgency of the European demand for flour. The American people have done really wonderful things in the conservation of the most needed foods. People of whole areas have pledged themselves to eat no more wheat flour until the next harvest. More and larger bodies of people have curtailed wheat consumption to the minimum. All of these efforts have been necessary to stretch the limited supply over the urgent needs of our fighting men. And there are still six weeks to two months before the new crop will be available, and still longer before wheat flour can move in considerable volume. This means that farmers must sell all wheat on hand or our soldiers and those of our allies must go without. There is nothing to be gained by holding on. The needs are so great that the Food Administration urges selling even what has been held for seed. The possibility of short supply at seeding time is so remote and the present needs are so great that all farmers are urged to sell all the wheat they have. Each bushel sold now will provide bread for a little more than one soldier in Europe until the new crop supply is available. It is unpatriotic not to sell. It is only humane to let it go. Sell now.

* * *

Adopt and Adapt

While much that is being done by the different agencies to mobilize labor for the farm will likely prove a waste of effort, yet we want to urge farmers to view the possibilities of new and outside sources of help with open minds. We have to face as a fact that cannot now be remedied the reduction of farm labor caused by the leaving of sons and other experienced help for factories and war activities. We must also accept as a fact that food must be produced in abundance.

One of the most promising sources of labor is the young men below draft age. There are thousands of these in the cities and towns who are anxious to be of service and many of them make good after a little experience. We know it is a "bother" to train them, but it is often worth while—certainly more so than dependence upon unreliable floaters who cannot get or keep a job in other places.

Another source, especially for certain lines such as truck farming, poultry raising, green houses, etc., is women. As pointed out in another article last week, "Why Non-Essentials Must Go," there is a constantly growing shortage of labor in this country now, and this shortage will continue to increase while the war lasts, and it is up to farmers to make use of the help available even tho it differs in kind and quality. It is futile and unpatriotic to do anything less.

* * *

The Loafers

New York State has swung into line with a compulsory employment act. Maryland and New Jersey early passed laws compelling all male citizens to take up some useful, lawful occupation or go to jail. They may have missed a few within their borders, but they have made loafing so unpopular that the greater proportion of the "profession" has moved on or gone to work. It has been noticed that all varieties have been affected alike. There is little difference between the kind that loafs on park benches, around fish ponds or around city club rooms. New York claims to have fallen heir to many floaters when New Jersey drove them out. What may Pennsylvania expect when three bordering states have put up the bars against the pests? For self-defense, if for no other reason, this state will need to enforce the patriotic slogan: To work, to the workhouse or to war.

* * *

Farm Implement Control

By proclamation of the President, the entire farm implement industry of the country is to be put under licensed control. The order going into effect June 20 will require that all persons engaged in the importation, manufacture, storage or distribution of farm machinery obtain a Government license and conduct their business subject to Government control. The control regulations provide for free access to all books and records of the licensees; prevent resale of implements within the trade when such resale tends to increase the retail price; prevents unreasonable commissions, profits or storage charges; and prevents speculation, restriction of production and monopoly of supplies or equipment. A federal agent has been appointed to administer the order and an immediate inquiry into the prices that farmers are paying is promised.

This order meets a demand that has been growing among farmers. It is another step to help control prices on things that farmers must buy and supplements the regulations already in force controlling prices on some of the things that farmers have to sell. But these regulations seek solely to control profits, and in no way attempt to fix prices. The change in policy is significant. It has been pretty thoroly demonstrated that absolute price-fixing is attended with many dangerous complications. It may be easier to arrive at a satisfactory cost price of a mower or a binder than of a bushel of wheat or a pound of wool. But if the principle is wrong in one case, it must be wrong in the other. Most farmers are convinced that price-fixing on wheat was a mistake. Regulation of profits from production to final sale of the finished product is proving more satisfactory. The Government is avoiding further trouble in implement control by abandoning the price-fixing policy. Will it correct earlier mistakes by dropping that policy in the control of markets of wheat and wool?

* * *

Good But Not Perfect

While we are not at all satisfied that the Federal Farm Loan law is based upon the right conception of the farmer's needs, it is interesting as well as gratifying to note the rapidity of its development. The opposition of the money-lending class to any plan which would divert money from its ordinary channels of investment where it can be turned over frequently and more profitably is very evident. The need of additional banking facilities for farmers has been denied, while politicians and others have raised the cry that the proposition was a scheme by which Government money was to be used to develop the South. In regard to this latter charge it is to be noted from the last report of Federal Farm Loan Board that $177,037,450, or about 60 percent, of the $299,948,834 so far applied for has been asked by farmers in 21 northern states.

The weak point in the Farm Loan law as it stands now is that it fails to provide for the man just starting in the business of farming and who does not own, or nearly own, a farm. It tends to perpetuate the present tendency and the one we most desire to change, and that is farm tenantcy. The proportion of farm renters has been increasing for the past 30 years in this country and political economists view this tendency with alarm. The Farm Loan law must be so modified that, instead of hastening, it shall retard further development in this direction. The ambitious young man who sees the possibility before him of sometime owning a farm makes a better farmer and a better citizen. But as long as loans are limited to improving and making still more valuable the land of those who already own it, the ambitious young man sees his chances becoming less and less.

* * *

Grow Buckwheat

More profit could be made from the run-down, waste and otherwise unproductive land by raising buckwheat than any other crop. Land that is inclined to "go wild" and grow up with briers and bushes can be "tamed" more easily by sowing it to buckwheat than by any other method. Buckwheat is not insistent upon great fertility; in fact, soil in a condition in which it would not produce a profitable crop of any other grain will produce a good yield of buckwheat if it can be supplied with plenty of phosphoric acid. It is in every way a cheap crop to grow, and in these times of great need for cereal grains for human consumption there should be special effort made to increase the buckwheat crop. Three pecks of seed and 200 pounds of acid fertilizer will insure a crop on land suited to its growth and this is mostly in the poorer soil regions. Of course, both these factors are much higher in price than usual, but so is the market price of buckwheat and it will remain so. The greatest difficulty may be in securing seed, since the long and general use of buckwheat cakes during the past year has reduced last year's crop to small proportions.

* * *

Loading Milk

There was never good reason for making dairymen load their own milk onto trains at the shipping stations. The practice originated with the establishment of shipping platforms at points where there were no regular stations and no station employes. The railroads might have met the needs by supplying milk train attendants to help handle milk at all stops. But the farmers were then willing to do the work, and the roads were perfectly willing to let them do it. There has been little change in the practice, largely because the farmers have gone on doing the work that should have been done by the roads, and making no organized protest. The practice was always a burden to farmers, even when trains were run on schedule time and labor was more abundant and time less pressing on the farms than at present. A wait at the station not only takes the farmer's time, but that of his team as well. This was always a serious hindrance to farm work. In these days of labor shortage on the farms and the most urgent need of all time possible for farm work, the loss of time becomes a waste that seriously affects all classes thru the curtailed production of farm crops. The addition of one of two men to the crews of milk trains can be made to save the time of fifty or more farmers and their teams.

The Inter-State Milk Producers' Association has taken this matter up with the railroads, as related by the Secretary of that Association in the article on page 5 of this issue. The farmers have declared their willingness to meet a reasonable charge in milk freight rates for the needed additional service. In spite of this the railroads have refused to make the change in "established custom." They apparently assume that the farmers are still willing to do the work that belongs to the roads. And they will continue on that assumption unless the dairymen rally to the leadership of the Inter-State officials and lodge their complaints and protests in such numbers that the roads cannot afford to ignore them longer. The Inter-State Association is prepared to carry the protest to the highest authorities. Back them up and help right a wasteful practice by giving them the strength of numbers. This means all dairymen.

HARRISBURG NOTES

Direct Inheritance Tax.—Some of the legislators in interior counties who were candidates for renomination in the primary campaign ending this week found to their astonishment that the direct inheritance tax law was more or less of an issue among their people and predictions that votes cast on the bill establishing that tax last winter would return to haunt law-makers were more than verified. In some counties candidates found that they had more explaining to do about the direct inheritance tax law than any other bill and that it was almost as great an issue in the minds of some people as the liquor question. The direct inheritance tax was an impost which it was thought by many legislators would be needed to enable the state to make ends meet. Probably it will be required if the system of voting money to hospitals and homes which should be supported at home is not curtailed and it certainly will be needed, with much more, if the present campaign results in the usual demands for increases or additions to the list. The fact is that because of the activity of the auditor general's department in collecting corporation taxes and settling up some which had been on the deferred list for a couple of years and the general state of business that the State Treasury today contains more money than at any time since the Commonwealth of Pennsylvania built and furnished its State Capitol out of current revenue, altho it took about thirteen millions to do it. The State Highway Department has so much money to its credit that it can not spend it and every department is going on without being curtailed for war reasons, the only cessation being where appropriations were cut off from political pique or because they were of doubtful enough value not to get by the executive chair. The expectation is that the direct inheritance tax will yield $5,000,000 a year. This year, the first of its operation, it will yield only a couple of millions and the State Treasury is bulging. It is small wonder to people here that legislators have been called up by constituents and asked about their votes for this tax at a time when the country was calling upon people to buy bonds and invest in war stamps and contribute to the Red Cross and other objects.

More For Schools and Farm.—In view of the plethoic condition of the state's strong box it seems only natural that men interested in the state's educational system have started to take up with the officials who are not in politics the proposition of a more equitable distribution of the millions voted for the aid of the schools. As pointed out in this letter many times the rural districts are suffering under the present system and as the swing of population in war time stimulation of industry is toward the cities it will continue during the war and the readjustment period unless a change is made promptly. The situation in rural districts this year is well known at the Capitol and studies of consolidation, teacher supply, construction and the like have been under way. Similarly, the framework for an extension of real aid to agriculture has been put up and if adequate appropriations are in sight practical methods in handling the problems attending greater food production can be worked out. The money is in sight to secure a larger measure of aid to schools and farms and if the next administration is free from factional squabbling the state may enter upon a period in which the rural districts will get what is coming to them. At least they have the means to get the means now.

Estimate on Wheat.—As a result of study of its reports the Department of Agriculture estimates that the Pennsylvania wheat crop this year will run about 22,000,000 bushels. The crop last year was between 25,000,000 and 26,000,000. The rye crop will run about 4,000,000 bushels according to the same officials, this being a decline of half a million bushels. On the other hand there will be a big increase in corn and a material increase in buckwheat acreage this year.

The Dog Law.—State authorities have adopted a stiff policy in regard to enforcement of the dog license law and prosecutions in various counties are likely. In McKean County the aid of the State Police had to be secured because of the refusal of constables to shoot dogs and something like 33 animals were shot by the constabulary, while the offending law officers were arrested. This is to be done in other parts of the state. In McKean the situation was bad because of the killing of sheep.

The Market Bureau.—It is said to be possible that E. B. Dorsett, who is now serving as one of the state's farm advisors, may become identified with the State Bureau of Markets again. The bureau has not been a howling success and steps are now being taken to make it more than a mere selling agency for seed.

May Take Farmers.—There was quite a significant paragraph in the last draft call. It stated that where the men in the first class had been exhausted that local boards might take farmers where, in their judgment, they could be spared. Nine-tenths of boards will grab farmers as quickly as a college athlete to make up a quota and it is pointed out that it is the part of wisdom for farmers to see that the means for appeal of cases are at hand and that if in doubt they should take up the question with the Department of Agriculture, the Public Safety Committee or the Food Administration.—Hamilton, Harrisburg, Pa., May 20.

NEW YORK LETTER

Fruit Prospects Good.—The New York State Fruit Growers' Publicity Committee issues an estimate of this season's fruit crop, based on no future frosts, that is encouraging. Their data show the prospects good for a big apple crop, with a fair crop of peaches in a few sections. Near Sodus there will be a few peaches, but conditions improve further west in Niagara County. Almost no peach section will show over a 50 percent peach crop. Those sections where the crop failed, the trees themselves are dead—acres of orchards being wiped out. Practically every other fruit bids fair for a big crop. Pears, plums, prunes and cherries have blossomed in full—tho the latter may be wiped out in a day by a disastrous rain, or in a night by a frost. Of the four greatest apple counties, Niagara reports a 90 percent crop; Wayne, 85 percent; Orleans, and Monroe, 80 percent. The peach crop is said to be a failure in New England, but heavy in the south, with Jersey and Delaware 85 percent of normal and Michigan, our leading competitor, 30 percent. Central New York peach trees are almost universally dead.

Standard Containers Favored.—The U. S. Bureau of Markets announces that the law requiring standard containers for inter-state shipments will be welcomed by New York fruit and vegetable growers. The New York State Vegetable Growers' Association went on record last winter as recommending this, as one way to secure fair play for both growers and consumers. Even those growers whose produce is sold near home favor the new rule.

Tractors Pay.—Farmers are using more tractors in the state than ever and are finding them profitable. Many uses besides plowing are found for them, and outside work for others helps the neighborhood and the owner. Automobiles are also a business necessity for farmers in their extra busy times with large crop acreages and frequent necessary trips to town. A state official estimates that not over 15 percent of the use of farm automobiles is for pleasure driving—but rather for the quick hauling of all sorts of supplies.

Loafing Law Enforced.—Since signing the Robinson bill the Governor has set into motion its enforcement by asking all post masters to report loiterers about public places. The latter will not be protected from being forced to engage in regular employment because he has ample income. If he is from 18 to 50 years of age he must be useful. Our state was receiving undesirable visitors from New Jersey where a similar law is in effect.

Barge Canal in Use.—On May 15, the great barge canal was thrown open its entire length for the relief of traffic congestion. The formal celebration of its completion will occur July 4, the Legislature having made an appropriation for the purpose and named a committee to supervise the event. The entire system, with three large tributary canals—the Seneca-Cayuga branch, the Oswego and the Champlain canals—comprise over 500 miles of waterway. The channel is 12 feet deep at a minimum, and 75 to 200 feet wide, with 57 locks, 300x44 feet inside. A series of locks at Waterford have a lift of 169 feet, while the largest, at Little Falls, has a lift of 40½ feet. The water level of many streams feeding the canal had to be raised by artificial dams—the entire task requiring 5 years of work and $150,000,000.

NEW JERSEY FARM NOTES

Not Using Potatoes.—It is stated that New Jersey is still delinquent to the extent that it has not come up to the expectations of the United States Food Administration in utilizing the supplies of old potatoes available. According to the State Food Administration old potatoes are obtainable at bargain counter price, and this makes the situation more surprising. In the larger cities the tubers can now be purchased at $1 a bushel. A year ago this time they were selling at $3 or more a bushel. The high price previously may have gotten people out of the habit of using potatoes.

Women Farm Help.—Women are fast replacing men on the farms in the Mercer County section of the state and are making good. They are engaged in all kinds of agricultural work, including plowing with the old-fashioned horse plow and driving the various kinds of farm machinery. As it is very difficult to secure men to work on farms, it has become necessary for the farmers to engage the women and girls. Practically every farm in the Hightstown section of the county is now employing women help.

The Anti-Loafing Law.—New Jersey's "Anti-Loafing" law, passed at the last session of the Legislature, has attracted attention thruout the country. It provides that all able-bodied males between 18 and 50 must be constantly engaged for at least 36 hours a week and when "loafers" are found violating the act they are to be punished. Any able bodied man who cannot find employment must apply to the State Commissioner of Labor who is charged with the duty of seeing that he finds employment in some productive capacity, such as agriculture, state work or wherever help is needed. A member of the Massachusetts Legislature has just written to Governor Edge for a copy of the compulsory work law and intends to introduce a similar measure in the law-making body of that state. Similar requests for information about the statute have been received from other states.

Education in Saving.—Assistant State Commissioner of Education Wesley O'Leary, who has charge of vocational training, including agriculture, in the schools of the state, has asked the school principals and teachers to redouble their efforts during the coming months to prevent the waste of food. New Jersey schools made a fine record in food conservation last year. Approximately 60,000 jars of fruit were preserved. Housewives to the number of 3,500 were given instruction in canning and drying by means of classes held in the public schools. The necessity of enlisting the pupils of the elementary schools in farm work and home gardening has been urged upon the school authorities again by Governor Edge.

Money For Soldiers.—New Jersey municipalities have just completed a drive for $25,000 for the 15,000 troops from this state now stationed at Camp McClellan, Anniston, Ala. From the fund a small sum is to be appropriated, $500, for the purchase of standards for the three regiments and the rest of the amount is to be divided and put into the company funds of each unit for the use of the men when they leave for active service.—Lanning.

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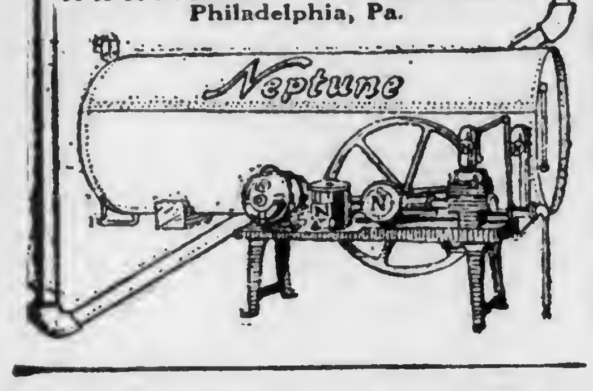

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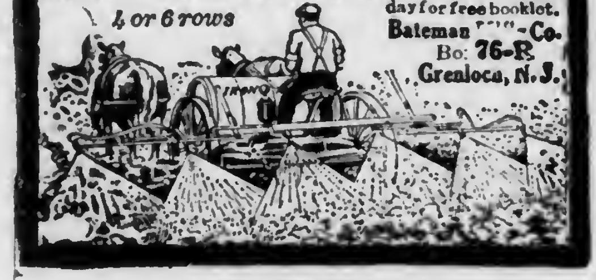

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Controlling the Apple Maggot

By Dr. J. P. STEWART

The apple maggot is becoming more of a pest each year in eastern and central Pennsylvania. Some good orchards never before infested were found by the writer to be considerably injured by it last year. It is the pest which makes the small irregular tunnels all thru the flesh of the apple, and often reduces the interior of the fruit to a brownish, spongy mass near ripening time. One of the worst features of its work is that the fruit at picking time often shows no sign of infestation on the outside, and then breaks down suddenly from the work of the maggots, as soon as the fruit begins to soften.

The summer and early fall varieties are most subject to attack, but winter varieties are by no means immune. The sweet varieties are also preferred by the pest, but it does not confine itself to them. A very similar pest also works in cherries, particularly in the sour varieties. The latter, however, has only been observed by the writer in the western part of the state.

The adult insect or the primary cause of all this trouble is a fly, slightly smaller than the house-fly in the case of the apple maggot, and against it the principal control measures are directed. This fly is blackish in color, with the legs and head yellowish, and with three or four narrow white bands across the abdomen. Its wings also are marked by four irregular black bands, which serve to distinguish it from similar associated flies. It lays its eggs inside of the apple, and the larva or maggot remains in the fruit until full grown, so that no method of spraying is of any avail against the maggot directly.

From experiments in New York and Canada, however, it appears that considerable benefit is obtainable from proper spraying against the adult, altho this has not been borne out entirely by similar experiments in New Hampshire. For best results, and especially where the pest is very severe, the sprays should be applied shortly after the adults emerge. In New York and similar latitudes, the parent flies emerge in early July and continue abundant until September, when a partial second brood appears. Egg-laying does not begin until two or three weeks after emergence, and during this interval the flies may be seen resting on the leaves or fruit, especially on the lower branches, and lapping up moisture or licking the waxy covering of the fruit. It is this interval and habit which permits the adults to be poisoned by proper spraying.

In many cases in commercial orchards, the ordinary arsenical sprays for the codling moth have apparently been sufficient to hold this pest in check. When this is not the case it may be necessary to make an additional application about the last of June or the first of July, so as to make sure that the fruit and foliage, especially on the lower halves of the trees, will be thoroly covered with an arsenate spray at the time the adult flies emerge. The exact time for this special application is best determined by observation in the orchard, with the aid of the description of adult given above.

A coarse nozzle or a relatively low pressure is often advised for this application so as to deposit the material in drops, but this is probably not essential. Either arsenate of lead or arsenate of lime, at the rate of one pound of the powder or two pounds of the paste in fifty gallons of spray, should be satisfactory. The addition of about a quart of cheap syrup or molasses to each 50 gallons of spray has also been advised so as to make it more attractive to the flies, but this also is probably unnecessary unless the infestation is exceptionally severe.

In addition to spraying for this insect, it may be necessary to take some measures looking toward the complete destruction of all infested fruit as fast as it falls. This can be done by fencing off the infested varieties and running enough pigs in the lot to keep all the dropped fruit eaten up. The addition of pigs should not be overdone, however, and some outside feed should always be available or else the pigs may do the trees more harm than good. In any case, however, the most rigorous measures should be taken to eliminate this pest wherever it occurs, as it renders the infested fruit entirely worthless.

CONTROLLING BORERS IN APPLE TREES

"I am worming my apple orchard just now and the young trees certainly get lots of worms in them. I understand that there is some kind of a tar product on the market to control this worm that gets into the base of the tree so much. If there is anything in which you have a great deal of confidence will work out, I would be very glad indeed to have you send me the prescription for it."—W. P. F., Alleghany County, Pa.

There are several preparations of asphaltum that have been used with apparent success and without special injury to the trees in controlling borers on both peach and apple trees.

In general, however, I would much prefer to use concentrated lime-sulphur for this purpose. This material is practically always safe even at full strength of the concentrate. It needs renewing somewhat more often than some of the other materials but is practically as efficient and is much safer than any other.

To be most effective, the first application should be made somewhat before the middle of June, as the adult insects usually emerge and begin laying their eggs about that time. At least one additional application should be made, within a month or six weeks, and if conditions are very bad and the trees are growing rapidly so that cracks appear in the coating, it may be desirable to make a further application about the last of August or the first of September. Under ordinary conditions, however, one or two applications should be sufficient for satisfactory protection against the apple borer.—J. P. S.

Garden and Truck Crops

THE HUBBARD SQUASH

Of all the squashes, the Hubbard squash is probably the most important. It has a hard shell with a large amount of meat of highest quality when mature, and delicately flavored after being cooked. Of the Hubbards, there is the common Hubbard which is of large, fine grain, very dry and of the highest quality, and noted for its keeping qualities. The second is the warted Hubbard resembling the former but much more heavily warted or ridged. By some it is considered superior in quality to the preceding. The blue Hubbard, which is a late introduction, has many of the desirable qualities of those previously mentioned and, in the opinion of the writer, it is even superior in quality. The fourth sort is the Golden Hubbard, the skin of which is of a reddish tinge when ripe.

The squash is a tender plant, but will stand more cold than cucumbers or melons. However, the plants are easily injured by frost and will not thrive well in cold soil. It is therefore necessary to wait until frosts are over in the spring and the soil is warm before planting. A soil of a sandy or loamy nature, not too heavy, containing an abundance of stable manure or other human-making material is essential for the highest yields and the quickest maturity.

The plants may be started under glass and transplanted to the fields after danger of frost is over. In growing under glass it is necessary to start the plants in a receptacle so as not to disturb the roots when they are removed for outside transplanting.

The common plan of growing squashes is to plant the seed directly outside. The hills or locations are generally enriched by applications of a forkful of well-rotted manure. The soil is then mixed thoroly with this stable manure and from 10 to 15 seeds are planted in the soil in this spot, and 8 or 10 feet away from this location another hill is made and so on thruout the field. An application of 350 to 500 pounds of acid phosphate sprinkled at and around the hill will give increased results in the formation of fruits.

A good method of carrying on this work is to turn a furrow every 8 or 10 feet, and every 8 or 10 feet in the furrow disposit the manure and plant the seed. Another method of planting the seed is in drills, furrowing out as previously mentioned and strewing the manure along in the furrow, also using acid phosphate. Then plant about two seeds per foot in the drill. After they come up thin the plants to stand from 2½ to 3 feet apart. In cultivating, cultivate only one way in the row. As soon as they obtain a leaf or two they should be thinned.

The common squash bug mentioned cannot be controlled by insecticide. Any mixture applied that is strong enough to kill the insect is generally strong enough to injure the vines. The insect may be trapped under boards placed near the plants, or they may be hand picked or the young plants may be covered with any material that will keep the insects out and allow sunshine to reach the plant. Mosquito netting or coarse cheese cloth will do.

Another insect that will bother is the vine borer. This is a very difficult one to control. As its name implies, it bores into the vine, sucking the sap and weakening the plant, finally killing it. A few growers advise the pulling up of the soil about the stem, moving the soil so that the young borers find difficulty in entering the stem. This pulling up of the soil is a gradual process. A little soil is thrown up when the plant first begins to run, and at intervals of a week or ten days more soil is added, until four or five operations have taken place.

Another method of control is that of planting early varieties to serve as traps. When the borers have attacked the early varieties they are clipped and burned, thus destroying the larvae and eggs and eliminating attack on the latter varieties.

If the best squash are desired, do not allow the vines to over-produce, a few early set fruit on each vine is enough. A few growers have found that from two to five squash are about right; all others should be pinched off. This will aid in the growth of those remaining and increase their maturity.

Just before frost, the squash should be harvested by being cut from the vines, leaving a large part of the stem, or by cutting the vine. They can be placed in piles in the field and covered with vines or other material.

In marketing they should be graded as to color, shape, size and other characteristics. In the Boston market the barrel is the standard package. In other markets they are sold loose by the ton. In a few cases, they are packed in crates and sold.

Hubbard squash may be successfully stored if the grower finds out the requirements of successful storing. This crop requires a temperature of from 50 to 60 degrees and a dry atmosphere. It should be handled with the greatest care and not allowed to freeze before removing from the field. The customary method at present is to store the squash on shelves or racks, one or two deep only. The older method is that of storing in bins but this has been discarded due to the trouble in locating squashes that have begun to decay.

A fair yield of squash per acre is from 8 to 10 tons. At Irondequoit, N. Y., one grower was able to get 16 tons. From $10 to $12 per ton is often received for the crop. During the exceedingly high season of 1916, $80 to $100 per ton was paid. In the writer's life this has happened twice.—A. E. Wilkinson.

PROTECTING MELON SEED FROM MICE

We offer the following suggestion that will at least reduce the damage caused by mice eating melon seeds in the field after planting, altho the method was employed to gain time. The seed was placed in a cotton bag and immersed in water for twenty-four to forty-eight hours until the seeds were just beginning to crack open and were then planted. Sprouted seeds change in taste and probably the mice will seek other food more to their liking.—C. E. Kendel, in Market Growers' Journal.

Produce should not be allowed to go to waste this season. Canned products of unquestioned quality may be readily disposed of on the average market. Good possibilities exist for building up a small canning business.

How the Armies' need for meat was answered

IN a fighting man's ration, meat is the important item. Twenty ounces of fresh beef, or its equivalent, is called for daily.

To supply the meat needs of an army that was suddenly expanded from 100,000 to 1,500,000 is a tremendous task. Added to the needs of the Allies, it is a staggering one.

The American stockman and the American packer may justly take pride in the way they have met these needs.

During 1917, stockmen sent to market nearly 2,000,000 more cattle than during 1916. Yet at the end of 1917, the Department of Agriculture reports more cattle remaining on American farms than at the beginning of the year. The production of hogs has also been increasing. All of this in spite of high feed prices, and scarcity of labor.

How the packers have done their part is shown by the fact that in one week, Swift & Company was called upon to supply the Allies and the American Armies abroad 24,000,000 pounds of meat and fat—enough to have fed America's peace-time army for more than six months.

An order of this size means the dressing of 13,000 cattle and 200,000 hogs.

To move the finished products, 800 freight cars were needed. Of these 650 were from the Swift refrigerator fleet.

Three days after the order was received by Swift & Company, shipments began, and the entire amount was rolling seaward within a week.

Since January 1, 1918, over 400 carloads of our products per week have been shipped abroad on war requirements.

The nation's meat supply machinery has stood the test.

Not once has there been a failure on the part of the American farmer or the American packer to supply the government's needs.

On their part, Swift & Company performs their service without governmental guarantee of profit and with a limit of 9% return on capital employed in the Meat Departments, which means about 2 cents on every dollar of sales.

Swift & Company, U.S.A.

SAVE MONEY AND STILL HAVE A GOOD AUTO

There's hardly one town in Pennsylvania where you won't find many of our satisfied customers. Autos are cheaper—better and more up-to-date at the Roman today than ever before.

1000 Used Autos $200 up

Every make known in 1918- 1917-1916 models from $200 to $1000. No matter what car you want we have it and can save you money. Send today for our new

Auto Catalog A

It's full of valuable information for the man who expects to buy a car.

ROMAN AUTO CO.
WORLD'S LARGEST AUTO DEALERS
203 N. Broad Sreet, Phila., Pa.

$1,500 86 acres: old buildings: oil, coal, and timber: 3 miles out. New catalogue. 100 Farm Bargains. Free. Easy terms. FARMERS EXEMPTED FROM DRAFT NOW.

Reed and Co.
Beaver Falls, . . Penna.

Reading Chemical Co.

Our products are the best of their kind.

Hennesy's Scientific Formula Fertilizers are dependable at all times.

Our Peerless Brand Hydrated Lime will correct soil acidity at low cost.

Our Peerless Brand Poultry Meat is a wonderful winter egg producer. It makes hens lay and pay.

Calicide—The best spray material for the potatoes and vegetable crops.

Write and get our prices and literature covering all our products. See for yourself how you can save.

READING CHEMICAL CO., Reading, Pa.

WAR NECESSITY FOR NURSES MET BY SPECIAL SUMMER CLASS

As a war measure, Mount Sinai Hospital School of Nursing is entering a special class, June 15th, 1918. Recognizing the need for additional nurses for military and civilian purposes, the Mayor's Advisory War Committee of Cleveland, and the Western Reserve University have made this Course possible the former by supplying the funds, and the latter by offering its facilities for a ten weeks' course in theory. Students will live at the hospital which is in close proximity to the University. No tuition will be charged for the course at the University. Living expenses will be met by the Hospital.

This plan offers unusual opportunities to qualified young women wishing to serve their country. Applications should be made at once to Miss C. A. Wheeler, Principal of Mount Sinai Hospital School of Nursing, 1800 East 105th Street, Cleveland, Ohio.

FARMERS

PROTECT those dependent on you in case of your sudden death

By Securing

a Policy of the only Old Line Legal Reserve Life Insurance Co., endorsed by the Pennsylvania State Grange.

Write for rates today. Agents wanted.

Farmers and Traders Life Insurance Co.
Home Office, Syracuse, N. Y.

Get Cash

For Your Empty Bags

Don't throw away a single bag—they're worth money to you. Prices are 'way up now. Cash in on all you have. But be sure you get our prices before you sell a single one. We guarantee most liberal grading. Over 20 years in business is your assurance of a square deal every time. We buy any quantity.

Freight paid on all shipments to Werthan. Find out what real satisfaction is. Write quick, stating what you have. Address

WERTHAN BAG CO.
62 Dock St. St. Louis, Mo.

WERTHAN PAYS HIGHEST PRICES FOR EMPTY BAGS

Four Miles or Twenty

Are You Working Your Farm at a Twenty-Mile Pace or at Four Miles?

Manufacturers and merchants have come to realize that their business can't go any faster than their delivery and hauling facilities will permit.

What good does it do to produce a large volume if it can't be hauled promptly?

A farmer is in the same situation.

Getting products to market promptly is just as necessary for rapid, economical farm production as it is for the manufacturer or merchant.

The farmer who uses horses to haul his produce at a four-mile pace is sure to lag behind his neighbor, who is hauling at a twenty-mile pace with trucks.

You don't need to wait until you can afford an expensive truck. **Detroit Universal Truck Units** will put your farm in the twenty-mile class, and at a very small expense.

Detroit Units can be attached to any chassis in a few hours time, making a thoroughly reliable, economical truck of one, two, or three tons capacity.

A Ford chassis will make an excellent one-ton or two-ton truck. Larger cars will make the two and three-ton sizes.

Perhaps you have an old car, with the motor and chassis still in good condition, or know where you can get one cheap.

Investigate this proposition today.

Let us send you complete information showing how, for a small expense you can speed up your haulage this year and boost your production and profits.

Specifications

Made in 1¼, 2 and 3 ton models. Fit any chassis. Work can be done in one day. The famous Russell Internal Gear Axles are used in all models, providing the high road clearance so necessary to farm work. Other parts standard—equally high grade.

Prices

Prices run from $400, for the 1¼ ton model, to $675 for the 3-ton model. Made in Detroit, by people who know how. Prompt deliveries—short shipping distance.

Detroit UNIVERSAL TRUCK ATTACHMENTS

Manufactured and Sold by

The Parkview Sales Company, 1685 Gratiot Ave., Detroit, Mich.

Boxes or Bodies Can be Built to Suit any Farm Needs.

Edw'd Schoenherr
GARDENER
10 MILE ROAD
Warren Mich.

This is the Truck we Built for One Progressive Farmer.

IRON AGE

Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow more crops with least expense? How can I cultivate more acres and have cleaner fields?

IRON AGE *Riding Cultivator*

will help you do this. Has pivot wheels and gangs with parallel motion. Adjustable to any width of row. Every tooth can be raised, lowered or turned to right or left. Lever adjusts balance of frame to weight of driver. Light, strong and compact—the latest and best of riding cultivators. We make a complete line of potato machinery, garden tools, etc. Write us today for free booklet.

Bateman M'f'g Co., Box 76D, Grenloch, N.J.

Reading Bone Fertilizer

Quality Service Satisfaction

We ask the patronage of every intelligent farmer desiring high-grade fertilizers, representing the most value for the money expended.

Reading Bone Fertilizer Co., Reading, Pa.

(This trade mark means quality)

Ask your dealer for Reading Bone Fertilizer.

Write for booklet and further information.

PAINT

From factory direct to you.

Save 1-2 the cost on strictly 5-year guaranteed paints.

Shipped direct, subject to trial on 90 days time.

HOUSE PAINTS,
BARN PAINTS
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VARNISHES, STAINS, ETC.
FRESH PAINT MADE SPECIAL to YOUR ORDER.

Send for complete color cards showing full line of colors and instructions, also special free offer.

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CLEVELAND, OHIO
Dept. H.

PAYS FOR ITSELF

in short time. Does the work of several teams in half the time and at less cost considering the time saved and the extra work the teams can do around the farm. Won't eat it's head off when idle either.

FEDERAL MOTOR TRUCKS

are distinctly farmers trucks. Low extended body and wheel base which allows for heavy hauling over all kinds of roads at the lowest possible cost. Motor designed and constructed to meet strenuous requirements of farm work. Know more about the Federal-built standard thruout in 1 to 5 ton sizes. Write nearest office for booklet, prices, etc. It will pay you to do so before buying any truck.

Immediate deliveries can be made.

HEEBNER-FELVER MOTOR CO.
Lansdale, Pa.
FEDERAL SALES CO.
1830 Market St., Philadelphia, Pa.

FACTORY-TO-RIDER

Ranger Electric Lighted Motorbike

SAVES YOU MONEY

Buy direct and save $10 to $20 on a bicycle. **RANGER BICYCLES** now come in 44 styles, colors and sizes. Greatly improved; prices reduced. Other reliable models $16.75 up. **WE DELIVER FREE** to you on *approval for 30 days free trial*—actual riding test at our expense.

Our **big FREE catalog** shows everything new in bicycles and sundries. Write for it.

TIRES, lamps, wheels, parts and supplies at *half usual prices*.

Do not buy a bicycle, tires, or sundries until you get our *wonderful new offers*, low prices and liberal terms. A postal brings everything.

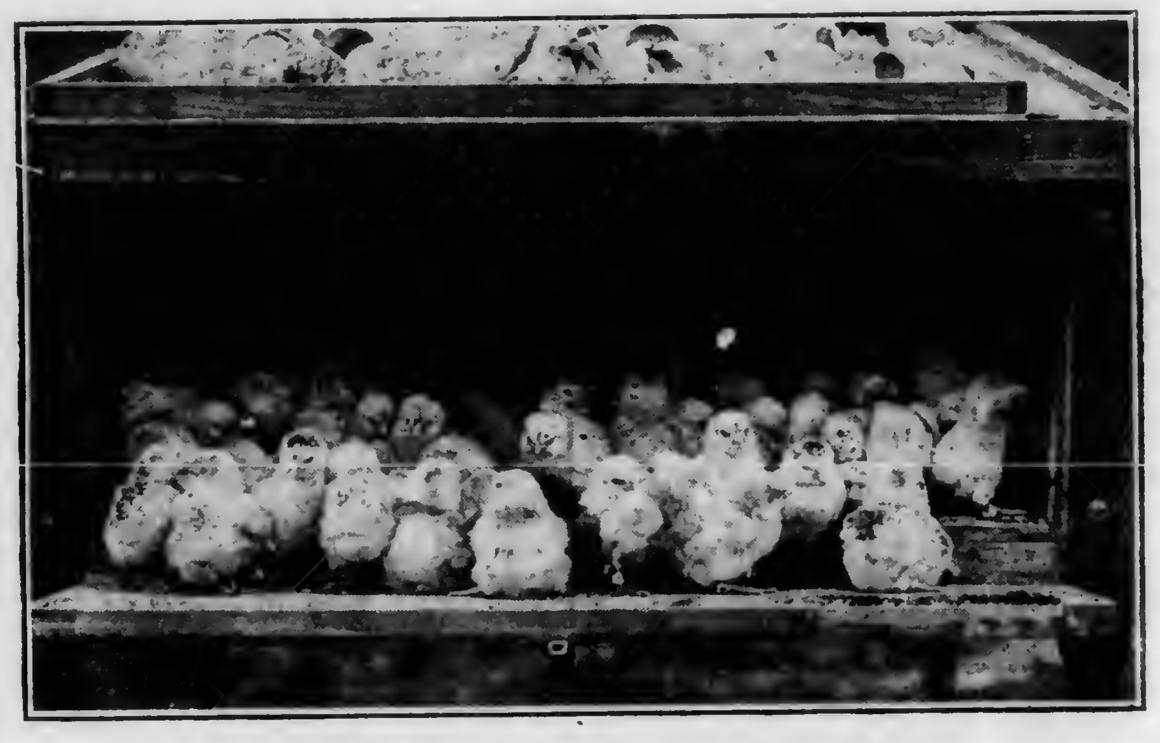
MEAD Cycle Company Dept. 578, Chicago

Poultry

KEEPING CHICKENS ON THE FARM

"There are a number of reasons why poultry keeping is not as popular on the farm as it should be," writes Mrs. E. W. Mahood in the Rhode Island Red Journal. "In the first place the farmer is mesmerized by the big returns to be obtained from the raising of hogs, cattle and mules, and forgets the much heavier expense involved and the greater length of time it takes to bring in returns from an investment in cattle than from an investment in poultry. For some reason he overlooks the fact that the expense risk and the labor of raising chickens are both much lighter than in raising hogs and cattle or mules, and the fact that he can turn his money over so much more often does not appeal to him at all.

"Usually the men on the farm leave the poultry raising to the women, who are expected to pay the grocery bills and perhaps buy some of the clothing for themselves and the children out of the proceeds. The housewife herself has plenty to do without spending time trying to raise chickens under adverse circumstances, and the fact that she has to pay out for necessities all the money she received as the result of her labor, contributes to her general discouragement and lack of interest.



The Result of Good Stock and Good Care

"The farmer himself, as he has not been accustomed to getting eggs from the chickens during the winter months, does not expect any. Hence, he neglects the chickens, tho at this season of the year he has plenty of time to give them all the care they need, and the result is that when spring comes the chickens are poor, covered with vermin, low in vitality, late starting to lay and soon broody. When the birds do lay they are allowed to select their nests at will, and thus many eggs are never gathered at all, but allowed to rot under the barn, in some fence corner, or under a pumpkin vine in the vegetable garden. All this cuts deeply into the profits.

"Again, the farmer has been accustomed to raise only scrub chickens, mongrels, which are slow of development and low in productivity. Were he to buy as good stock in chicks as he does in cattle, take the same interest in them, give them as comfortable quarters and use the same intelligence in their feed and care, then keep books to show him just what profit he is obtaining, the results would surprise him sufficiently to arouse his interest in chickens.

"No other class of people are so well situated to raise chickens easily and profitably as the farmer. There is waste alfalfa and clover from hay loft or hay presser to provide green food in winter, as well as the small turnips and mangels, the potatoes too small for the busy housewife to pare, the apple and potatoes parings, and the waste from other vegetables. There is always plenty of straw to use for litter, in which the grain should be buried, that the fowl may have the exercise necessary to a healthy condition. There are also all the poorly-developed, low-grade grains which are usually sold at low prices and which can be fed much more profitably to a flock of thorobred chickens. In the summer both old and young birds can pick up the best part of their living in the orchards, hay fields and pastures.

"As for the housing of the chickens, on almost every farm is some shed or some unusued part of a barn which can be converted into a good poultry house. If the shed is not warm enough, poultry wire can be run around the sides and straw stuffed in between the wire and the walls. If the shed is too high, a false ceiling can be put in, in the same way with straw and poultry wire, while if there is not enough light, openings can be made and protected by muslin-covered frames attached by hinges, and which thus can be raised or owered as the weather requires."

QUERY

Feeding Young Turkeys

"Will you kindly tell me thru your columns what to feed small turkeys? I have always used white bread but owing to my desire to observe Food Conservation do not feel that it would be right to do so."—Mrs. J. W. R., Delaware Co., Pa.

As with little chicks, it is best not to feed for the first 24 to 36 hours. Sharp sand should be available from the first. The first feed may consist of hard-boiled eggs—boil them an hour or more and fine them. Graham bread may also be fed. The small amount would not be a serious matter. Sour milk may be fed from the first. A good way is to curd it as for cottage cheese, drain it and feed it in a crumbly condition; or, it may be placed before them in a liquid form, but be sure it is fully soured. And kind of stale bread may be soaked in sour milk, squeezed dry and fed. Corn meal may be soaked in sour milk and fed as a part of the ration. It is well to feed meat meal or beef scrap in small quantities.

Live Stock

BUCKS COUNTY PIG CLUBS

A total of 75 boys and girls completed work in the Bucks County pig club work in 1917. They produced over 11,000 pounds of pork. Enrollment in the 1918 pig clubs in this county equals 175. The limits set are "from 8 to 12 weeks and a maximum of 50 pounds." Each member is a demonstrator of the pasture or green feed method of pig feeding, for each plans to feed the pig some form of green feed. Fourteen clubs were organized in as many different townships. Each club has 12 members. One of the requirements of a club is that it have its own local leader and that it have 12 members.

The County Prize will be given to the club that has the highest average at the end of the period, 140 days. This prize will be in the form of a trip to some place of interest, such as the Trenton Fair, the New Jersey Experiment Station or the State Corn Show at Harrisburg. The average is based upon the following points: Merit, 50 percent; gain per day, 40 percent; report, 10 percent. It is planned to have the round-ups at the end of the periods in seven successive days, two each day. At this time a judge from the State College will judge the pigs and talk to the boys and girls as well as the parents assembled on "Pastures and their Relation to Pork Production." It is hoped that the final round-up can be held on a farm where hog pastures have been used during the summer by the farmer owner.

The average weight of the pigs going on feed in the clubs is 26.9 pounds. Last year the greatest gain was 1.61 pounds per day for the entire period of 140 days. It is possible that the members could make an average of 1.5 pounds per day this year. One interesting feature of the clubs this year is that the greater part of the responsibility is held by the local leader. He is the most important factor in successful club work. In many cases the leaders located the pigs for the members but the County Leader purchased 43 at an average of $10 each, and parceled them out to the members.

The sections of the county represented in the pig clubs for 1918 are: Bedminster Club No. 1 and No. 2, Milford Square No. 1 and No. 2, Warrington No. 1 and No. 2, Pineville, Blooming Glen, Hilltown, Chalfont, Newtown, Fountainville, Plumstead, Edgewood. In one of the clubs, prizes have been offered as follows: A complete hog house, two purebred pigs and $11 in money All local prizes must be solicited by the local leaders.

Forty-seven girls and 128 boys are in this year's clubs. Eleven members took advantage of the offer of the Bucks County Trust Company to finance the purchasing of the pig. The money is lent to the member without interest for five months. A note signed by the member and by one parent is required as security.

Milking Time on the Watson Goat Farm

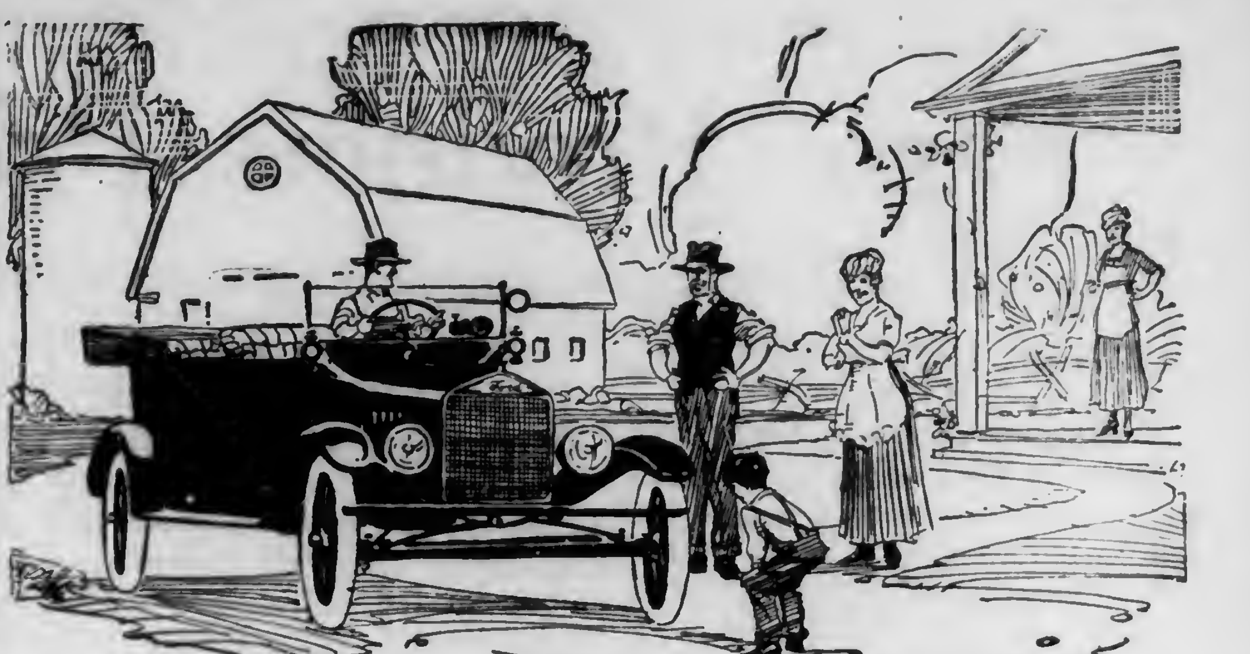
CHARCOAL FOR FARM USE

Farmers using charcoal for hogs and chickens will find the following method very practical. First dig a circular hole about 6 or 8 inches deep and 5 or 6 feet across, the size depending upon the amount of coal to be burned. In this dig a smaller hole two or three feet deep, but let the diameter be about a foot less than the one first dug. Make a grate by placing scrap iron, buggy axles, pieces of pipe, etc., over the smaller opening. These will rest on the shoulders of the lower hole. By placing more scrap iron crosswise no large openings will be left.

Start the fire on this grate. The coals drop thru into the hole beneath. By this method very few ashes are formed. The wood, generally limbs, etc., from the woodlot is thrown on the fire as rapidly as it is burned. When enough coals are in the pit drown the fire out with water. After the pit is dug, one man can easily burn 20 bushels of charcoal in a half day without any difficulty. This method is a time saver and is worthy of trial.—Warner E. Farver, O.

MARKETING OF BRED SOWS DECREASING

Reports from the large live stock markets to the U. S. Department of Agriculture indicate that the rumor of a general tendency to sell bred sows for slaughter is without foundation. At most of the stockyards the percentage of sows docked for advanced pregnancy has decreased since the first of the year and is smaller for the first three months of 1918 than for the corresponding months of 1917. At a few markets a larger percentage of sows than normal showed advanced pregnancy, but this appears to have been due to delays in getting cars for shipments. The U. S. Department concludes that not only has there been no increase in the marketing of brood sows but that the number of brood sows retained on farms has increased, certainly by about 10 percent.



Stewart

Accessories For Your Ford

It Is a Pleasure to Equip Your Ford With Stewart Accessories

SELECTING accessories for your Ford should give you more real pleasure than any buying you do—even more than the purchase of clothes and personal effects. It will if you do it the same way, for buying accessories is of equal importance.

When buying a suit of clothes, you don't merely tell the clerk to wrap up a suit for you. Of course not! You select it with care. You aim to get a suit with just the right cut—the correct lines—in a harmonious color and pattern. You are discriminating. You want to be satisfied—to appear well dressed—to be complimented on your taste. But, you say, that is only sensible buying. And you take much pleasure in buying that way.

You should buy accessories for your Ford in the same way. Use some taste and judgment. Be particular. Buy for looks as well as service.

You take pride in the efficiency and performance of your Ford. You swear by its reliability. You take pleasure in buying accessories for it—accessories that will increase its comforts, its service, and add to its appearance.

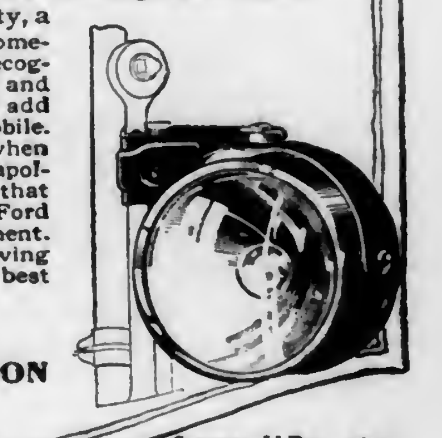
Stop and think! How do you buy accessories for your Ford? Do you merely ask the clerk for *A* speedometer, *A* searchlight, *A* warning signal? Or do you go in and say, like most careful buyers, "I want a *Stewart* Speedometer, and a *Stewart* Searchlight, and a *Stewart* Warning Signal?" The latter method stamps you as a careful buyer who is realizing the fullest pleasure in buying accessories for his Ford.

You don't want your friends to ask, "What kind of a speedometer is that you have?" You want them to say, "Ah! I see you have a Stewart Speedometer." You like to hear nice remarks about your Ford's equipment—the speedometer, searchlight, autoguards, signal, lens, etc. You will if they bear the name Stewart.

There is something about Stewart Accessories that distinguishes them from the ordinary kind. Besides having 100% quality, a Stewart Accessory has that indefinable something called "Class" and "Style". You recognize it instantly. It is all in the design and finish. That is why Stewart Accessories add so much to the appearance of any automobile. You can always be proud of your Ford when it is Stewart-equipped. You need never apologize for its accessories. The mere fact that you bought Stewart Accessories for your Ford indicates your good taste and judgment. There is pleasure and satisfaction in knowing that your Ford is equipped with the best accessories that money can buy.

STEWART-WARNER
SPEEDOMETER CORPORATION
CHICAGO, U. S. A.

Stewart Lens Per Pair $2



Stewart V-Ray Searchlight $5

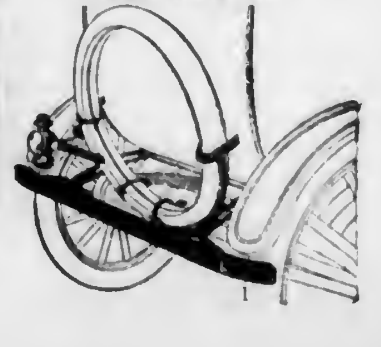
Stewart V-Ray Spark Plug $1

Stewart Speedometer and Instrument Board for Ford Cars $12
Western Price $13.00
Sedan and Coupelet Model $15
(Western Price $16.00)

Stewart Autoguard for Ford Cars . . $7.50
(Western Price $8.25)
(With Nickel Rail $8.50)
(Western Price $9.25)

Stewart Hand Operated Warning Signal $3.50
Motor Driven Type $6

Stewart Autoguard Tire-carrier for Ford Cars . . $11.50
(Western Price $12.50)
(With Nickel Rail $12.50)
(Western Price $13.50)



Farm Products Prices and Prospects

WEEKLY MARKET REVIEW

Potatoes Continue Weak

Most northern shipping sections have shown a steady to firm tone, altho many consuming markets quoted lower ranges for old stock. Potatoes suitable for shipments seem likely to be cleaned up fairly well in eastern and northwestern producing sections, but region of the Great Lakes is reported having considerable stock yet to be moved. Large amounts have been used in the East for starch manufacture and in the northwest for evaporation and the manufacture of various potato products. Old stock sold to the jobbing trade in northern and eastern markets 10@15c lower, at $1.25@1.70 per cwt.

New Potatoes Lower

Florida Spalding Rose ranged lower at Hastings, generally $2.25@3 per barrel f. o. b. for No. 1, closing near the low point. Shipments of new potatoes have averaged nearly 150 cars per day. Sales to jobbers declined sharply in price, Florida Spalding Rose reaching $3 per barrel in New York, and most markets closed the week at general range of $3@3.75 per barrel with slow demand.

Vegetables in Liberal Supply

Shipments from southern producing sections have been heavy the past week, especially of new potatoes and cabbage. Strawberries and string beans also have been in fairly liberal supply. Prices for nearly all lines of truck have tended moderately downward. Cabbage markets were weak and demoralized in some localities, and potatoes continued to decline in the distributing markets.

Tomatoes Fairly Steady

Prices of tomatoes ranged about steady, notwithstanding liberal shipments. Considerable stock has been arriving in poor condition but good lots sold to jobbers at fairly well sustained prices, ranging $3@4 per 6-basket carrier. In the Florida shipping sections growers received $2.50@3.50 for the more desirable stock and Palmetto closed the week at about top price.

Strawberries in Good Demand

Movement of strawberries continued active in consuming markets, and values are very well sustained considering the time of year. The range varied greatly from day to day, generally 15@30c quart basis for good North Carolina stock, and 18@25c for Virginia berries. Arkansas and Tennessee Klondykes ruled low at $3.50@4 per 24-quart crate. The strawberry movement so far this year has been not much over two-thirds of last season to corresponding date.

Asparagus Lower

Prices of asparagus declined rapidly in northern markets on account of heavy supplies. Top grades from New Jersey sold generally $2@4 per dozen. Illinois asparagus was weaker at Chicago, declining to a range of 90c@$1 per dozen. So far, the total movement has exceeded that of last season. Carlots were mostly from New Jersey this week.

SOME WORLD FIGURES

Greatest Corn Growing Nations

Approximately three-fourths of the world's corn is both produced and consumed in the United States, according to the United States Food Administration. The Western European Allies produce less than one-half of their total corn requirements, which exceed 250,000,000 bushels.

Hungary produces 200,000,000 bushels of corn, and is the largest producer of this grain outside of the United States. Argentina is third. These facts explain the importance for the United States, where corn is plentiful, to use the corn crop more largely for human consumption than in the past in order that we may export wheat.

U. S. Output of Substitute Flours

Reports received by the Food Administration from more than 4,000 mills show an abundance of corn for the manufacture of corn meal and corn flour. Stocks of rye and barley, however, are limited. The average output of cornmeal during January and February exceeded 114,000 barrels daily.

Corn flour was milled at the rate of about 14,400 barrels daily. The contemplated entire output of corn flour, which mills in the United States are believed to be capable of producing, exceeds 37,000 barrels daily.

Crop Prospects in France

In spite of a shortage of fertilizers, crop conditions in France are reported by the Minister of Agriculture as favorable. Due largely to the energy of French women, prospects indicate that this year's crops will exceed those of 1917. The United States Food Administration, however, points out that any increase is likely to be small compared with the dependence of France on imports of food from the United States.

Extraction of Flour and Seed

Reports to the Food Administration by licensed flour millers show the amount and kind of products being secured from 1,000 pounds of wheat. The quantity of flour (all kinds for January) was 737 pounds, equivalent to a milling percentage of 73.7. The yield of bran from 1,000 pounds of wheat was 97 pounds; shorts, 74 pounds; middlings, 34 pounds; mixed feed, 48 pounds; red dog, 7 pounds; miscellaneous by-products, 3 pounds.

Australian Wheat Reserve

Latest official estimates give the amount of wheat held in Australia at 165,000,000 bushels. The last crop (1917-18) was about 20 percent less than the 1916-17 crop, but 30 percent more than the average for 1911 to 1915.

EGG STORAGE BENEFITS

A clear understanding of cold storage as a factor in enabling American people to have eggs at all times of the year, at prices justified by original cost plus any necessary expenses, is shown in figures announced by the U. S. Food Administration. In April 478 cold storage houses were reported as used for storage of eggs. These warehouses are distributed thruout the United States.

According to the U. S. Department of Agriculture, the smallest number of cold storage warehouses in any of the eight geographical groups of states is 37 and the largest number is 97. The average is about 60. Thus the distribution is fairly uniform geographically. More than 400 of the storage houses are owned and controlled independently of the large packing interests.

Public storage houses frequently have as many as 500 accounts and each person or company storing eggs ordinarily disposes of them to several hundred customers. As eggs are generally sold on contracts specifying future delivery during the season of little or no production, the number of persons now owning the eggs stored reaches into tens of thousands; no owner has sufficient holdings to dominate the market. Furthermore, the trade which distributes these eggs is now under the general supervision of the U. S. Food Administration. New regulations prohibit all unnecessary trading and are expected to stop the wasteful practice of re-sales within the trade.

In the past it was a frequent practice for dealers to buy from each other on a rising market, each time taking a profit. This practise obviously added to the ultimate price paid by consumers. Only one reasonable wholesale profit is now permited and the eggs in storage—amounting on May 1 to nearly 3,000,000 cases—will reach the public next fall on a fair price basis. Cold storage is necessary for the most efficient utilization of the nation's perishable products and under the present form of control, both producer and consumer should fully share in its benefits.

COLD STORAGE HOLDINGS

Reports received by the Departments of Agriculture from the larger part of the cold storage plants of the country show the following percentage of produce on hand May 1, 1918, as compared with the same date last year:

Article	Percent
Frozen poultry, decrease, ...	38
Frozen and cured meats, increase	74
Apples, decrease, ...	19
Packing stock butter, increase, ..	609
Creamery butter, increase, ...	180
Frozen eggs, increase, ...	165
Cheese, increase, ...	150
Eggs, increase, ...	40

EASTERN SHORE CONDITIONS

In the Eastern Shore section of Virginia it is too early to tell the effect of the heavy rains earlier in the month. The southern portion of the belt is damaged but little. While it is not yet possible to estimate the damage farther north, it is conservatively estimated at 25 percent.

In the Eastern Shore of Maryland, there is a general decrease in strawberry acreage due largely to high cost of crate material and fertilizer and scarcity of labor and this condition will cause a still greater decrease in next year's bearing acreage, as comparatively few plants are now being set out. Wet weather last summer proved detrimental to growth and frost during the past winter has killed many plants, especially of the earlier varieties, so that in many beds the stand is very thin. Plants, while small, are full of bloom and a fairly good crop is expected. A decrease of 25 percent in potato acreage is reported with a greater reduction in watermelons and canteloupes. High prices last year have caused increased sowings of tomatoes and considerable increase in canning tomatoes is expected.

GENERAL CROP CONDITIONS

The weather has been favorable thruout the east during the past two weeks and farm work has gone forward rapidly; also, growing crops made good progress. April and the fore part of May was too cool thru the west and middle west for best results as the following comments indicate:

Illinois.—Pasture and hay lands in good shape. It has been too cold for corn. Oats and wheat doing well.

Nebraska.—Grass and pastures doing well. Stand of corn is only fair.

Ohio.—Grasslands in good condition. There will be a full acreage of corn, but the outlook at this writing is not promising.

Kansas.—Grasslands good, but weather is too cool for best growth of other crops.

Missouri.—Grasslands are backward. Wheat in fine condition, but hay will be short in many places because of cool weather. Corn acreage about normal. Cattle feeders making money, but hog prices are disappointing.

The most unsatisfactory element in eastern Pennsylvania is the condition of winter wheat. The late sowing, the early winter and the heavy coating of ice all tended to kill out a great deal of wheat. Many acres have been plowed up, and countless others will not produce half a crop.

POTATO SHIPPING

Since digging time last summer nearly twelve thousand carloads of potatoes have been shipped out of New Jersey. During the latter part of August and the early part of September from one thousand to fifteen hundred carloads are shipped out each week. Nearly one-half of the entire crop is shipped out of the state during the first two months after harvest. Some twenty-five states get potatoes grown in New Jersey during August and September. In ordinary years few native-grown potatoes remain in the state after November 15.

With the war conditions demanding increased railroad facilities it would appear that potato storage houses might relieve the situation in several ways. If large quantities are forced onto our nearby markets during the hot weather heavy shrinkage and low prices must follow. By keeping our potatoes and maintaining a steady but conservative flow into available markets from August until May, losses and delays may be avoided and a better market price insured

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Weather Month by Month

Pennsylvania Records for Thirty Years

By C. E. MILLER, U. S. WEATHER BUREAU

June

Note.—This is the first of a series of twelve articles giving facts and figures on the weather month by month in Pennsylvania. The investigations covered in this report extend over a period of thirty years and have been carefully compared with statistics as issued by the State Department of Agriculture and by the U. S. Department of Agriculture. So far as we know this is the only compilation of this kind that has ever been made. The records for each month have been brought up to the year 1917. The records of temperature, precipitation, and particularly the tabulations showing effects on staple crops should make this series of very general value to farmers. We suggest that each instalment be preserved for filing. The second article in the series, that covering the month of July, will be published the last issue of June.—The Editors.

The weather conditions for June may be said to be "flat." The "Lows" are sluggish, often dying out in central districts, or wobbling about, and fail to reach the St. Lawrence Valley. The wind movement is low and the summer type of weather is on.

The mean temperature for June is 67.8 degrees. The highest mean occurred in 1892 and was 71.8 degrees. In 1895 the mean was 71.4 degrees. The lowest mean was 63.5 degrees in 1903. The June of 1907 was nearly as cool, being 63.6 degrees. The highest temperature on record for June is 104 degrees, recorded at Aqueduct, Perry County, on the 2nd, 1895. The lowest was 20 degrees, at Somerset, Somerset County, on the 10th, 1913.

In 1916—a very cold June—no temperature above 89 degrees was recorded at any station during the month, and this at but two, Derry, Westmoreland County, on the 24th, and at Clearfield, Clearfield County, on the 26th. During the very warm June of 1892, however, the temperature did not fall below 40 degrees, and this was in the extreme northern part of the state, at Wellsboro, Tioga County, on the 29th.

Frosts

Some very severe frosts have occurred in June. The most destructive was that of 1913, which culminated about the 10th, and was so severe that the young locust shoots and leaves, as well as practically all other vegetation, were destroyed. Ice froze in exposed places. By the 14th, however, the weather had become extremely hot and oppressive.

Precipitation

June is a month usually having ample rainfall. The lowest mean is higher than the lowest mean of any other month. The normal, 4.15 inches, is exceeded slightly by that of July, while that of August, the wettest month, is nearly two inches more. The highest mean, 6.53 inches, occurred in 1903; the lowest, 2.26, in 1913. The heaviest recorded in June was 12.45 inches, at Austin, Potter County, in 1916. The lowest was 0.56 of an inch at Reading, Berks County, in 1898.

There has not been one year when more than 4½ inches have not been measured at one or more stations. The lowest maximum was 4.61 inches, in 1908, at Derry Station, Westmoreland County. In June, 1903, the lowest reported from any station was 3.74 inches, at Confluence, Somerset County.

The most notable 24-hour rainfalls during the past years in June are: 10.40 inches, Ocean City, N. J., 13-14, 1896; 8 inches at Syracuse, N. Y., 18th, 1876; 7.45 inches at Wellsboro, Pa., 1st, 1889; and 5.07 at Chestertown, Md., 29th, 1895.

Weather and Corn

A detailed investigation of weather conditions upon the corn crop for the past ten years shows a number of things interesting to farmers. Of the years 1906-1915, inclusive, there were six warm years, four cool, or five wet, and five dry. Combining, there were two warm and wet; one, cool and dry; three, cool and wet; and four were warm and dry.

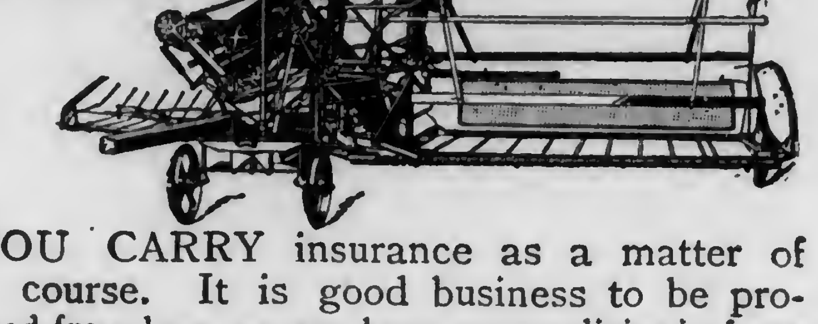
Eighty-three percent of the warm years show an increase of from one to 5.3 bushels above the average. The warm years show an increase of 4.5 bushels as an average above the 10-year average. But 25 percent of the cool years show any increase, and the general average shows that there is an average yearly decrease of 4.3 bushels per acre from the 10-year average. Sixty percent of the wet years show an increase at the rate of 2.2 bushels per acre above, while the dry years also show an increased crop in 60 percent of the time; but the departure from the 10-year average during dry years is two bushels per acre below the normal instead of above. This fact should be kept in mind, as investigators often state that there is no difference apparently between seasons, but upon more detailed investigation it is found that, while an increase may be shown in 50 percent of the years in both wet and in dry periods, yet when the average departures are taken, one period will show an actual increase in bushels per acre, and the other will show a decrease in bushels.

Combining temperature and rainfall, we find that 100 percent of the warm and wet June seasons showed an increased production, 75 percent of the warm and dry Junes showed an increase, but 33⅓ percent of the cool and wet Junes showed an increase while the cool and dry years (there was but one) showed a decrease.

Going still further we compare the monthly weather conditions in each crop-growing season as follows: Show the apparent relation a wet May has to the ultimate crop of that year, and so on with all the months in the growing season of the crop under consideration. Likewise comparing with the dry, hot, or cool months respectively. For instance, the records shows that when the rainfall is above the normal in May, a crop above the 10-year average is raised in but 33⅓ percent of the time, while when the rainfall is below normal, there is a surplus production in 71 percent of the time. But, when the temperature is above normal in May, an increased production is shown in 83 percent of the years, while when it is below normal, there is an increase in only

(To be continued on page 17)

Whole Crop Insurance



YOU CARRY insurance as a matter of course. It is good business to be protected from loss, so you keep your policies in force and pay the premiums regularly.

But there is one kind of insurance you may not know about, which requires no premiums, on which you realize every year, and which this year is fully as important as any other insurance you carry. **When your crops are ready for cutting, International Harvester binders and twine insure the harvesting of the whole crop.** No matter whether the grain be heavy or light, tall or short, standing or down, lodged and tangled, an International Harvester binder cuts and binds it all without waste. That is what we mean by whole crop insurance.

Champion, Deering, McCormick, Milwaukee and **Osborne** harvesting machines and binder twine, always efficient, are better than ever this year when every bushel of grain is needed. Remember this when you come to buy your binder and twine for the season's work. Remember, too, that the larger sizes conserve labor. An 8-foot is better than a 7, and a 7 better than a 6 or 5. Buy the largest binder you can use, and buy a new machine if there is any question about the efficiency of the old one. A new International Harvester binder is absolutely reliable.

Through ninety branch houses and over 30,000 local dealers, we give the farmers of this country prompt service on harvesting machines, twine, and repairs. You can be sure of having your new machine on time by placing your order with the local dealer as soon as possible, or writing us now for catalogues.

International Harvester Company of America
(Incorporated)
CHICAGO U S A
Champion Deering McCormick Milwaukee Osborne

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Increases Farm Efficiency

Fifty thousand Delco-Light plants in operation on American farms are saving, at the most conservative estimate, an hour a day each—or over 18,000,000 work hours a year.

That is equal to an army of 60,000 men working ten hours a day for a full month.

Delco-Light is a complete electric light and power plant for farms and suburban homes.

It furnishes an abundance of clean, safe, economical light, and operates pump, churn, cream separator, washing machine and other appliances.

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Owner wanting larger farm offers this little dandy at a bargain. Mail delivered, good school, less than mile to stores, churches, etc. 25 acres in cultivation, 25 apple trees also pears, peaches, cherries and grapes. Comfortable cottage, barn and corn house; splendid shade trees. Long delightful summers and nearly snow free winters. $600 cash and easy terms. Directions to see it page 36 Strout's Catalogue, copy mailed free.

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Dept. 1765, Land Title Building, Philadelphia, Pa.

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Aunt Peggy's Talks

Beware of False Economy

In these days of conservation and sacrifice, let us not make the mistake some are making of trying to use spoiled food that may have formed poisons which cooking will not destroy. Nor should we think we must try all new mixtures suggested by many food experts. Let us keep our good common sense about us and if our men folks prefer plain beans, plain peas, etc., instead of bean loaf and various other concoctions we often see suggested, why cook them that way. With the good, healthy appetites our farm folks have we need not worry about that part of the food problem.

I think more stress should be laid on serving things plain and simple and thus conserve our time and strength for other duties. Our ancestors lived on the very plainest fare and what good and splendid physical beings it produced. Many of us have been conserving all our lives and for us it is no hardship to conform to the wishes of Mr. Hoover.

We must not be like a woman I heard about the other day, who most patriotically displayed her food administration card in her front window, but in her kitchen was using, per week, for a family consisting of herself and husband, 2 pounds lard, 2 pounds fat pork, 5 pounds sugar, and said she did not know how to use corn meal or other flour substitutes at all. That means that the rest of us who may not display the food card must save her share and and our own, too. Let us be consistent and do just the very best we can to live up to the suggestions offered by the food administration.

Timely House Cleaning Helps

It is possibly a little late to talk about house cleaning but some of the things I have in mind are helpful at all times of the year. I imagine many of us feel we cannot buy new carpets, etc., this year; and yet we find the old ones impossible. The old-time braided and knitted rugs of our grandmother's time are much in use again. They cost nothing but our time and are not only serviceable, but very pretty, too. And they are easily made.

We all have rags we could use, and with a little dye we can have whatever colors we want. By painting the floor (which costs little) and making some dainty curtains, we can have attractive, homey rooms at little cost. You can also make very pretty porch mats the same way, only make heavier braids and use darker rags. Make them the size of ordinary porch mats. I will be glad to give directions or further suggestions for those wishing them.

To Turn Milk Sour

If we wish to use a recipe that calls for sour milk and have none at hand, we warm sweet milk and add one teaspoonful of good cider vinegar to each cupful of milk. Then let stand a few minutes. It will be just as good as milk soured in the usual way.

Barley Flour

Our attention has been called recently to the use of barley flour as a substitute. Good barley flour is as nutritious, as wholesome and as palatable as wheat flour. Mr. Hoover says: "The rediscovery of barley flour as a food is a God-send." The food value of barley flour is very similar to that of wheat. We should urge the use of barley flour at every opportunity that offers. If we create a demand for it, we will get it, and if we bake the barley into bread we thus bar it from the "bar."

I have tried barley flour in muffins and bread and found both delicious. I use the following recipe for muffins: Two cups barley flour, 1 tablespoonful melted butter or other shortening, ¼ cup sugar, ½ teaspoonful salt, 1 egg, 1 cup of milk and 2 teaspoonfuls baking powder. Mix the flour, sugar, salt and baking powder thoroly. Beat the egg, add milk and stir quickly into dry mixture. Add the melted butter last. Bake in hot oven for 25 minutes.

For bread, I use a potato bread recipe, using four parts barley flour and one part wheat flour. We find it to be all that is claimed for it.

Rhubarb Pie

To retain the juice in rhubarb pie, dice one small cupful of stale bread to each pie. Scald the rhubarb, and bake as usual. It takes less sugar, and the juices are all retained.—Peggy Norwood.

FRESH AIR FOR BABY

Growing and Building Health in the Fresh Air

For a number of years the second week in May has been designated as 'Child Welfare Week." But in the home every week should be devoted to the "Better Baby Campaign". Good food at regular intervals, fresh pure air, and plenty of sleep are necessary for the proper development of the child.

The photograph on this page shows a nine-weeks-old baby in a sleeping bag out on the front porch for her regular afternoon nap. The bag may be made of an old blanket, eiderdown or some other warm material. It has a hood which fits right over her tight hood. It does not have sleeves, but is roomy and has two thicknesses over the chest and folds over the feet in such a manner that there is no possible chance for baby to kick out and get cold.

The bed is nothing more than an ordinary clothes basket which has been enameled. It rests on a homemade truck that is 17 inches high, 12 inches wide and 24 inches long. The wheels were turned out of a board. This truck is easily pushed from room to room, and is high enough to prevent backaches. The basket may or may not be fastened to the truck while the baby is small, but as baby grows stronger the basket will need to be fastened in some way.—Lella Gaddis, Purdue Exten. Dept.

PRESERVE EGGS NOW

Now is the time to put eggs down in water glass for next winter's use, urges the Pennsylvania State College poultry extension division. This season, being two weeks in advance of normal years, indicates that production is now about at its highest point, hence eggs are practically as cheap as they will be at any time this year. Only infertile, fresh, clean, unwashed and sound eggs should be packed. To one quart of water glass, which may be purchased from a druggist, add nine quarts of boiled water which has been allowed to cool. Mix thoroly. The eggs should be placed in earthen jars and the solution poured over them. They should be covered with at least two inches of liquid and stored in a cool place, preferably the cellar.

This is a reasonable, convenient and cheap way to provide an abundance of eggs for the late fall and winter months.

INDIAN BREAD

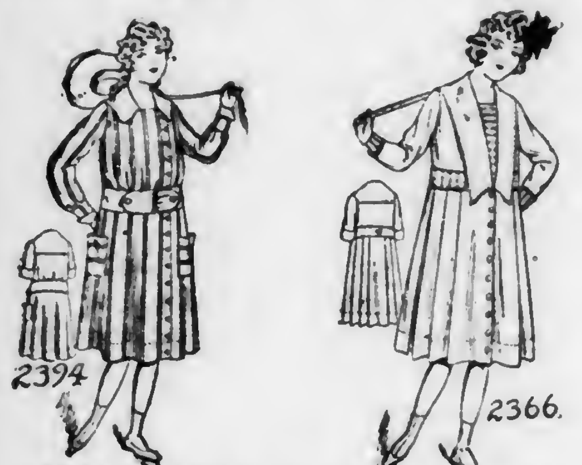
Two cups Indian meal (cornmeal), 2 cups canaille (shorts or middlings—in times of wheat plenty I use wheat flour, but now I have gone back to my grandmother's practice of using the canaille instead), ¾ cup molasses, 1 cup of sour and 1 cup of sweet milk, or 1 cup each of milk and water, 1 teaspoon salt, and 1 teaspoon soda. If water is used instead of sour milk, add 1 tablespoonful melted fat. Steam 3 hours, then bake ½ hour in moderate oven. (Editor's Note.—We cannot forbear expressing our pleased surprise at meeting again in a recipe that friend of our childhood days, canaille; many a dish of cornmeal and canaille did your editor eat when a little girl. When we hear owners of tender alimentary canals nowadays complain that the modern well-bolted cornmeal is too scratchy for them, we feel sory for them that they missed the good alimentary discipline and vitalizing properties afforded by canaille, as we used to call the wheat middlings in those days.)

If you run your household on three pounds of sugar a month per person, when fall comes the grocer won't have to hang up the sign, "No Sugar".

PENNSYLVANIA FARMER PATTERNS

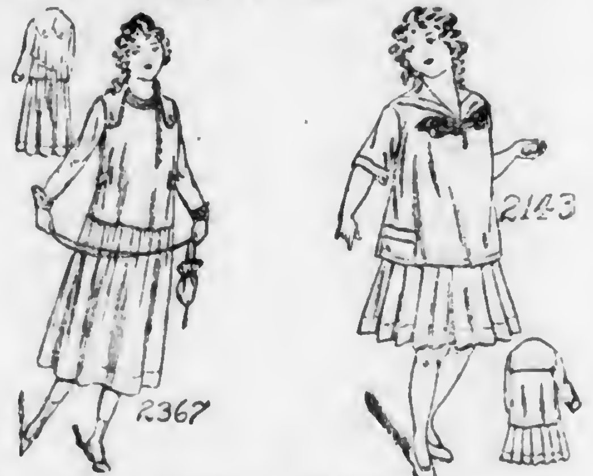
Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

2394.—Daughter Will Like This.—Striped seersucker, gingham, percale, galatea, linen or khaki are nice for this model. The skirt is a three-piece model, joined to the gathered waist. The closing is at the side. The sleeve may be in wrist or elbow length. The pattern is in 4 sizes: 8, 10, 12 and 14 years. Size 12 requires 3⅞ yards of 44-inch material. Price, 10 cents.



2366.—Stylish for Girls.—This attractive model would develop well in blue serge, with a trimming of soutache braid. The waist closes at the side, under a jaunty collar. The skirt is arranged in plaits. The pattern provides a short, wide sleeve, also one finished in wrist length, both with a smart cuff. Four sizes: 6, 8, 10 and 12 years. Size 10 require 4⅞ yards of 36-inch material. Price, 10 cents.

2367.—Generally Becoming.—The dress is loose fitting, so that is slips easily over the head. The front is closed at the left side. Four sizes: 8, 10, 12 and 14 years. Size 14 will require 4¾ yards of 36-inch material. Price, 10 cents.



2143.—Popular Middy Blouse. —The blouse is of the slip-on style and the skirt is joined to an underwaist. The sleeve may be in wrist or elbow length. Pattern is in 5 sizes: 4, 6, 8, 10 and 12 years. It requires 4¼ yards of 27-inch material for an 8-year size. Price, 10 cents.

HOW BIRDS CONSERVE CROPS

The value of birds to man is based principally on their feeding habits. Their greatest help is thru their activity in eating harmful insects, their eggs and larvae. Without this constant aid, we would be powerless to protect our trees and crops from the ravages of caterpillars, beetles, borers, and such creatures. We have many terrible examples of what happens when a species overcomes its natural enemies, that, under normal conditions, hold it in check. The devastation caused by the rapid increase of the Gipsy and Brown-tail Moths thruout New England, the Cotton-boll Weevil in the South, and the injurious fruit scales in California, all show the effects of such insect invasions. These ravenous creatures cause an annual loss to our forestry and timber interests of at least $100,000,000, as is shown by figures issued by the U. S. Department of Agriculture.

Much valuable data has been compiled by the U. S. Biological Survey, at Washington, and by various state departments, notably in Massachusetts, New Hampshire and Pennsylvania. In these papers it will be found stated, to quote Chapman, "that the stomach of a single Cedar Waxwing contained 100 canker worms, that one Cuckoo had eaten 250 caterpillars, that 454 plant-lice were found in the stomach of one Chickadee, that a Nighthawk had made a meal of 600 grasshoppers, that a Flicker had devoured 1,000 chinch bugs, that a Scarlet Tanager was seen to eat 630 gipsy moth caterpillars in eighteen minutes, or at the rate of 2,100 an hour; while a Maryland Yellow-Throat ate 3,500 plant-lice in forty minutes, or at the rate of 5,270 an hour!"

Insects are known to spread diseases among men and domestic animals. This is particularly true of mosquitoes which are well known as distributors of malaria and yellow fever. These dangerous insects are destroyed in enormous numbers by Nighthawks, Whippoorwills, Swifts, Swallows and Flycatchers. The larvae, which swarm in standing water, are eaten by ducks and other marsh-inhabiting birds. Flies are also famous germ-carriers. They are eaten by practically all species of birds and thus much contagion is prevented.

Another important service the birds render for man, particularly the agriculturist and orchardist, is in the destruction of harmful rodents. A considerable percentage of the heavy expense borne by the farmer is caused by rats and by field mice of many species. These cause great damage to the crops, both in the field and when stored. During the winter, many young fruit trees are badly injured or killed outright by the mice which gnaw the tender bark, girdling the trunk and stripping the larger roots. Hawks, Owls and Crows are constant destroyers of these creatures. They are killed occasionally by Gulls and Herons also.

Gulls and Crows are also valuable as scavengers, keeping our harbors and beaches clear of refuse that would otherwise spread contagion. The Black Vulture and "Turkey Buzzard" render similar services in the southern states.

Of all our birds none offers a better record than Bobwhite. He is entirely beneficial in every habit and does absolutely no harm. He is resident with us the entire year, destroying 145 species of insects during the summer and 129 kinds of harmful weed-seeds in winter. He is a bird of beautiful plumage and cheery whistle. One would suppose that every farmer would rise in his defense against those who regard him only as a game bird. Unfortunately he is not often appreciated in his own fields, and to the average farmer Bobwhite is only something to shoot and eat. We trust that the extensive educational campaign carried on during recent years will produce its desired results and that the value of this splendid little worker in our fields will be recognized.

The Woodpeckers and Thrushes have suffered also—not from the shot of the sportsman, but from the guns and traps and snares of the poacher, who, thru ignorance or malice, violates the regulations enacted for the preservation of our wild life. The Downy Woodpecker has a splendid economic record to offer: 74 percent of its food is of insects, including ants, beetles, bugs, flies, grasshoppers, caterpillars and spiders. The Flicker is often found in the "game" bag of the poacher. This splendid bird specializes in the destruction of ants, making of them 42 percent of its total diet. Of its entire food, 56 percent is of animal matter, 39 percent is vegetable, and 5 percent mineral.

Robins are still killed by those who refuse to recognize the greater value of a live bird over that of a dead one. Consider the food of a robin: Insects, 40 percent; wild fruit, 43 percent; cultivated fruit, 8 percent; miscellaneous vegetable food, 5 percent. Such a record alone should protect any bird from destruction and when we add the Robin's aesthetic value to his economic worth—add his cheerful song to his beneficial appetite—the killing of such a bird is truly criminal. And yet the laws of eight of our states allowed the killing and sale of Robins until the coming of the Federal Migratory Bird Law, which provides Government protection for the Robin for all time.—T. Gilbert Pearson, Sec'y. Association Audubon Societies.

STATISTICS YOU SHOULD REMEMBER

At age fifty-five in case of business failure only one in five hundred ever recovers.

At age sixty-five 97 percent of all men are dependent financially.

The average estate lasts from seven to nine years following the creditor's death. Ninety percent of estates over five thousand become dissipated within seven years, seven percent of the estimated value of American lives are covered by life insurance, and still seven-eighths of what Americans leave at death is life insurance.

Nineteen out of twenty fail to provide for their old age, or for their family.

Eight million women must work to live.

Thirty-five percent of widows are in want, while 90 percent lack life's common comforts.

Ninety percent of children who enter school at age of six have to go to work before they reach the eighth grade.

Sixty-nine men out of eighty-five reach the age of sixty-five without one dollar.

Eighty-nine men out of 100 leave no estate at death.

The Moline Grain Binder
The Best Work Under the Worst Conditions

THE Moline Binder has a record of of over 50 years of good, honest service wherever grain is grown. In difficult work, in continuous running without stops or breakdowns—in short, in an emergency, Moline superiority is apparent.

The Moline Grain Binder is built from the ground up of the best materials by skilled workmen and has been gradually developed and improved until it is as near perfection as possible. It is built to do the best work even under the worst conditions. That's why a Moline Binder user is never satisfied with anything else.

When you buy a Moline Grain Binder you get the benefit of 50 years' service, the lightest draft, the greatest stability, the strongest construction and the greatest reliability in a grain binder—you get crop insurance.

A typical instance of Moline performance under unusual conditions is reported by Jerry Rivard of Boubonais, Ill., as follows:

The Moline 8-ft. Binder bought of you I used in cutting 110 acres of grain. I cut seven acres of new ground where I did not think it could do the work, being very trashy ground, and the men present insisted I was doing wrong to try to cut it with a binder, but the Moline Binder went through, cutting all. I never missed a bundle and never broke anything. I consider this remarkable, considering the condition under which the test was made.

We have many letters such as this on file, all equally enthusiastic over the work of the Moline Binder.

The frame of the Moline Binder is extra strong, making it particularly good for tractor use.

See your Moline Dealer about the Moline Binder now, or write us for full information.

MOLINE LINE
Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Salient Six Automobiles.

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Does The Work Of Four Stoves Burns The Coal Of Two

It is like combining four stoves in one; and that one down cellar, out of the way. Think of it: no dust from the ashes. No coal spilling on the floor.

All that room free, that used to be taken for stoves.

It has the heating power of four stoves, but burns the coal of only two. This is a statement we can prove to you. Prove it, not by what we say, but by what the Monroe users say.

The Monroe has only one pipe and one register. By taking advantage of one of nature's natural laws, this one register abundantly heats every room in your house, upstairs and down.

Easy to put in. Costs surprisingly little.

Made for a lifetime of service.

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The Trainmaster's Story

By Frank H. Spearman

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(Concluded from last week)

The coming change in office force was noised around. It was known that Dave, admittedly the brainiest and most capable of the Old Guard had been singled out, regardless of his past record, for promotion. "I'm not here sitting in judgment on what was done last year," Bucks had said plainly. "Its what is done this year and next that will count in this office." And the conductors, thinking there was a chance, believing that at last if they did their work right they would get their share of the promotions, began to carry their lanterns as if they had more important business than holding up stray fares.

Meantime Dave hung to his run. Somehow the old run had grown a part of him and he couldn't give it up. When he told Bucks at the end of the week that he would like another week to make his decision the superintendent waved it to him. Everybody began to make great things of Dave; some of the boys called him trainmaster and told him to drop his punch and give Tommie a show.

He didn't take the humor the way one would expect. Always silent, he grew more than that; sombre and dejected. We never saw a smile on his face. "Dave is off," muttered Henry Cavanaugh, his old baggageman, "I don't understand it. He's off. You ought to talk to him, Tommie. You're the only man on the division can do it."

I was ordered west that night to bring a military special from Washakie. I rode up on Dave's train. The hind Los Angeles sleeper was loaded light, and when Dave had worked the train and walked into the stateroom to sort his collections, I followed him. We sat half an hour alone and undisturbed, but he wouldn't talk. It was a heavy train and the wind was high.

We made Rat River after midnight, and I was still sitting alone in the open stateroom when I saw Dave's green light coming down the darkened aisle. He walked in, put his lamp on the floor, sat down, and threw his feet on the cushions.

"How's Tommie to-night?" he asked, leaning back as if he hadn't seen me before, in his old teasing way. He played light heart sometimes; but it was no more than played; that was easy seeing.

"How's Dave?" He turned, pulled the window shade and looked out. There was a moon and the night was bright, only windy.

"What are you going to do with Bucks, Dave?"

"Do you want my punch, Tommie?"

"You know better than that, don't you?"

"I guess so."

"You're blue to-night. What's the matter?" He shifted and it wasn't like him to shift.

"I'm going to quit the West End."

"Quit? What do you mean? You're not going to throw over this trainmaster offer?"

"I'm going to quit."

"What's the use," he went on slowly. "How can I take charge of conductors, talk to conductors? How can I discharge a conductor for stealing when he knows I'm a thief myself? They know it; Bucks knows it. There's no place among men for a thief."

"Dave, you take it too hard; everything ran wide open here. You're the best railroad man on this division; everybody, old and new, admits that."

"I ought to be a railroad man. I held down a division on the Pan Handle when I was thirty years old."

"Were you a railroad superintendent at thirty?"

"I was a trainmaster at twenty-seven. I'm forty-nine now, and a thief. The woman that ditched me is dead; the man she ran away with is dead; my baby is dead, long ago." He was looking out, as he spoke, on the flying desert ashen in the moonlight. In the car the passengers were hard asleep and we heard only the slew of the straining flanges and the muffled beat of the heavy truck under us.

"There's no law on earth that will keep a man from leaving the track once in a while," I argued; "there's none to keep him from righting his trucks when the chance is offered. I say, a man's bound to do it. If you won't do it here, choose your place and I'll go with you. This is a big country, Dave. Hang it, I'll go anywhere. You are my partner, aren't you?"

He bent to pick up his lantern, "Tommie, you're a great boy."

"Well, I mean it." He looked at his watch, I pulled mine; it was one o'clock.

"Better go to sleep, Tommie." I looked up into his face as he rose. He looked for an instant steadily into mine. "Go to bed, Tommie," he smiled, pulling down his visor, and turning, he walked slowly forward. I threw myself on the couch and drew my cap over my eyes. The first thing I felt was a hand on my shoulder. Then I realized I had been asleep and that the train was standing still. A man was bending over me, lantern in hand. It was the porter.

"What's wrong?" I exclaimed.

"There's trouble up ahead, Mr. Burnes," he exclaimed huskily. I sprang to my feet. "Have you got your pistol?" he stuttered.

Somebody came running down the aisle and the porter dodged like a hare behind me. It was the hind-end brakeman, but he was so scared he could not speak. I hurried forward.

Thru the head Los Angeles sleeper, the San Francisco cars and the Portland I ran without meeting a living soul; but the silence was ominous. When I caught a glimpse of the inside of the chair car, I saw the ferment. Women were screaming and praying, and men were burrowing under the foot-rests. "They've killed everybody in the smoker," shouted a traveling man, grabbing me.

"Damnation, make way, won't you!" I exclaimed, pushing away from him thru the mob. At the forward door, taking me for one of the train robbers, there was another panic. Passengers from the smoker were jammed together there like sardines. I had to pile them bodily across the seats to get thru and into the forward car.

It was over. The front lamps were out and the car smoking bluish. A cowboy hung pitched head and arms down over the heater seat. In the middle of the car Henry Cavanaugh, crouching in the aisle, held in his arms Dave Hawk. At the dark front end of the coach I saw the outline of a man sprawled on his face in the aisle. The news agent crawled out from under a seat. It must have been short and horribly sharp.

They had flagged the train east of Bear Dance. Two men boarded the front platform of the smoker and one the rear. But the two in front opened the smoker door just as Dave was hurrying forward to investigate the stop. He was no man to ask questions. He saw the masks and covered them instantly. Dave Hawk any time and anywhere was a deadly shot. Without a word he opened on the forward robbers. A game cowboy back of him pulled a gun and cut into it; and was the first to go down, wounded. But the train boy said, Hawk himself had dropped the two head men almost immediately after the firing began and stood free handed when the man from the rear platform put a Winchester against his back. Even then, with a hole blown clean thru him, he had whirled and fired again; we found the man's blood on the platform in the morning, but, whoever he was, he got to the horses and got away.

When I reached Dave, he lay in his baggageman's arms. We threw the carrion into the baggage car and carried the cowboy and the conductor back into the forward sleeper. I gave the go-ahead orders and hurried again to the side of the last of the Old Guard. Once his eyes opened, wondering stonily; but he never heard me, never knew me, never spoke. As his train went that morning into division he went with it. When we stopped, his face was cold. It was up to the Grand Master.

A game man always, he was never a cruel one. He called himself a thief. He never hesitated with the other men high and low to loot the company. The big looters were financiers; Dave was only a thief, yet gave his life for the very law he trampled under foot.

Thief, if you please; I don't know; we needn't quarrel about the word he branded himself with. Yet a trust of money, of friendship, of duty was safer far in Dave Hawk's hands than in the hands of abler financiers.

I hold him not up for a model, neither glory in his wickedness. When I was friendless, he was my friend; his story is told.

The End.

FARMER JONES' SNAKES

The Professor, who is spending the summer on Farmer Jones' place, came around the corner of the milk house the other morning just in time to see Mr. Jones crush a snake's head under his heel.

"There, drat it," Mr. Jones remarked. "I guess I won't lose any more milk now. Mother has been settin' a small pan extra ever since Bess came in, and every morning all the cream was gone off it. This here milk snake took it."

The Professor, who knows about such things, picked up the dead body of the snake. He slit it open with his knife, took out the stomach, and emptied it of six or seven very young rats, but no milk. Farmer Jones looked on in atonishment.

"Well, I vum," he exclaimed. 'who'd a thought that? I'm sorry. But they milk cows, tho. Jim Smith caught one at it. Took the whole night's milk, too. He said so."

The Professor took the snake's stomach and filled it with water from the brook. It held about a tablespoonful.

"There you are. Now tell me how such a snake could make any difference in a cow's yield—if it did milk one, as I know it cannot. A milksnake prefers rats and mice to any other diet; and all these stories about milking cows are absurd. You know yourself that Jim is always telling a big one. That's how these tales get started."

Farmer Jones has great confidence in the Professor, and is open to conviction.

"I believe you," he said—"but how about the milk? That's gone."

As they opened the milk-house door, there was Tabby busily engaged at the milk pan.

"Scat!" cried Mr. Jones. "I'll teach ye!" but the cat was out of the window. "I'll be durned," he continued, "here I was blamin' that poor snake for that cat's doin's, but I'll fix her."

The two men started for the hayfield, where the mowing machine was making its noisy rounds.

"The boys killed a big blacksnake that was under a hay cock last night," said the farmer. "Maybe you can tell me something about him. Here he is."

The Professor performed another post-mortem on the mangled body, and brought two field-mice and a small bird to light.

"You can see what this fellow had for supper," he remarked. "its a pity to kill such snakes."

"Yes, but how about the bird? And a blacksnake is poison. They'll chase ye and squeeze ye, too."

"Its a fact that blacksnakes eat birds," admitted the Professor, "but how about your cat? I saw her with a young meadowlark yesterday. She eats birds."

"That's so, too. I remember, mother had a time to keep her from a nest of robins this spring, but she got 'em anyhow. Say," he added, "this snake beats a cat for catchin' mice. Why, it can go right in their holes and get 'em. But ain't they poison?"

The Professor and Farmer Jones sat down on the stone wall.

"A blacksnake isn't venomous," began the Professor, "and it won't chase you. It'll fight if you corner it, tho. And as for squeezing the breath out of you, that little three-foot milksnake has a more powerful squeeze than this five-foot blacksnake, but neither could hurt anyone. Look here," and he opened the dead snake's mouth. "Do you see these teeth—all solid. All harmless snakes have such teeth. Venomous ones have two hollow fangs in the top of the mouth, in front; and these communicate with venom glands in the back of the head. When a poisonous snake bites he squeezes some venom out thru these fangs into the wound. It works just like the hypodermic needle they used to inject serum for cholera into the hogs last spring. Of course, such snakes have solid teeth, too, with which to hold the prey.

"What's the stinger he sticks out at you?"

"That isn't a sting. That's the tongue, which is used as a feeler. It is perfectly harmless. And a snake can't spit venom at you, nor poison you with his breath, nor sting you with his tail. He has to bite you to poison you."

"But aren't all snakes poisonous?"

"A great many people think so," answered the Professor, "but as a matter of fact, in the East, north of Virginia, only the rattlesnake and copperhead are venomous. You know those."

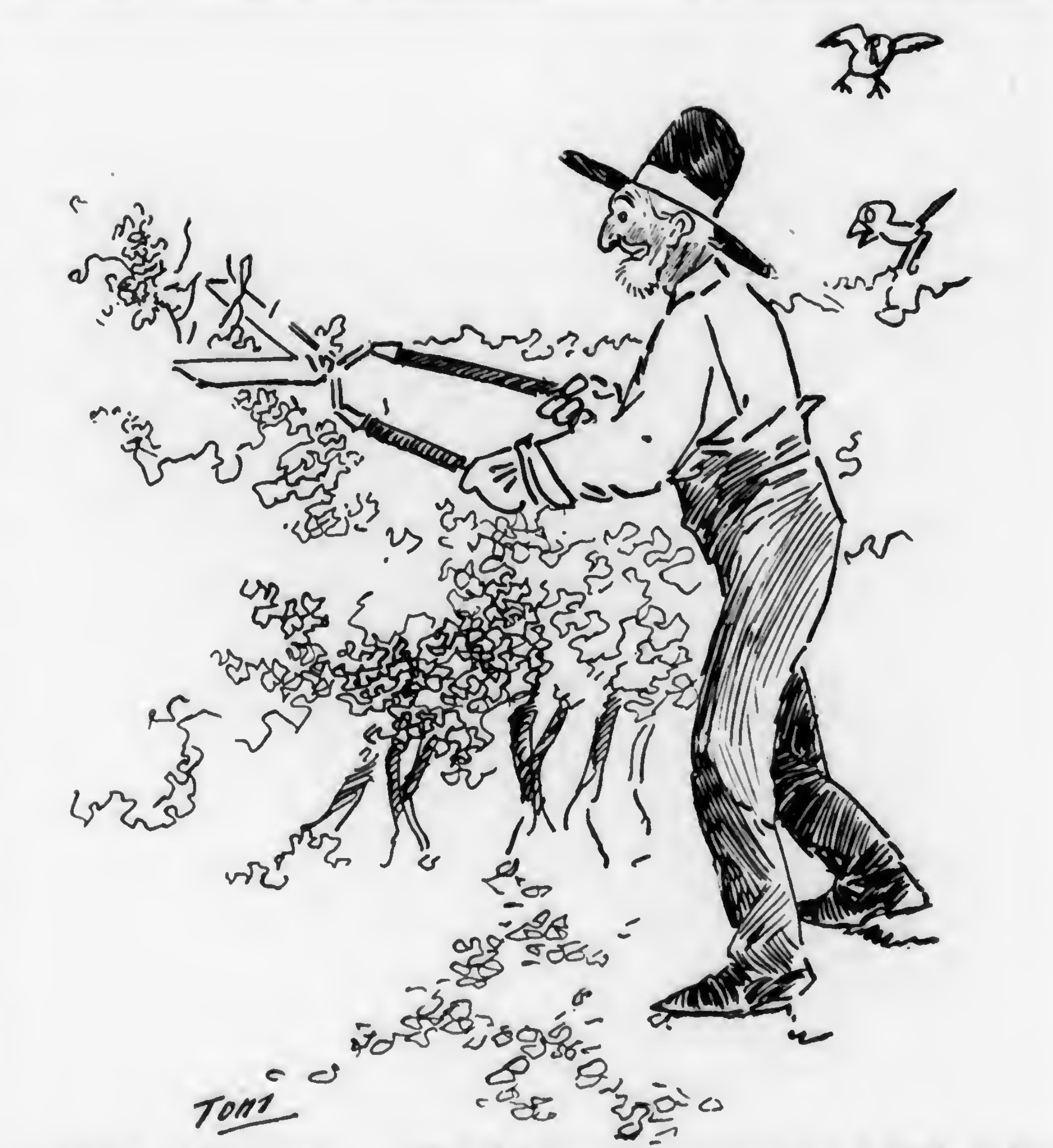
"Yes," replied the farmer. "I've killed 'em. But I thought the others were. Everybody always said so. I suppose they just heard so, too."

"I suppose you won't kill snakes any more."

"Well, I don't know. Not if they eat mice and rats. But don't some of 'em do harm? I could kill those."

The Professor laughed outright. "Its pretty hard to get over the Garden of Eden, isn't it? Suppose you kill all the rattlers and copperheads you see, together with the watersnakes as they eat fish. The others either do you good or at least do no harm. Its a pity to kill them just because they're snakes."

"I guess you're right. Does seem pretty mean to club 'em after they catch mice and rats for you. I'll let 'em be. That was a mighty interestin' talk, and new to me. Well, I've got to help with the hay. Good mornin'."—R L. Scharring Hausen.



Uncle Amos says: "This business of trimmin' up a bush to suit our needs and please our eye is crude missionary work. Wise pruning helps Nature get the best out of a plant. The human plant that grows for itself alone is a good deal like a hedge plant gone to seed. You can't use a pair of hedge clippers on a human plant; but a high standard of community morals and a general spirit of right living does the job pretty well."

WEATHER MONTH BY MONTH

(Concluded from Page 13)

25 percent of the years. The accompanying table will make this more plain.

(Percent of years having excess yields).

	May	June	July	Aug.	Sept.
Rainfall above normal	33	69	66	75	75
Rainfall below normal	71	60	50	50	50
Temperature above normal	83	57	100	80	73
Temperature below normal	25	66	42	40	33

This table clearly indicates that when the weather is dry and the temperature warm—conditions which favor planting and germination—in May, and warm and wet in August, the crop is usually up to or above the average. The table apparently shows that it makes no difference whether the rainfall is above or below normal in June. This, however, is misleading. There were five Junes in which the temperature was above normal. Three of these were in years when the crop was above the average and two were below. But the difference between the three excess crops and the two deficit crops shows a deficit of 5.8 bushels per acre. Of the five Junes when the temperature was below normal, there were also three crops above the average and two below. But the difference shows an excess of six bushels per acre.

All investigations of this kind, therefore, need careful study and comparison. Conditions may obtain one month which seem to assure fair crops, but the reverse may be true the next month. They are valuable, however, as we shall see that, with corn as well as oats, there are apparently two months which, if favorable, almost invariably good crops result. Keeping these things in view with regard to temperature and precipitation, a chart has been prepared which shows plainly the conditions which have been current during the growing season of corn during the past ten years. The letter "f" is placed under the name of the month if the conditions were favorable; the letter "u", if unfavorable. If the "f's" predominate, the season is said to be "Favorable," while the season is designated "Unfavorable" if the "u's" predominate. The excess or deficiency in bushels is marked immediately following the words "Favorable," or "Unfavorable."

It will be noticed that the year 1914 is designated as unfavorable, while the departure from the normal production shows an excess. This is explained from the fact that the rainfall, while deficient, was well distributed, no serious drouth resulting. The main deficiency occurred in September which followed a rather humid August.

	May	June	July	Aug.	Sep	F—U	
Prec.	f	f	u	f	u	3—2	
1906							Favorable—1.0 bu. above.
Temp.	f	u	u	f	f	3—2	
Prec.	f	u	u	u	f	2—3	
1907							Unfavorable—6.7 bu. below.
Temp.	u	f	u	u	f	2—3	
Prec.	u	f	f	u	u	2—3	
1908							Unfavorable—0.3 bu. above.
Temp.	u	f	f	u	f	*3—2	
Prec.	f	f	u	u	u	2—3	
1909							Unfavorable—7.2 bu. below
Temp.	f	u	u	u	u	1—4	
Prec.	f	u	u	u	f	2—3	
1910							Favorable—1.8 bu. above
Temp.	f	f	f	f	f	5—0	
Prec.	f	f	u	f	f	4—1	
1911							Favorable—5.3 bu above
Temp.	f	u	f	f	f	4—1	
Prec.	f	f	f	f	f	5—0	
1912							Favorable—3.3 bu above.
Temp.	f	f	u	u	f	3—2	
Prec.	u	u	u	u	u	0—5	
1913							Unfavorable—0.2 bu. below.
Temp.	u	f	u	f	u	2—3	
Prec.	f	u	u	u	u	1—4	
1914							Unfavorable—3.3 bu. above.
Temp.	f	f	u	f	u	*3—2	
Prec.	u	u	f	f	u	2—3	
1915							Unfavorable—0.7 bu. below.
Temp.	u	f	u	u	f	2—3	

*Is it possible that the temperature, being favorable at the opportune time, brought the production up to an excess in an unfavorable year?

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 20, 1918.

There has been a sharp advance in the new potato market since our last report. The demand and prices have been steadily advancing until at this writing strictly fancy No. 1 barreled potatoes are selling at $5, with stock showing more or less heat ranging from $4@4.50 per bbl. No. 2 potatoes are now selling at $3.50@4, as to quality. Best No. 1's in 150-pound sacks are selling at $4; with heated from $3@3.50, as to quality. No. 2 sacks range all the way from $2.25@3. Old potatoes are also showing an improvement in demand and higher prices prevail. Both Pennsylvania and New York state stock are selling generally from $1.20@1.35 per cwt., with an occasional small lot higher. The tone of the market on both old and new potatoes is very firm and the prospects are for a continued strong, healthy market. Sweet potatoes are in a very light supply and the market is showing little or no change. Best New Jersey stock in ⅝ bushel baskets is selling at $1.50@1.60, with hampers from $2.25@2.50.

Vegetables

Supplies of asparagus from nearby Pennsylvania and New Jersey points are fairly liberal, and under a good demand the market is cleaning up from day to day at prices averaging somewhat higher than last week. Collossal is now selling from 22@27c; fancy, 17@22c; prime, 12@17c; culls, 10@12c per bunch. Maryland and Delaware grass is in light supply and selling anywhere from 10@22c per bunch. We again wish to call the attention of shippers that green asparagus always sells from 2@5c per bunch higher than the white, grade for grade, in this market.

There is little or no change to be noted in the bean market, both fancy green and wax selling from $2.50@3 per hamper. There are, however, quite a few poor, spotted and heated beans arriving which are irregular in size and sell all the way from $1@2, as to quality. Dried beans continued in ample supply, but the market is dull with prices showing practically no change. Marrows sell from $13.50@14 per cwt.; peas medium, $12@13, red kidneys, $12@13.50. Artichokes are in ample supply for the demand and the market is about steady at $2@2.50 per box; and $4.50@4.75 per drum. New beets are a little more plentiful but the market is firm and active at 4@8c per bunch, as to size and quality. Old carrots are in light supply and fair demand at $1@1.50 per bushel or $2.50@3.25 per barrel. New carrots are ranging from 1¼@3½c per bunch, as to size and quality.

As we reported in these columns last week, the cabbage market touched bottom and is now reacting and prices are advancing. At this writing cabbage is selling mostly at $1.50@1.75 per crate. Cucumbers have taken a big drop from the high prices prevailing last week, best stock now selling at $3 per hamper, with poor as low as $1. Egg plants are in light supply and market is firm and higher. One car sold early this week at $4@4.50 per crate. There is still a moderate demand for horse radish at $3@5.50 per barrel. Nearby Pennsylvania and New Jersey kale is more plentiful and the market is lower, ranging from $1@1.50. Lettuce has taken another decline from that reported in these columns last week. Near-by supplies are getting quite plentiful and Southern lettuce is not wanted unless strictly fancy. North Carolina lettuce is selling at 50c@$1.50 per hamper; Virginia, 50c@$1; and Eastern Shore, 50c@$1; New Jersey, 50c@$1.50 per box; and Pennsylvania, $2@5.50 per barrel. Under light supplies mushrooms are firm and higher than last week, ranging from 35@60c per pound.

The onion market, after being rather dull and draggy for several days, appears to be doing a little better. Supplies are not so heavy and prices are about 25c per crate higher than reported last week, now selling at $1.68@$1.75 for No. 1's; No. 2's, $1.35@1.50; culls and No. 3's, $1.05@1.15. Peas have taken a big decline due largely to the poor quality of the supplies. Some being badly heated and are selling as low as 50c per hamper, with best selling from $2.50@3. Eastern Shore and Norfolk are selling all the way from $2@3 and Baltimore peas from $1.50@2.75. Parsley is much higher than reported last week, a car of Southern barrels selling from $5@6.50 per barrel, while nearby parsley is selling from 3½@5c per bunch. Peppers continue in very light supply and the market is a little firmer at $3.75@4.25 per crate. Radishes from New Jersey and Pennsylvania points are in abundant supply and the market is slow to clean up at 1@2c per bunch. Pennsylvania rhubarb and scullions are showing little or no change. Rhubarb is selling from 2@2½c per bunch and scullions from 75c@$1 per 100. Pennsylvania and New Jersey spinach was extremely plentiful and the market was in bad shape, but at this writing is meeting a good demand and movement at 40@60c per box, and 25@50c per basket. Strictly fancy tomatoes show an improvement over last week's prices. Fancy 144 size is selling all the way from $3.50@4.50 per crate; choice 180 size, $2.50@3.50; gems and culls, $1.50@2. There is practically no demand from white turnips which are selling around $1 per sack.

Fruits

Altho supplies of strawberries are much more liberal than last week, and prices are ruling lower, the market is firm and active on all fancy berries, as quoted. Eastern Shore berries, 12@15c, mostly 16@18c, with some fancy at 20c and a few extra fancy still higher. Some of the Express berries, however, are arriving in bad order and weak, and selling lower, according to condition. Maryland and Delaware berries are selling generally at 15@18c, with a very few at 20c. Norfolks are selling all the way from 12@15c per quart. Quite a number of Southern peaches are now arriving on the market, there being 13 cars offered Monday, prices ranging all the way from $1.25@2 per crate, mostly $1.50@1.75. Apples continue to bring high prices. Ben Davis selling from $4.25@6.50 and Baldwins from $3.50@7 per barrel. Winesaps in boxes sold from $3@4 per box, and Newtowns from $2.50@3; these being about the only varieties of apples on the market at this time.

Poultry

The market on live fowl is now showing very little change from prices quoted a week ago, sales averaging 30@30½c.; spring chickens, however, have taken about a 5c drop, fancy weighing 1¾@5 lbs. each now selling from 63@65c per pound, while the smaller sizes weighing from 1 to 1½ pounds are selling from 58@60c; old roosters, 22@23c; ducks, 26@30c.

Eggs

The egg market continues to show an inclination to ease off as was reported in these columns last week. Prices have been declining a trifle each day until at this writing current receipts are selling at 32c and nearby firsts at 33½c; Western firsts, 32c; extra firsts, 33½c. These prices are from 3½@4c per dozen lower than were prevailing one week ago on the same grades.

◆

LANCASTER PRODUCE

Lancaster, Pa., May 20, 1918.

The first appearance of new potatoes in large quantities on the local market was made today, and they met a brisk demand at twenty cents a half-peck. Eggs were again offered in abundance at the old prices, but butter was scarce and brought from 50 to 53 cents per pound.

Butter and Eggs.—Creamery butter, 55@60c per lb; country butter, 50@53c; fresh eggs, 35c per dozen.

Poultry.—Dressed old chickens, $1.20@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Produce.—Asparagus, 5@8c bunch; spinach, 20c ½ pk; potatoes, 8@12c ½ pk; do., 40@75c per bu; new potatoes, 20c ½ pk; sweet potatoes, 25@30c ½ pk; lettuce, 5@12c hd; lima beans, 18c pint; new beans, 25@30c ½ pk; new peas, 40c ½ pk; apples, 35@40c ½ pk.

Grain Market.—Milling wheat, $2.05 per bu; new ear corn, $1.60; rye, $1.90; oats, 80c; No. 1 timothy hay, $23 per ton; clover hay, $25; wheat straw, $17; oat straw, $10; mixed hay, $22.

◆

PITTSBURGH PRODUCE

Pittsburgh, Pa., May 20, 1918.

The volume of country produce moving is large, practically everything in this line being wanted. Good apples are in small supply and stocks on the market are cleaning up rapidly. Strawberries are in good demand and the distribution is on a liberal scale. In the vegetable section there is a steady outgo of potatoes, onions, tomatoes, cabbage and various other descriptions.

Asparagus, southern, $3.50@4 box; do., home grown, 75@90c per bundle. Beans, green, $2@2.50 hamper. Beets, $1@1.25 hamper. Cabbage, old, $25@30 ton; do., new, $1@2.25 crate. Carrots, new, 35@45c doz. Cucumbers, $2.50@3.25 hamper. Horseradish, $5.50@6 bbl. Lettuce, southern, $2@3 hamper; do. leaf, 40@45c basket. Onions, $1.50@1.75 sack; yellow, $1.65@1.75. Peas, $2.50@2.75 hamper. Potatoes, old, $1.75@2 sack; do., new, $2.50@4 bbl; do., sweet, $1.85@2 hamper. Radishes, 25@35c doz.; $1@1.35 basket. Rhubarb, 20@25c bundle. Spinach, 50@55c bu. Tomatoes, $1.75@3.50 crate. Apples, $4@7 bbl. Strawberries, $4.50@4.75 crate; do., fair, $3.50@4.

Receipts of poultry are not excessive and there is no danger of over-accumulation. Farmers are disposed to hold their hens, as they are still producing eggs freely and are werth more as egg producers than as friers or broilers.

Live Poultry.—Hens, 33@35c lb; springers, 32@35c; roosters, 20@22c; turkeys, 30@35c; ducks, 28@30c; geese, 20@22c; guinea hens, $1 pr.

Dressed Poultry.—Hens, 38@40c lb; springers, 35@40c; turkeys, 38@43c; ducks, 38@40c; fowls, 38@40c.

The butter market remains unchanged. No change was made at Chicago Saturday and last week's prices will be in force again here. The egg market is quiet and has changed but little recently.

Elgin prints, 46@46½c; Elgin tubs, 45½@46c; New York cheese, 28@30c; do., Swiss, 32@33c. Selected eggs, 37@38c; eggs at mark, 35@36c. Goose eggs, $1@1.10 doz; ducks eggs, 38@40c.

Grain and Hay.—No. 2 yellow ear corn, $2@2.05 bu; No. 3 yellow shelled, $1.75@1.80; No. 2 white oats, 82½@83c; No. 3 do., 81½@82c bu; standard oats, 82@82½c bu; No. 1 timothy hay, $26.50@27 ton; No. 2 do., $24.50@25. No. 1 light mixed, $22@23. Rye straw, $14@14.50. Oat straw, $12@12.50. Wheat straw, $12@12.50.

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BALTIMORE PRODUCE

Baltimore, Md., May 20, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, 85c@$1 cwt; do., New York, 85c@$1; Easter Shore, 75@85c cwt. Sweet potatoes, yellow, $4@5 bbl; $1.75@2 hamper. Asparagus, $1.50@2.25 doz. Beets, 3@5c bch. Cabbage, new, $1.50@2 crate. Celery, Florida, $2@2.75 crate; do., native, 5@6c bch. Cucumbers, $2.50@3 crate. Lettuce, 50c@$1.25 basket. Onions, yellow, $1.50@1.75 cwt; spring, $1@1.25 per 100 bchs. Radishes, $1@1.25 basket. Tomatoes, $2@3 crate. Rhubarb, $2 per 100.

Fruit.—Strawberries, 10 to 15c qt.

Butter.—Creamery, western, fancy, 46@47c; choice, 44@45c; pound prints, 47@48c; do., firsts, 44@45c. Nearby creamery, 41@42c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 34c; Easter Shore and Virginia, 34c; Southerns, 32c.

Live Poultry.—Chickens, 32@33c; do., springers, 55c@60c; old roosters, 18@20c; ducks, 23@26c; pigeons, 35@40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $32; standard timothy, $30.50@31; No. 2 timothy, $29.50@30; No. 1 light clover mixed, $29.50@30; No. 2 light clover, $28.50@29. No. 1 clover mixed, $28.50@29; No. 2 $26@28. No. 1 straight rye straw, $18. No. 1 tangled, $17@17.50; wheat straw, $15@17; oats straw, $16@18.

Grains.—Wheat, bag lots, $2@2.14 bu. Corn, bag lots, white, $1.65@1.70 bu; yellow ear corn, $8.25@8.50 bbl. Standard white oats, 80½@81c; No. 3 white, 79@80c. Rye, No. 2 western, $1.90@2.10; bag lots, $1.60@2.

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NEW YORK PRODUCE

New York City, May 20, 1918.

Butter declines but trade is fairly brisk. Market for cheese holds steady. Eggs tend generally lower. Dressed fowls increasing in supply and lower. Prices on live poultry unsettled. Fruit and vegetables of all kinds in liberal supply with prices tending downward.

Butter. — Creamery, extras (92 score), per pound, 45c; higher score, 45½@46c; thirds to firsts, 35@44; state dairy, 35@45c; ladles, 30@33c.

Cheese.—Colored specials, 25½@26c; daisies, 25@25½c.

Eggs.—Fresh gathered extra, 36@37c; extra firsts, 34½@35½c; nearby white, fine to fancy, 39@40c; ordinary to good, 37@38c; browns, 37@38c.

Vegetables and Greens.—Asparagus, fancy $2.50@3.25 doz. bchs; prime, $1.75@2.25; culls, $1.25@1.50. Beets, per bbl., $1@1.50. Onions, per 100-lb. bag, 50c@$2. Potatoes, Jersey, $1@1.50 per 100 lbs. Carrots, $1.25@2 per barrel. Scullions, per 100 bchs., $1@2; spinach, per bbl., 25c@$1.25.

Apples.—Baldwin, $4@8; Ben Davis, $3.50@5.50.

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YORK PRODUCE MARKET

York, Pa., May 20, 1918.

The past week showed a large attendance at the city markets with quite a large display of spring produce. Buying is slow as a rule, and much is not disposed of at the end of the markets. Potatoes are moving very slow at 45@65c per bu. Apples are about exhausted except a few that the dealers are holding in storage and these are being held at 40c ½ pk. for very inferior grades. Eggs dropped heavily this week.

Eggs.—28@34c per doz.

Butter.—Country, 45@48c lb; separator, 50@54c lb. Milk, 10c quart.

Poultry.—Hens, 23@28c lb; roosters, 25c lb; springers, 45c lb; dressed, 65c@$1.50 each.

Vegetables.—Potatoes, 50@65c bu; 5@10c ½ pk; lettuce, 2@5c a hd; 5c lot, cabbage, new, southern, 3@15c a hd; beets, 5c bx; radishes, 5c bch; onions, 3@5c bch; lima beans, 18c pt; soup beans, 15c pt; corn meal, 10@12c qt; turnips, 20@25c ½ pk.

Country Butchering.—Hams, 40@48c lb; sliced, 45@80c lb; bacon, 60c lb; bologna, 15c ¼ lb; dried beef, 16c ¼ lb; lard, 30@35c lb.

Fruit.—Apples, 15@40c ½ pk; southern berries, 30@45c box.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.25; rye, $2.25; bran, $2.75 cwt; middlings, $3 per cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.60; oats, $1.01; rye, $2.10; bran, $50 per ton; middlings, $56 per ton.

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PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 20, 1918.

Beef Cattle.—The market for steers ruled a shade firmer under moderate offerings and a more active demand. Bulls and cows were well cleaned up and ruled firm. Calves were firmly held.

Steers, good to choice, $15.50@17; fair to good, $13.50@15.25; common to fair, $12.50@13.50; bulls, fair to good, $11@13; common to fair, $9@11; cows, fat, per lb., choice, 9@11½c; fair to good, per lb., 7½@9c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $16@16.50; fair to good, $14@15; common, $10@12; Tennessee and southern, $8@13.50.

Sheep and Lambs.—There was a fair movement in both sheep and lambs and the market ruled firm under moderate offerings.

Sheep, sheared, wethers, extra, $14.50@15; good to choice, $13@14; medium, $10@11; common, $6@8; lambs, sheared, heavy, fat, $12@12.50; choice, $17.50@18; medium, $15@16; inferior, $10@13.

Hogs.—The market ruled a shade easier under a slow demand and lower outside advices. Stock in some cases was considerably delayed in transit. Quotations for best western, $19.

City Dressed Stock.—Steers, heifers and cows were pretty well cleaned up at full figures. Calves ruled a shade easier under a light demand. Other descriptions were in moderate supply and steady, with demand fair.

Steers, 21@26c; heifers, 21@23c; cows, 16@22c; calves, 24@25c; southern and barnyards, 16@20c; country dressed, 20@22c; sheep, choice, 28@29c; lambs, 34@35c; hogs, 25½c.

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LIVE STOCK MARKETS

Lancaster, Pa., May 20.—Cattle.—Receipts, 720 head, against 1055 head last Monday; market active, prices steady, stockyards clear at close of trading; good to prime fat steers, $14.25@15.75; medium to good fat steers, $13.50@14.50; common to medium fat steers, $11.50@13; good to prime fat bulls, $11.50@13; medium to good fat bulls, $11@12.50; common to medium, $10@11; good to prime fat cows, $9@10.50; medium to good fat cows, $8.50@9; common to medium fat cows, $7@8; medium to good bologna cows, $5.50@6.50; common bologna, $5@5.75; calves, best grade, 14@15c; plain lightweights, 10@12½c.

Hogs.—Receipts, 162 head; market active, prices steady; best grades, $18.75@19.25; roughs, $16.50@17.

New York, May 20.—Beeves.—Receipts, 2920; steady; steers, $13.50@17.75; bulls, $8.50@13.75; cows, $5@11.

Calves.—Receipts, 6620; firm; veals, $12.50@16; culls, $11@12; skim-milk calves, $10.

Sheep and Lambs.—Receipts, 2380; no sales.

Hogs.—Receipts, 5500; steady; heavy to light weights, $18@18.50; roughs, $16.50.

East Buffalo, N. Y., May 20.—Cattle.—Receipts, 2500; strong; prime steers, $17@17.75; shipping steers, $16.50@16.75; butchers, $12.25@16.75; yearlings, $13.50@16.75; heifers, $10@14.25; cows, $6.50@13; bulls, $7.50@13; stockers and feeders, $7.50@11; fresh cows and springers, $65@145.

Calves.—Receipts, 2600; strong at $7@15.25.

Hogs.—Receipts, 7200; active and strong; heavy, $18@18.50; mixed, $18.25@18.40; yorkers, $18.35@18.50; light yorkers and pigs, $18.50@18.75; roughs, $16@16.25; tags, $12@13.

Sheep and Lambs.—Receipts, 12,000; lambs slow; others steady; lambs, $11@17.40; yearlings, $13@15.50; wethers, $14@14.50; ewes, $6@13.50; mixed sheep, $13.50@14.

Pittsburgh, Pa., May 20.—Cattle higher; supply, 45 cars; prime, $16.50@17.

Sheep.—Lower; supply, 20 double decks; prime wethers, $13.50@14.25; culls and common, $6@9; lambs, $10@17.25.

Hogs.—Higher; receipts, 30 double decks; prime and yorkers, $18.40@18.50; pigs, $18.25@18.40; roughs, $15@15.75.

Baltimore, Md., May 20.—Beef Cattle.—1,000 to 1,200 lbs., 11@12c; steers under 1,000 lbs., 9@10c; oxen, 7@9c; bulls, 8@9c; large young cows, 7@8c; cows, poor to medium, 4@5c; fresh cows with calf, $40@75; poor, thin, meadow stock, 4@5c.

Calves.—Choice, heavyweight veals, 16½c; do., choice, heavy, 15½@16c; good veals, 15½@16c; heavy, smooth, $18@20; heavy or rough calves, $14@16; small, thin calves, $8@18.

Lambs and Sheep.—Choice, fat sheep, 10@12c; fair sheep, 6@8c; inferior, rough, $2.50@4; old bucks, 8@10c; spring lambs, fat, 20c; do., poor to fair, 18@19c.

Live Pigs.—As to size and condition, each, $4@6; shoats, as to size, each, $6@8.

Chicago, Ill., May 20.—Hogs.—Receipts, 36,000; unsettled; bulk, $17.30@17.70; light, $17.30@17.85; mixed, $17.05@17.80; heavy, $16.35@17.65; rough, $16.35@16.75; pigs, $14.50@17.60.

Cattle.—Receipts, 16,000; weak; native steers, $10.75@17.75; stockers and feeders, $9.40@13.25; cows and heifers, $7.40@14.60; calves, $8@14.

Sheep.—Receipts, 16,000; steady; sheep, $12@16.10; lambs, $14.75@20.50.

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NEW YORK HAY AND GRAIN

New York City, May 20, 1918.

Feed.—No general price changes were noted on Saturday. The undertone, with one or two exceptions, ruled strong, but as far as business was concerned the trade remained dull. Linseed meal is unsettled and offerings are heard as low as $50 per ton, and barley feed is about in the same position, sales being made at from $39 to $42 per ton. Both these commodities are well below the recent high. Small offerings of rye middlings are being made for prompt Western shipment at $53 per ton, and corn feed meal at $52 per ton. Mills still have fair contract orders on hand and they are trying to arrange for delivery to Eastern markets. Quotations (prompt Western shipment): Rye middlings, $53; oat feed, $2[illegible] per ton; barley feed, $39@42; linseed meal, per ton, $50; corn feed meal, $52 per ton.

Hay and Straw.—There are still liberal offerings of ordinary hay at practically all harbor points. High grades are steady, at the top quotations extreme for prompt sale at 33rd street.

Hay.—No. 1, prime, $28@30; No. 2, $25@27; fancy clover mixed, $25@27.

Straw.—No. 1 rye, $18.

Corn.—No. 3, $1.50.

Oats.—No. 2, white, 84@85c.

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PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., May 20, 1918.

Baled Hay and Straw.—Receipts, 12 tons of hay. Hay of fine quality was well cleaned up and firm, but there was some damaged stock around, which was dull and weak. Straw was quiet and unchanged.

Timothy hay, according to location—No. 1 large bales, $30; No. 1, small bales, $30; No. 2, $27@28; No. 3, $22@24; sample, $15@18; no grade, $10@15; clover mixed hay, light mixed, $27@28; No. 1 do., $25.50@26.50; No. 2, do. $24@25.

Straw. — No. 1 straight rye, $21@21.[illegible] No. 2 do., $21.50; No. 1 tangled rye, $19.50; No. 2 do., $18.50; No. 1, wheat straw, $18; No. 2 do., $18; No. 1 oat straw, $19@19.50; No. 2 do., $17.

Corn.—Car lots, No. 2 yellow, $1.73@1.75.

Oats.—No. 2 white, 84½@85c.

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PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., May 20, 1918.

Butter.—As usual on Saturday, there was very little wholesale trading, and prices showed no important change. Quotations: Western, fresh, solid-packed creamery, extra, 46c; high-scoring goods, 47@48c; extra firsts, 44½@45c; firsts, 43@44c; seconds, 41@42c; sweet creamery extra, 47c; under grades, 42@46c; nearby prints, extra, 50c; jobbing sales of fancy brands, 51@53c; fair to good, 44@48c; garlicky, 39@41c.

Receipts, as compiled by the Bureau of Markets, 1376 tubs of butter and 8997 cases of eggs.

Cheese.—Sold slowly at former rates.

New York, whole milk, fancy, 25@25½c; specials higher.

Winterthur Farms
Offer For Sale Sons of
UNEEDA KING ALCARTRA No.182646
A 33-Pound Bull.

He traces twice to King Segis through his two best sons; Johanna Mc Kinley Segis with a 40-lb. dam and King Segis Pontiac with a 37.20-lb. dam.

No. 15—Born December 22d, 1917. He is about even in color, long, straight back, deep bodied and a show bull in every respect. His ten nearest dams average 28.4 lbs. butter in seven days. Dam: Queen Nazli De Kol Segis 226341 (A. R. O. at 3y) 20.02 lbs. butter from 553.90 lbs. milk. She is a granddaughter of De Kol Beets Segis.

No. 11—Born December 2d, 1917. He is an excellent individual and about evenly marked. His dam is a splendid individual, a daughter of "Johanna Mc Kinley Segis." This bull traces three times to King Segis and twice to Johanna De Kol Van Beers, the 40-lb. $7,000 cow.

Full particulars including pedigree and photographs will be sent on request to:

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Seven-eighths Holstein Heifer Calves $15 to $20 each, express paid in lots of five. Two Heifer Calves from registered sire (dam's record 27 lbs. butter 7 days), and Registered Bull Calf for $60 f. o. b. Cortland. Nice carload of two-year-old Heifers, bred to registered sire. I sell satisfaction and everything in Holsteins.
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Naturally Polled Holstein-Friesian
bull calves, sired by a son of the World's Record senior 4 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp.
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Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees.
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Reg. & Grade Holsteins 30 head reg. heifers, $250 each; cash or part credit. 7-8 Holstein Calves 5 days old, $20 & $25 each. From reg. sires. Harry Vail, Warwick, N. Y.

Reg. Shorthorn Cattle Young bulls and heifers.
R. H. LYLE, CADIZ, OHIO

Ayrshires young A.R. cows, bull and heifer calves. Best blood lines, reasonable prices. Inspection invited. Robert Templeton & Son, Ulster, Pa.

Reg. Jerseys From some of the most noted blood in the world.
Fred G. W. RUNK, Woodlawn Farm, Allentown, Pa.

REG. Ayrshires. 5 cows, 5 yearling heifers, 5 heifer calves. Good breeding. Inquire
LENT BROS. WYSOX, PA.

Holstein Bulls from A. R. O. dams. Write your wants: they are priced to sell. M. E. Baschoar, Crystal Spring Stock Farm, Littlestown, Pa.

Milking Shorthorns Bull calves bred from the best milking strains for sale; also few heifers. C. M. Kennedy & Sons, Ulster, Pa.

Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd.
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For Sale Fine Reg. Guernsey heifers, Imp. & American bred. Some to freshen Apr. Some fine Imp. granddaughters of Gov. Chene; bull calves. J. S. Yoder, Wooster, O.

HOLSTEIN BULL, age seven months, average record of grandams 31 lbs. Evenly marked. Well grown. Price $75. Oaks Dairy Farm, Wyalusing, Pa.

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are the largest handlers of commission hay in greater New York; if you have hay to dispose of communicate with them.
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Turkey Eggs strictly fresh from large selected M. Bronze, B. Red, W. Holland and Narragansett, 9 for $3.25; 15 for $5.25 by mail or Express prepaid. Safe arrival guaranteed. Orders filled promptly. N. M. Caldwell, Jacobsburg, Ohio.

Indian Runner Ducks Fawn and White. Eggs 12 for $1.00. Breeders $1.50 each.
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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Stunted Shoats.—Please tell me what I should do for my shoats. They look to be in good growing condition and they eat well, but they do not grow. I have fed them corn, middlings, bran and alfalfa meal. They ought to weigh 125 pounds but they do not weigh more than about 75 pounds. They have not shed their hair, but they seem fat enough. What is the cause and what should be done to make them grow? A. T. W., Hanover, Pa.—Give each one of your stunted shoats twenty drops Fowler's Solution at dose in either feed or drinking water, three times a day, and it will assist in starting them to thrive. Perhaps a change of feed will do them some good.

Infectious Abortion.—I notice in the veterinary columns of your paper every few weeks that some one asks what to do with abortion in cattle. The answer is that there seems to be no positive cure for it only to isolate the aborting cows from the rest of the herd. Now I had this abortion in my cows a few years ago and was at a loss to know what to do for them. Someone told me to give them pure bone dust. Now this seemed a very simple thing to do, so simple that I had no faith in it. But I thought there would be no harm in trying it as it was inexpensive and I had already lost three calves. I commenced feeding the bone dust once a day—a small handful at a time—and I did not lose another calf after feeding it. I know two other farmers who have used it with like success. One of them was the local milk man. At that time he told me his cows were losing their calves, and he was going to beef them. I told him about feeding the bone dust, but he neglected it for a time, thinking, I suppose, that it would do no good. I at length persuaded him to try it, as it could do no harm even if it did no good. And he told me afterwards that he hadn't lost a calf after feeding it. Now I am writing this, trusting it may be of benefit to some other farmer or dairyman, as it was to me. I hope your veterinarian will at least give it a trial.—Louis C. Bird, Hunterdon Co., N. J.

Contagious abortion in cattle is considered by veterinarians to be an incurable ailment, especially so after the cow or heifer becomes pregnant and neck of uterus closes. The disease can be controlled, but when once it is thoroly established in a dairy I have always found it a very tedious process to stamp it out, no matter what remedy I used. Feeding bone dust in small hand full doses can't in any way harm the cow, therefore I ask our readers to give this new remedy a fair trial. The writer is quite certain it will fall far short of destroying the germ which causes abortion in cows. The germ is highly resistant and may remain virulent in the uterus of infected cows for several months after they have aborted. My observations have convinced me that once the disease has gained a foothold in a cow herd, treatment is rarely successful, perhaps on account of the germs of disease being within the uterus of pregnant cow and of course cannot be reached with disinfectants. The fundamental principles underlying the control of infectious abortion must be the separation of the sick from healthy, thoro disinfection of the premises, proper care of the sick and burning the afterbirth and dead calf. If every dairyman would promptly treat aborters at time of miscarriage and keep up this treatment until the cow or heifer recovered, this serious ailment could soon be brought under better control. I would like to have report made to Pennsylvania Farmer from readers giving above remedy a fair trial.

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has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
Write AERMOTOR CO., 2500 Twelfth St., Chicago

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STANDARD REMEDY
HEAVE, COUGH, DISTEMPER AND INDIGESTION COMPOUND
Cures Heaves by correcting the cause—Indigestion. Prevents Colic, Staggers, etc. Best Conditioner and Worm Expeller. 26 years sale. Three large cans guaranteed to cure Heaves or money refunded. The 1st or 2nd can often cures. $.60 and $1.10 per can at dealers' or prepaid by parcel post. Booklet free.
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Make Your Bike a Motorcycle
The low cost Shaw Attachment *fits any bicycle.* Easily put on. No special tools or knowledge necessary. Write at once for Free Book, also about Shaw Motorbicycle, a complete power bike at big saving.
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Greystone Berkshires
Spring pigs either sex, pairs and trios not akin from large mature sows of best breeding. Twenty-five sows in our herd. Write for circular giving further description and prices. It's free.
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O. I. C. SWINE Big Type. Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants.
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Reg. P. Chinas, Berkshires, C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry.
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Reg. Berkshires by Beauty's Masterpiece 3rd. Spring pigs, either sex, $10 each. R. S. GOOD, PEACH BOTTOM, PA.

O. I. C's. and Chester White boar pigs $20 each, am reserving all sow pigs for my Oct. sale. Campion blood.
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TIMELY BULLETINS

Destroying Grasshoppers.—Circular by the U. S. Department of Agriculture, Bureau of Entomology, discusses fighting grasshoppers with poisoned bait. Poisoned bait bran, the Criddle mixture and mechanical means of destroying grasshoppers are described. The circular is free upon request to the above Department, Washington, D. C.

Fineness of Limestone.—Bulletin 152, of the Pennsylvania State College, reports on an investigation of the value of limestone of different degrees of fineness. The bulletin points out that an application of limestone in which the entire product consists of very fine material is less desirable than one consisting of varied degrees of fineness. The increased cost of very fine limestone together with the rapidity with which it disappears from the soil as compared with coarser materials leads to the conclusion that an application of material all of which will pass a 10-mesh screen and includes all of the fine material incident to such grinding is sufficiently fine for soil improvement if applied somewhat in excess of the immediate needs of the soil. The bulletin is free upon request to the above institution, State College, Pa.

Fertilizer Reports.—Bulletin No. 151, of the Pennsylvania State College, reports on fertilizer experiments on DeKalb soils. This is a preleminary report on the work done at the Snowshoe test grounds. The report is available by asking for this bulletin, State College, Pa.

Goat Milk.—Bulletin 429, of the New York Experiment Station, reports on the value of goat milk for babies. The bulletin is mailed free upon request addressed to the above station, Geneva, N. Y.

Drying Fruits and Vegetables in the Home.—Farmers' Bulletin 841, of the U. S. Department of Agriculture, discusses drying of fruits and vegetables in the home. The discussion covers reasons for drying, principles and methods of drying, preciples and methods of drying, preparation of food for the drier, apparatus for drying, directions for dryrections for packing and storing, recipes for cooking dried fruits and vegetables. The bulletin is free for the asking addressed to the above Department, Washington, D. C.

Canning for Pleasure and Profit.—Circular 68, of the University of Wisconsin, discusses canning for pleasure and profit. The circular is fully illustrated and covers reasons why foods are canned, home-made canners, jars best for home use, points to observe in canning, how to can vegetables, canning terms explained, cold-packing tomatoes in glass, ditto with asparagus, beets, cauliflower, corn, peas, string beans, carrots, etc. The circular is mailed from the above University, Madison, Wis.

Canning by Cold-Pack Method.—Farmers' Bulletin 839, of the U. S. Department of Agriculture, discusses home canning by the one-period cold-pack method. The bulletin is fully illustrated and includes notes on equipment required, number of cans or jars per bushel, legal restrictions on the sale of canned goods, altitude changes and home canning, brines, seasoning, syrups, canning fruit without sugar, canning directions for vegetables, fruits, fruit juices, soups, meats; time tables for canning, special canning precautions and suggestions. The bulletin is free upon request addressed to the above Department, Washington, D. C.

Hay Making.—Farmers' Bulletin 943 points out ways in which the most successful hay makers of the country save time and labor in this important work. The discussion covers need of reducing hay making costs, choice of methods of curing, how hay cures, haying operations, systems of making hay, size and management of crews, planning haying operations, some approved methods. The bulletin is free upon request addressed to the U. S. Department of Agriculture, Washington, D. C.

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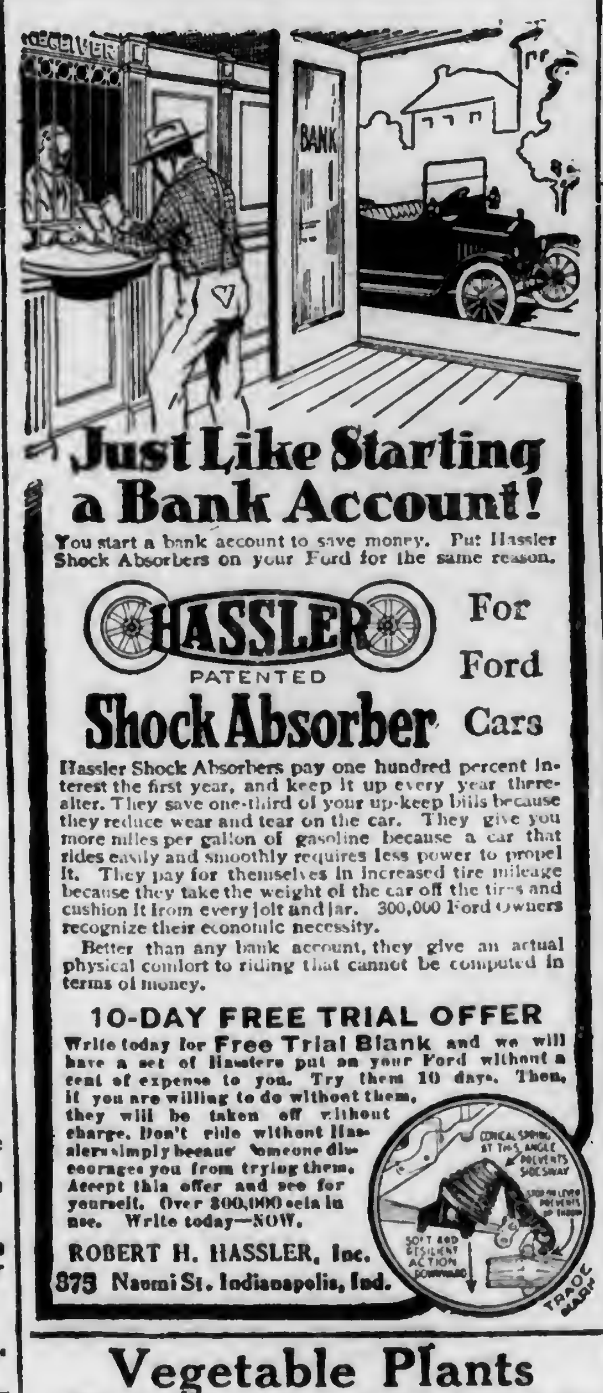
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Library Agrl College Experiment Station

Timely Pointers on Making Good Hay

Successful Hay Harvesting Requires Good Judgment and Hard Work

Probably no other crop on the general farm is the cause of so much worry and uncertainty as the hay crop. So much depends upon good weather and efficient help, and since the period for making good hay is so short, the farmer is excusable if he feels exultant after he has drawn the last load of a successful harvest into the barn. Aside from the weather, however, good hay-making depends largely upon good methods efficiently carried out. There are certain principles which must be observed, and the failure to understand or apply them is one reason why so large a proportion of the hay made annually is of low grade. But even at the comparatively low price for low grade hay, the hay crop in the United States is exceeded in value only by the corn crop. This has been true almost every year in the past.

Since each kind of hay plant needs special consideration, they will be treated in the order of their harvest.

Alfalfa

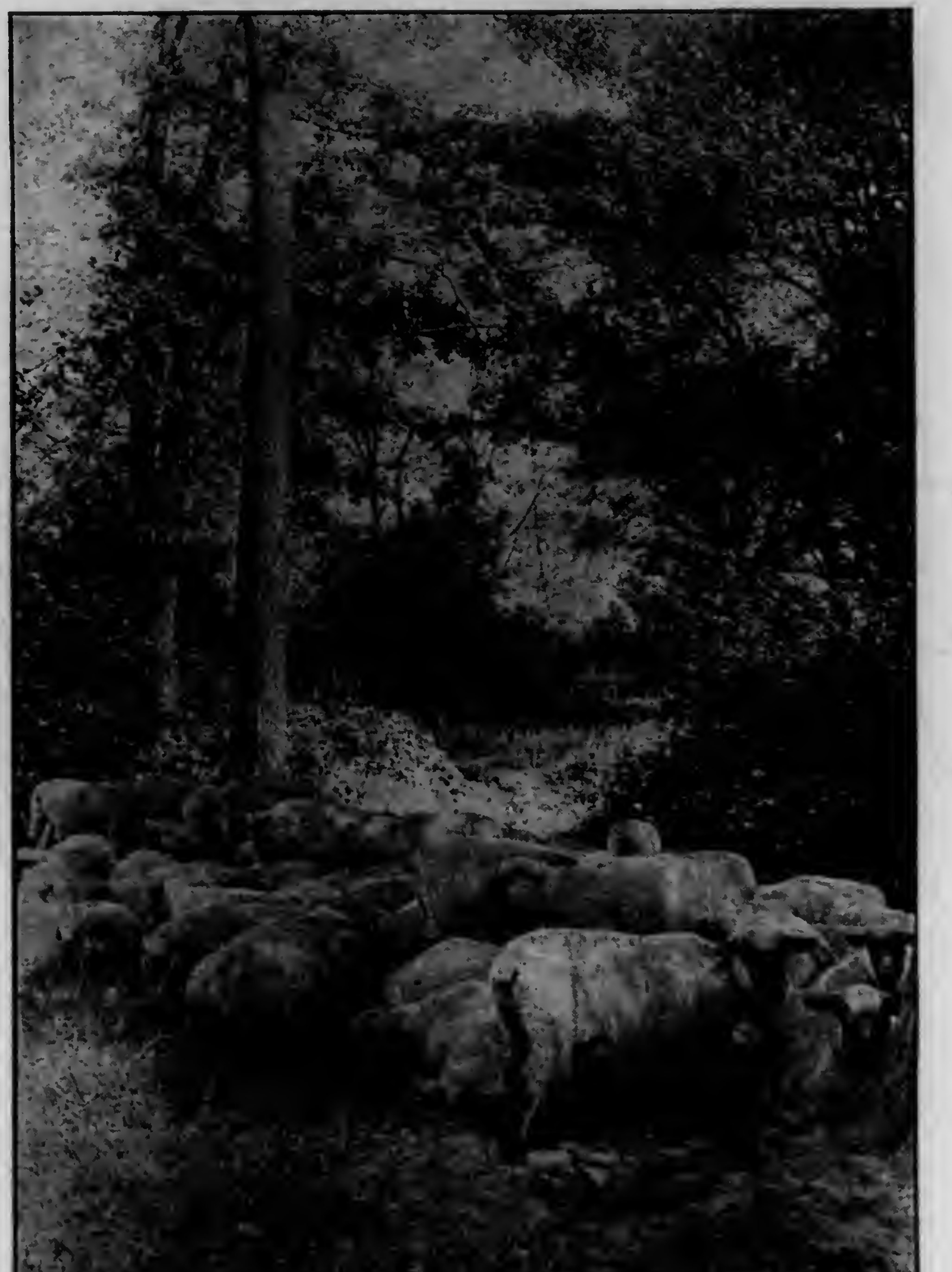
The after-success of an alfalfa field depends a great deal upon the stage at which the first crop is cut. If it is cut too soon, succeeding crops are lessened; or, if it is left too late the crown is weakened and the growth is scanty. While the blossoms are an indication, the real test is the new shoots at the bottom of the stalk. When these are about an inch or two high, or, at a height at which they will not be clipped off by the mower, is the right time to cut—regardless of the stage of bloom.

The following directions are found in a recent department bulletin and they fit the conditions here so well they are given herewith:

"Cut when about one-fourth of the bloom is out. The time of cutting is not so important as the method of curing. The ideal time for making hay is when the weather is dry and when a brisk wind is blowing. The hay is cut with 5-foot mowers and raked with 10-foot rakes. The hay cocks most satisfactorily if the rake is made to take exactly two swaths of the mower. The rakes are started as soon as the hay is slightly wilted. This is very important, for there will be great loss of leaves and decrease in the weight of the hay if it lies in the hot sun for two or more hours after it is wilted sufficiently to rake. The rakes are driven around the field in the same direction as the mowers and the hay raked into medium-sized windrows.

"The cocking is all done by hand. Each cock contains the hay of seven swaths, the aim being to cure the hay in compact large cocks. The hay of each swath is picked up separately and placed on the cock so that it flattens out into a layer. In placing the hay upon the cock it is never turned upside down, for the reason that this causes the leaves to fall out and tangles the hay up so that it will not pack together so closely. Large, well-proportioned cocks are built. The sides are raked down and the loose hay cleaned up well around the base. In finishing the cock, its top is pulled over toward the wind and pressed down so that it will not blow over. It is very essential that the hay be kept cocked up close to the rakes. The mowers and rakes are stopped and the men put to cocking if the mowers and rakes get more than three or four hours ahead of the cockers.

"The hay is allowed to remain in the cock for at least four or five days. Small cocks are easily wet thru to the ground during rains, while compact cocks that are raked down well turn the water and are wet in but a few inches. When hay is put up in this way, the bottoms of the cocks are sometimes damp, making it necessary to turn the mower so that the sun can shine on the hay that was in the bottom of the cocks for two or three hours beforo being stacked or put in the barn."


The Antithesis of "No Man's Land"

Clover Hay

The time to cut clover is when about 25 percent of the blossoms have turned brown, but before seed has formed. If clover is left until the seed has formed, little second-crop will appear, since Nature's object is to produce seed and if she succeeds at the first trial she considers the job done. But if seed is not permitted to form she makes another effort and produces a second crop and even a third crop if the season is long enough.

The method of making first class clover hay is about the same as that for alfalfa. All the clovers should be cured in cocks, since shade is necessary to retain the bright color. This method gives it a chance to do its primary sweating in small piles, hence the overheating and consequent blackening is avoided. The writer has seen clover hay thrown from the mow in winter with the natural color of leaf and blossom and the harvest time aroma. This kind of hay is only possible when it was cut at the right time, raked up as soon as well wilted, cured in cocks for 36 or 48 hours and hauled into the barn before it was rattling dry. Remember that dews, rain and long exposure to sunshino make black hay.

Timothy

While timothy is not so likely to be injured by bad weather and poor methods in making as are the clovers, a great deal of it is poor because it is too ripe when cut. Like clover, a good aftermath depends upon cutting it before the seed forms. Deterioration in feeding value is even greater because, as the stalk ripens, woody fiber forms very rapidly and feeding value decreases accordingly. It has been found that the protein content at the different stages is as follows: Coming into bloom, 261 pounds per acre; in full bloom, 293 pounds; when seed is ripe, 219 pounds. From this it will be seen that timothy contains its greatest feeding value when in full bloom. Altho the weight is a little less, the feeding value is greater.

The grasses—timothy, redtop, etc.—are more easily cured than the clovers and other legumes because their stems are hollow and the leaves are not so sappy. While clovers must be raked while quite green in order to save the leaves, timothy may be left in the swath until quite dry, tedding in the meantime. Except for protection against rain in a threatening time it is doubtful whether it pays to put timothy in cocks. While it probably improves the quality of the hay to cure it in this way, the improvement is not so great as in the case of legumes.

Timothy should be "rattling dry" when put into the barn in order to keep well, while clover—if well cured—may seem quite tough. Ripe timothy may be mown in the morning and hauled in in the afternoon in bright, good drying weather.

What is "Curing"?

Curing is nothing more nor less than removing the moisture from the plant, and this is done by evaporation thru the leaves; even the moisture in the stems is removed chiefly thru the leaves. It is for this reason that a hot sun and high wind fail to make the best hay, because the leaves dry out too rapidly and cannot assist in drying the stem. This is why hay made in the shade is superior to sun-dried hay. It also explains why cocking is necessary to make the best legume hay, since the heat generated in the cock drives out the moisture from all parts of the plant simultaneously.

Effects of Rain

Every farmer knows that hay exposed to alternate rain and sunshine loses quality very rapidly. Much of its nutritive elements is washed out, the fine aroma is lost and its palatability is reduced. A rain or heavy dew does but little injury before the grass has dried any.

There is much more danger of spontaneous combustion if hay is put into the barn or stack when wet with dew or rain than damp from its own sap. The damage from heating and consequent mould is much greater, even if fire does not result. It is bad practice to rake and cock hay wet by rain. It is better to let it dry out in the swath.

Tedding

The best way to cure any kind of hay is to use the tedder before the top leaves dry out; otherwise, curing is very much retarded. By keeping it kicked up, the hay dries out evenly. Tedding should be commenced before any leaves become dry and brittle, else they will be lost. Many farmers find it pays to ted twice the same day, then rake and haul in, or put into cocks.

A Good Method

Providing the weather is right and the equipment is ample, it is a good practice to mow as much in a forenoon as can be put away in an afternoon. This general rule will apply to timothy as well as to clover and alfalfa which is cocked. Another method is to mow as much in the afternoon as can be cured and hauled the next day. Unless the day is very dry and hot, wilting will not be so great as to permit injury from dew at night. If exceedingly bright and hot, begin mowing the middle of the afternoon.

Baling in the Field

In some places baling from the field is practiced. This requires plenty of help and the best of weather. Under ordinary eastern conditions it is not to be recommended, altho barn space is conserved for other crops. It must be remembered that the hay should be thoroly cured and very dry.

Stacking

Where barnroom is more valuable than the amount of hay spoiled by stacking it is economy to put it into stacks. They should be large, straight and compactly built. It requires considerable skill to build a stack that will turn water. It should be built upon a foundation made of rails or poles. The center should be kept the highest and the whole well packed as built.

Using an Automatic Stacker

The Durability of Fence Posts

By JOHN F. MARSH, Jefferson Co., Ohio

The renewal of farm fences is not only a source of much worry and labor for the farmer, it is also one of the important items of expense in maintaining the farm in good working condition. In building farm fences, the most durable material will prove the cheapest; therefore, the selection of posts and wire is worthy of close attention.

Fences made of rails, stumps, brush and stone have gone the way of other cumbersome, laborious works of pioneer days, and the modern wire fence carefully erected on a strong line of posts is truly a thing of beauty, but, alas, is not a joy forever, or even for a period of many years. Posts will decay and wire will rust, and we sometimes wish for the sturdy fences built of rails, stumps or stones.

The species of timber most often used for fence posts in the northern and central states, named in order of their durability, are Osage orange, black locust, red cedar, mulberry, white cedar, catalpa, chestnut and oak. In the absence of these we sometimes find other and less durable species in use, among which are ash, honey locust, black walnut, sassafras, willow, white walnut and elm. These take rank far below the first eight species in durability when in contact with the soil. Even among the first six species, there is an important variation, and the difference in years of service between Osage orange and catalpa is probably as great as between catalpa and willow.

The conditions which affect the life of a fence post are many, and sometimes not easily understood, therefore we often arrive at wrong conclusions with regard to the different species.

The wood of trees which have made a slow annual growth is denser, harder and heavier than the wood of other trees of the same species which have made a more rapid growth, and is therefore more open and porous in structure. Moreover, we invariably find that the closer grained, slower grown wood lasts longer in the ground than the wood of more rapid growth. This is one reason why posts which have been cut from different trees of the same species differ greatly in durability. We may express this fact as Rule 1 in the selection of post timber—always select trees, of any species, which have made the slowest annual growth. This comparatively slow growth may be due to an impoverished soil, to overcrowding, or to the dominance of older and taller trees.

Another factor affecting the life of a post is the original position of the post in the tree from which it was cut. Hence we formulate Rule 2—the sapwood adjoining the bark of the tree decays first; the heartwood decays next in point of time, and the fresh, sound, intermediate wood which is nearest the sapwood remains as the most durable part of the tree. Two reasons are apparent for this condition: First, the heartwood is usually formed by a larger annual growth, and is, therefore, softer and more porous; second, branches broken off while the tree was small have admitted fungi, and decay has begun at the heart, altho the wound may be completely covered with sound wood. The hollow trees of the forest, veterans which have decayed from the heart outward, forcibly illustrate this point. Sound limbs from three to six inches in diameter will usually outlast larger posts which have been split from the heart of the tree. Logs which are not too large should be split in such a manner that a portion of each post will consist of the durable layer of wood which adjoins the sapwood, insuring the longest life to the post; in other words, each post should include a section from the heart to the bark.

A few people believe that a post should be set with the top down, placing the end which grew nearest the top of the tree in the ground. This idea probably originated with someone who obtained good results with posts set top end down, and forthwith published the theory as an important discovery. Unbiased reasoning dictates that, other conditions being equal, that end of the post should be set in the ground which contains the largest amount of new growth, regardless of its original position in the tree.

With most posts, the point where decay starts is just below the surface of the ground, and it is at this point that the post finally decays completely and breaks off. Posts which are continually surrounded by water resist decay for an indefinite period; it is the alternate soaking and drying to which posts are subject that favors decay, aided probably by the alternate freezing and thawing of the wood in winter and spring.

Turning Alfalfa Sod on Walker-Gordon Farms, N. J.

There seems to be but little difference in the durability of wood set green or seasoned, as determined by the examination of a large number of posts in each class, after a long period of use. While at first thought, reason might seem to favor the seasoned post, on second thought there is really nothing to support the theory. A seasoned post is no more impervious to water than a green post; and in a few months after setting, one probably contains as much moisture below the surface of the ground as the other; we may even conclude that the cracks

which develop in air-seasoned timber may hasten the process of decay to some extent. Therefore the probability is that there is no advantage in allowing posts to season before setting.

The following facts regarding the durability of fence posts were obtained after an examination of the posts in 292 fences, by the Ohio Agricultural Experiment Station. These posts had been in use for different periods of time, in many types of soil. They found the longevity of Osage orange to be truly remarkable, medium sized posts which had seen 30, 40 and even 50 years' service being practically all sound. No other wood approached it in durability, toughness or elasticity. However, this species is not desirable for planting, as it is slow and crooked in growth. Old, over-grown hedge fences furnish most of the Osage orange posts in use at the present time.

Thru most of the northern and central states east of the Mississippi River there are more black locust posts in use than any other species. All things considered, locust is one of the most satisfactory species for post, as it is a strong grower, hardy, durable and tough. There is practically no sapwood, hence the limbs can be used, and mere stakes two inches in diameter will last several years in the ground.

Red cedar compares favorably with black locust in durability when cut from trees which have grown in a dense stand. Cedar which has made a rapid growth in the open is soft and decays rapidly. This species is not as common as locust in most localities, hence it is not as popular as a post timber.

Mulberry ranks next to red cedar in point of durability. However, the tree is a spreading grower, and the branches are often crooked and hence undesirable for posts.

Closely following mulberry are white cedar and hardy catalpa. The brilliant reputation of catalpa as a post timber was not sustained by the posts examined by the Ohio Station. Hardy catalpa is easily grown, makes a rapid growth, grows straight, splits readily, and does not sprout badly after cutting. In point of durability, catalpa is very inferior to locust. However, like all other post timbers, its denseness and durability are closely related to its rapidity of growth. Its good qualities have been magnified and exaggerated by a host of nurserymen and dealers, whose aim was to sell trees and seed of the species. While catalpa is a desirable species to plant along fence rows and in other places where the sprouting of locust would be a serious detriment, we should not class it with locust and red cedar in durability.

Chestnut, white oak and some other species of oak are usually slightly less durable than catalpa in contact with the soil. These, and other less durable species, should only be used when other species of superior quality and longer life cannot be obtained.

On all farms where there is no post timber growing, we would advise the planting of a grove large enough to supply the future needs of the farm. If the planting is made on rough land, black locust is a desirable tree to plant; while if the planting must be made on or near cultivated land, red cedar, mulberry or catalpa may be found more desirable. Trees of any species except Osage orange grow rapidly to a size suitable for post timber, and, when a number of trees are removed, others should be planted in their place, in order to maintain a constant supply of posts.

Hauling manure directly from the stable and spreading it on the field has been found to give the least loss of manurial substances. This practice has the advantage also that the manure is handled only once. When this method can not be used, especially convenient constructed places to store manure should be provided.

Improving Waste Land

The illustration on this page will give an idea of the condition of tens of thousands of acres in the Alleghany Mountain regions of Pennsylvania. It is "cut-over" land; that is, the original timber has been cut and the land left idle, except to grow up with brush and bracken. It is generally considered poor because the original timber was often small and the results of ordinary farming, even when the land is new, are decidedly unprofitable. Many farms have been abandoned or used simply as homes while the owners make the greater part of their living at mining or other work.

However unpromising the situation may seem at first sight, the fact that many farmers have succeeded in making this type of land (which is in the DeKalb series) more or less profitable is encouraging and should point the way to vastly increasing the productive acres of the Keystone state. The practices of the successful farmers have proved by experiments now in process by the State Experiment Station to be well founded. This institution began a series of experiments in the spring of 1915 by using lime, acid phosphate, potash and nitrogen, singly and in combination, and the results have been uniformly most encouraging. While an unfertilized plot produced 680 pounds of hay per acre, the addition of lime, acid phosphate and potash produced 2,080 pounds; without potash, 1,860 pounds.

The character of the natural vegetation growing on this land shows it to be extremely deficient in nitrogen and to overcome this, legumes are necessary. To grow these, lime and phosphoric acid are necessary. With this simple cue it is possible to convert this cheap, neglected land into productive stock-raising possibilities. This may be the solution of eastern sheep and beef production.

Typical Cut-Over Land on DeKolb Soil in the Snowshoe District

Queries and Comments

No Use For a Spike-Tooth

"I saw in the last two or three issues of your valuable paper you speak very highly of the spike-tooth harrow. Why? It does not amount to a row of pins. I have just finished a four-acre lot which was in rye. It plowed very hard and turned up in lumps as large as a basket and tough as putty. I used a spring-tooth harrow and a very heavy drag. Even that did not put the ground in the condition I wished. I got my neighbor to bring his tractor and 28-disk harrow and that put it in good shape and I expect to harvest 800 bushels of ears. As I wrote you before, I always plant corn four inches deep and use a spring-tooth harrow on it before the corn is up, setting the teeth to run about two inches deep." —G. Frank Morgan, Maryland.

We would not expect our friend to be able to make satisfactory use of a light spike-tooth harrow on the kind of soil he describes. On ordinary friable soil it does splendid work. The tool should be adapted to the conditions and work.

Replanting Corn

"Does it pay to replant corn when a part of it fails to come up, or when crows pull it out?"—E. T. B., Sussex Co., N. J.

There may be many who will have to consider this question this year since no doubt there was much poor seed planted in spite of the great emphasis that was placed on testing seed corn. If care is taken to observe the prospects for a stand as soon as it has had time to get thru the ground, and it is evident that some will not grow, it is wise to replant the missing hills. If this is done promptly, no great difference in development will result. But if it is left two or three weeks as some do, the replanting is too far behind to mature with the first planting. To meet the latter objection, some farmers use an earlier corn for replanting. Of course, the result will be a mixture of the two varieties but this is not a serious objection if pure bred corn is not being raised. If the failure is as much as 50 percent, it will no doubt be more profitable to harrow it up and replant the entire field.

Worms Disastrous

"I find that wire-worms and cut-worms are very plentiful this year and I am afraid they will seriously injure the corn crop. What remedy would you suggest?"—R. M. W., Chester Co., Pa.

There is nothing practicable to be done now to combat the wire-worms in planted fields. They are the larvae of the "click beetle" and infest grass lands very generally. When the sod is broken up, the feed supply is so reduced that they attack the planted crop, often with serious results. Anything applied to the soil which would be strong enough to kill the worms would also injure the crop. Short rotations in which a clover or other legume is used, fall plowing and thoro cultivation are the best means to use to keep them in check.

Cutworms may be combatted quite successfully by using a poisoned bait made by mixing together 25 pounds of bran, one pound Paris Green, two quarts of molasses and enough water to make a crumbly mass. This is enough for an acre, and should be scattered over the soil in the evening.

Bats

"How can I rid my farm house of bats? I have a large frame house and the bats harbor in the attic in the summer time, but I am unable to find them in the winter season. I have counted as many as 300 leave the house on a summer evening. Where are they in winter? How can I get rid of them?"—E. P. R., Virginia.

There are about 130 known species of bats, but those which inhabit buildings are usually all of one kind. In sections where their food is not to be had in cold seasons they hibernate, which is the reason you cannot find them in winter. The house bats subsist mainly upon flies and other insects which they catch at night. In winter they hide away in secluded places in the frame of the house, in the barn, hollow trees, etc. Probably the most successful way of combatting them is to exclude them from the house until they establish new headquarters. Doors and windows should be screened, every crevice about the eaves stopped and no openings left any place by which they may gain entrance. Do this work at night after they have flown out. Fumigation during the day might kill them if done efficiently, but the decaying bodies would make the house uninhabitable afterwards where there are as many as you mention.

The plan of top dressing wheat fields with a light covering of barnyard manure is being very successfully practiced by many farmers in wheat growing areas.

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Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

Requisitioning Wheat

The Federal Food Administration, under authority of the Food Control Act, has found it necessary in a few cases to requisition wheat in farmers' hands. This has been done only where amounts withheld were of considerable size and where there was evidenced a spirit of defiance or disloyalty. Food Administration officials are profuse in their commendation of the spirit of farmers generally in responding to the demands for marketing all wheat on hand, but they have also shown a determination to act firmly and promptly with the exceptional man who withholds wheat that is now so badly needed. These officials have full authority to seize wheat supplies where it seems necessary to do so, and the farmer public will support them in the exercise of their full duty. The supply of wheat to our soldiers and their allies cannot be further reduced without endangering their fighting strength. This wheat must come from the scant supply now on hand in this country, even if someone's "personal rights" need be interfered with.

* * *

Better Hay and Feed

Every year tens of thousands of dollars are lost to farmers by the low market value and the poor feeding quality of poor hay. While part of this loss comes from being adulterated by weeds—a cause which is too late to remedy for this year—perhaps the larger loss and the low grading is caused by poor methods and bad management in making. Of course, as pointed out in the article on first page, the weather—an uncontrollable factor—has a great influence, yet we know good haymakers who succeed in getting their hay up in good shape in spite of "brittle" weather, while others have a lot of spoiled hay even in normal seasons.

In spite of the increase in the number of automobiles, hay continues to be in good demand at fair prices. Not only does the city trade keep up, but farmers are learning that they may make a larger use of good hay in the feeding of their stock than they thought possible a few years back. The emphasis on the value of concentrates which was so pronounced during the past few years led many farmers, especially dairymen, to neglect feeding a sufficient quantity of hay for most economical results. The high prices of feeds during the past two years have forced many farmers to feed more home-grown roughage, and they have found it profitable to do so. But to receive the greatest benefits the hay should be of good quality.

* * *

Memorial Day

Memorial Day has a new meaning to most of us this year. We had come to regard its observation as little more than a reminder of the national heroes long since departed. We paid homage to the veterans of the Civil War as they passed away, a few more each year. We acknowledged their claims to our affection; but passing years had dimmed the glory of their sacrifice in the minds of a short-memoried public. We paid our respects to the heroes of '97, but we had come to regard their fight for humanity as little more than a skirmish. We were forgetting that, to them, and in the things they accomplished, it was the supreme sacrifice, and that personal glory is not measured by the size of the undertaking or guaged by the numbers participating. We were coming to the point where Memorial Day was a national institution, but with little of personal interest or concern.

How different this year! Scarcely a family that will not fly a flag for a loved one somewhere "over there," or in some camp in preparation for service. Scarcely a heart that will not beat the faster at the sound of marshal music and breathe a new prayer for the safety, the guidance and particularly for the achievement of a loved one now recorded on the roll of national heroes. And thus we learn anew the greater love of country and of our fellowmen.

* * *

Is Your Farm Noted?

Is your farm noted for anything in particular? When strangers come into the neighborhood are they taken to your farm because it is noted for the possession or production of something of special note? Have you made a special study and practice of growing fine cattle, hogs, poultry, corn, clover, alfalfa or something else, so that your success fills you with a just pride, and you haul a visitor out to see them before he has time to take off his hat? That's the kind of enthusiasm that not only makes for financial success in farming, but fills the farmer's heart with a joy that is contagious and develops a respect for and interest in farming in the rest of the family.

Such a farmer is also a missionary in his community. The old saying, "Nothing succeeds like success," is literally true. Most people are converted more easily to new ideas and better methods in farming by seeing the results and hearing the explanation at first-hand than by any other methed of teaching. Truly, "Seeing is believing".

We have in mind a farmer who came into a neighborhood from another section and began raising soybeans as a regular crop. His study and experiments made him highly successful and everyone who came onto the place was taken to see the soybeans. The word spread and people came for miles to see and learn. Now, practically every farmer in the neighborhood is growing them successfully and profitably.

Another man introduced pure bred dairy cattle onto his farm. He was laughed at and ridiculed by his neighbors at first. "Surely," they said, "there is something wrong with a man's head who would go into debt and pay $200 for a bull calf." But seeing will convert the most skeptical, and the only laughing now in that neighborhood is caused by the sight of the larger creamery checks which nearly all receive.

Make your farm noted for something, even if it is only for its fine geese.

* * *

Condensed Milk

Varied war conditions have made the milk condensaries of this country a most important factor in local as well as international milk markets. Under normal conditions the condensaries were a stabalizing factor, taking milk at time of greatest production and helping hold prices at a fairly equitable basis. With the gradual decrease in dairy production in the warring countries, the demand for American condensed milk products grew to enormous proportions. The American condensers responded with enlarged plants and increased equipment until they had become a dominating factor in the whole milk market. With exports of butter and cheese cut off, the dairy industry would have faced a most serious situation except for the outlet in condensed goods. But with the limitations in shipping this spring, the condensing industry has been badly crippled. No formal embargo has been placed against their goods, but it was ruled that exports of milk must be held at a certain maximum to conserve shipping space for other products. This cut off the greater part of the export business, crippled the condensers and curtailed their consumption to a point where they could no longer take their share of whole milk. This curtailment of the condensing consumption is said to be the big factor in the promised cut in June price of milk in the New York market, the unsatisfactory price in Chicago, and if not remedied is certain to make its influence felt in every city market. The first effect will be to cut the price of milk to the producers.

In seeking a remedy, it seems certain that the condition is only temporary. The demand for condensed milk products is increasing rather than decreasing abroad. Holland and Denmark are now suffering for want of our feeding stuffs, and dairy production in those countries must grow less and less as long as the war continues. The needs of the allies will become greater. The limiting factor will be ships. We are told that ship-building is at last making satisfactory progress. We are told that the submarine menace is becoming less feared. Everything points to the probability of increased shipping space within a few months, and authorities agree that the demand awaiting will absorb our stored stocks as soon as they can be moved. But in the meantime the backed-up surplus threatens to upset the dairy markets and endanger the dairy industry. And with the dairy herds reduced there will be no way of quick recovery to meet the urgent demands that seem certain to follow. It takes from three to five years to replace dairy producers that may be sacrificed in a month.

The condensers claim to be stocked up to the breaking point. Some have been compelled to shut down and more will follow. Government assistance in the purchase of present surplus for storage until shipping conditions improve would save the situation. We realize that excessive demands are being made on the Government in many lines. And the Government is responding according to the military importance of the commodities and the industries affected. Unless it renders some assistance in the milk situation the dairy industry is certain to suffer.

* * *

Co-Operation For Women

A news item in the New York Letter on opposite page this week tells of a community kitchen which is to be started in Onondaga County, N. Y. While this particular one is intended to take care of surplus fruit and vegetables and the product sold for the benefit of the Red Cross, why could not the idea be adopted in any thickly settled community to do the general home-canning as well? Some unused building which would be suitable for the purpose can be found in almost every neighborhood. This may be equipped with a canning outfit of the size needed, co-operatively purchased. Other equipment can be furnished by the different members of the organization. The required number of workers for each day's work may be found and a schedule arranged beforehand to suit the convenience of the different house-wife members. In this way, the work of the canning season could be reduced to a minimum.

A great deal has been said about the advantages of co-operation in regard to the business of the farm, but, comparatively speaking, little has yet been accomplished. Such discussion is generally confined to the larger business of the farm, yet no branch of farm work has greater opportunities for co-operating to mutual advantage than are found in some of the housewife's tasks, and these the most arduous. We are finding in these strenuous times that the conservation of human energy must be achieved in every possible way, and many changes in methods of work, existing mostly as theories heretofore, are being forced upon us by circumstances.

We would like to see the co-operative canning plan tried in one or many places. It is possible to get up-to-date canning equipment at moderate cost, and also to get the best instruction from state colleges at no cost, when needed. We believe it would be economical of both time and labor. Besides, it would be a start towards other like enterprises—community laundries, bakeries, etc. What do our women readers think about it?

HARRISBURG NOTES

After the Primary.—Results of the primary election in Pennsylvania on Tuesday mean just one thing to the observers of politics on Capitol Hill, many of whom hold their places there because they are able to discern movements far in advance of the ordinary man, and the signs are that the liquor influences are determined to control the next legislature. The men nominated for twenty-eight senatorial seats, more than a majority of the upper house, and for the 207 seats which comprise the lower branch, were selected largely because of their stands on the question of the prohibition amendment ratification. Men of known "dry" tendencies went down to defeat before the organized strength of the "wet" forces in many a county where it was not realized that the liquor people had been working for weeks while the church, the eminently respectable people, the business men, the farmers and workingmen were attending to ordinary affairs. This was a politicians' primary and the liquor people seem to have had many politicians at work. In other words, it means that unless there is an uprising, and in some districts voters would have to use stickers, the same "wet" forces that have operated in the last dozen legislatures will have a powerful group of votes in both branches organized without regard to party lines. This group will have to be reckoned with in every legislative action, just as before.

The results of the primary for the nomination of state officers who will not have anything to do with the ratification of the amendment except insofar as weight of influence goes, show that the liquor people were especially active in the Democratic party. The route of Governor Brumbaugh and the state administration forces which had aligned themselves with the O'Neil party surprised no one but the Governor and his friends. It was simply a question of the size of Sproul's majority and it has gone beyond the expectations of the supporters of the Delaware County man. The Governor has added one more defeat to his record and in private has voiced indignation and chagrin at the way he was treated. It is not likely that his feelings will be much reflected on governmental matters as the tenure of his office is short and men removed would likely come back with the added glory of martyrs. All the Governor has to give is a number of important appointments, which occur thru the accident of death, and they are not so attractive as a few months ago because all must be passed upon by the people at the November election, or by the Senate of Pennsylvania in January. In the Democratic party, the party organization suffered a defeat as unexpected as it was severe. There is talk of a third party in which the men at the head of the Democratic organization and the O'Neil people would figure. Such a course would mean eminent Democrats would be put in the position of bolters and the decisive size of the Sproul vote, as compared with that polled by O'Neil, may deter people from organizing such a movement.

The Rural Schools.—Without waiting for any expression of idea from the gubernatorial office the people active in the State Educational Association have undertaken to prepare to meet the needs in rural education. It had been expected that the Governor would give some thought to this serious and much discussed situation, but he became swamped with politics and as his influence is waning the educators are getting ready their own program. Briefly the plan is to obtain a larger school appropriation, toward which the direct inheritance income will contribute; to secure a new basis of distribution which will overcome the advantage which has turned toward the cities because of population; to bring about systematic relief for districts with small resources, some of which have experienced sudden increase in population or decrease due to movement toward the cities; to aid in the teacher and supplies problem, and to put the consolidation idea into shape whereby schools with dwindling attendance can be grouped and adequate transportation and quarters provided with sufficient teaching force.

Farm Insurance.—According to what is heard about the State Insurance Department farmers are commencing to realize, as are many business men, that insurance policies which were considered ample a few years ago are now, because of the advance in cost of material, not likely to afford the protection hoped for. There has been quite an increase of amounts carried in the cities, but as yet farmers have not given the matter much attention. The editorial reference to the situation contained in the Pennsylvania Farmer last week was much discussed here.

The Dog Law.—The State Department of Agriculture has issued many copies of the dog law and decisions in relation to it. It is stated that public policy calls for a strong enforcement, especially in counties where sheep raising has lately been undertaken in large measure. The state has called upon county authorities generally to prosecute constables who do not act, and owners of dogs which are not licensed. The state game authorities have joined in as there are many foreigners who are believed to have not only dogs but guns in defiance of state laws. In some industrial counties the dogs have become a nuisance.

Crossings and Rates.—Grade crossings and rates for trolley fare, telephone and electric and gas service are subjects which have been keeping the Public Service Commission busy and indications are that there will be decision soon of state-wide effect. The Commission insists upon abolishing grade crossings shown to be dangerous and the federal authorities, as directors of railroads, want to prevent consequently big outlays of money during the war. The question is now assuming proportions. The Commission has indicated that it has jurisdiction where an ordinance specifies a rate of fare, telephone rental or maximum charge that it can set it aside if the public utility can demonstrate that in the present condition such rates are unreasonable and do not enable it to operate at a profit.

The Stream Question.—The State Commission of Agriculture, which in spite of frowns from the Governor's office is still on earth, and the State Department of Health do not appear to have gotten very close together in regard to the streams of the state. There have been complaints that streams were fenced off from cattle and that they ran with industrial wastes far more dangerous than animal matter. The problem is commencing to arouse discussion as there is a move to increase sheep and to raise more beef, cattle and hogs.—Hamilton, Harrisburg, Pa., May 27.

NEW YORK LETTER

More Boys Take Up Farm Work.—J. A. Brooks, zone director of Boys' Working Reserve, reports 150 boys placed on farms in Onondaga County this week. The work is just starting in the 15 counties over which he has supervision and he will find places for all the boys desiring work in this section. Fifty camps for working boys have been established in the state so far, supported by private citizens who wish to help farmers secure laborers. The boys are in sound health and average 75 percent in their studies. They will be given regent's credit for successful work on farms. The first enlistment is for 12 weeks, at a minimum wage of $3.75 per week for the first 4 weeks; $5 for the second four weeks and $6.25 for the third four weeks, payable weekly. The boys are to have one-half holiday each month besides legal holidays and one full holiday during the 12 weeks. Wages include board and plain washing. At the expiration of the 12 weeks the boys may sign up until the end of the harvest—an improvement over last year's plan.

Milk Testers Needed.—There is, at the present time, a shortage in competent milk testers and to supply the demand the dairy department of Cornell College of Agriculture will give a free two weeks' intensive course, open to both men and women, beginning June 12. Applicants should have a good grammar school education. The course fits students to do official cow-testing or commercial milk testing.

100 Farmerets Ready.—The first farmeret unit begins work this week at Baldwinsville—a truck growing section. The unit is housed in the clubhouse of that place, and consists mostly of college girls. Groups will be sent out from this place at $2 per day per worker. The girls carry their lunches to their work and their wage from the unit is $15 per month. The unit boards them, carries them to more distant places of work and does their laundry work. On rainy days the girls find work of their own to do indoors. Farmers have been slow to believe that girls can do the arduous work necessary, but have decided to try them out as help is so badly needed. Factory girls are applying for work during vacation periods and will be helped to find suitable, healthful occupation. Sentiment will be stirred up as rapidly as possible in other sections in favor of the farmeret movement.

A Community Kitchen.—Skeneatles is to have a community canning kitchen, to care for the surplus fruit and vegetables from the garden association of the town. The old high school building is to be equipped for culinary purposes and daily collections will be made at 8 A. M. and 2 P. M., during the canning season. A credit system is to be adopted whereby each person's contributions are accounted for and by presenting this at the close of the season each shares the canned goods at the kitchen on this basis if desired; or, the goods may be sold. All produce is credited at market prices. Each woman is to designate the day and hours of each week when she will give her services at the kitchen. A leader and secretary is supplied for each day's work. At the close of the season the profits of the business will be given to the Red Cross.

Dairymen's League Cases Dropped.—District Attorney Swarm of New York announces that the signing of the bill exempting from the operations of the Donnelly anti-trust act such organizations as granges and farmers' organizations makes it necessary for him to dismiss the indictment found last October against the officers of the Dairymen's League. The members indicted had obtained a change of venue.

Cows Break Butter Records.—On the Abbott and Clark farm near Cortland, heretofore known as the Peck dairy farm, where the finest barn in state is found, several butter records have recently been broken. Leafy Dawn De Kol made a record of 42.52 pounds of butter in a week, then subsequently raised her own record to 43.14 pounds. Sunrise Hegenweld Caroline made a record of 40.05 pounds and later raised it to 41.06 pounds. A daughter of the former cow, Leafty Veeman De Kol, has also made a record of 40.06 pounds. These are the 34th, 35th and 36th cows to attain a record of over 40 pounds. Of these 36 cows, Mr. Clark has developed four.

Milk Notes.—Owing to a conference of New York's leading dairymen and other agricultural experts, with authorities at Washington, the food administration has agreed to use its influence to promote wider use of milk, cream, butter and cheese and has really begun such work. The Assistant Secretary of War and Quartermaster General John Goethals have also promised to see, so far as possible, that milk and its products are added to army and navy rations. This is important work and a means of making good use of surplus products that are accumulating to such a degree as to endanger and cripple the milk industries. Two very valuable pieces of legislation is due to the efforts of the Dairymen's League legislative committee; one is the amendment in the Donnelly anti-trust law, excepting farmers' organizations from the operations of the law—a feature which has long hampered co-operative selling of farm products; and the defeat of a law favoring oleomargarine interests. The vote of almost every branch league of the state on Saturday, April 27th, to abstain from the use of oleo will be a set back to that industry, which gained 25 percent in its sales in 1917, due to farmers' use of the product. It is found that in many localities farmers are unable to buy good butter in sufficient quantities, and have used oleo. Hereafter an effort will be made to place some of the surplus butter that menaces the dairy industry in all groceries so that farmers may obtain it fully. Butter is so low in price, comparatively, that it is now a loss to farmers to produce it—selling from 40 to 46 cents a pound, and surely it ought to be easy to secure it.—F.

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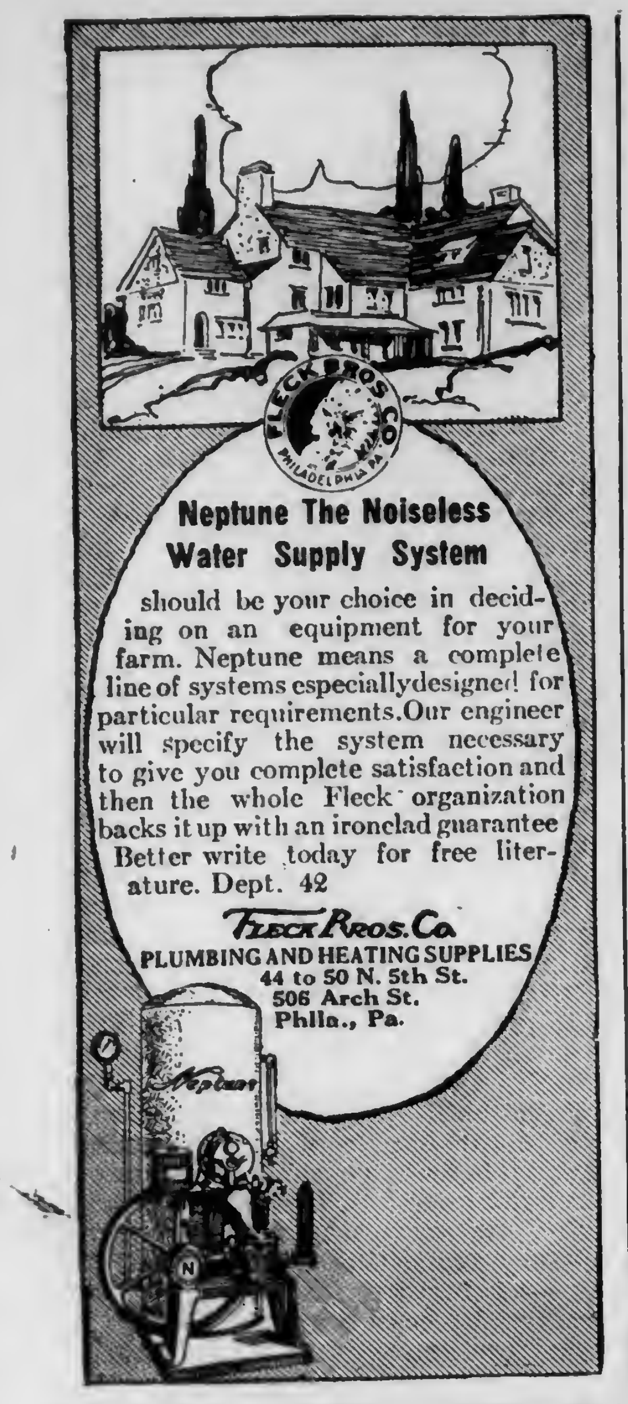
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WM. GALLOWAY CO., Box 193
Waterloo, Iowa

Alfalfa and Silage

The Best Combination For the Dairy Cow

The words "Alfalfa, Corn and Dairy Cow," present to us a mental picture. First of alfalfa, a perennial leguminous plant, producing a large tonnage of food rich in protein and mineral matter; second of corn, an annual plant producing a large quantity of carbonaceous food; and third of a dairy cow highly developed for milk production that will convert these goods into milk, giving us more nutrients for the nutrients consumed than can be obtained by the production of beef, mutton or pork.

Alfalfa, corn and the dairy cow are the best combination that is known today for maintaining and increasing the productivity of our farms and for the economic production of animal nutrients. This combination is especially adapted to the farms of central, southern and eastern United States, where corn was successfully grown by the Aborigines. Alfalfa has only recently been introduced, yet the success with its culture in all sections and on various soil types of this entire region establishes our confidence in its economic importance on all our dairy farms. Therefore, let us consider alfalfa, corn and the dairy cow linked together and inseparable for the highest type, most permanent and economic enterprise in our agricultural development.

Alfalfa Hay Under Covers on Walker-Gordon Farm, N. J.

Alfalfa is an old world plant. It has been in use as a feed for live stock, according to the meager accounts of ancient history, many centuries before the christian era. The Spaniards brought it into South America and during the middle of the last century it was introduced into California and immediately became very popular in the semi-arid regions of the west where it was largely grown under irrigation. Its culture has gradually extended eastward where it has been grown successfully in favored localities of the east, on soils filled with limestone fragments for 15 or 20 years. During the past few years it has been demonstrated that alfalfa will grow on any good, well-drained soil in the east, south or central west, providing the soil is made neutral or slightly alkaline by the application of lime, a liberal supply of plant food, a good seed bed, and an inoculated seed of a variety that proves hardy in the section in which it is sown.

Alfalfa is a deep-rooted plant, sending its roots down in the soil far beyond the depth where the roots of our other farm crops can go, feeding upon the rich mineral matter of the sub-soil. It is also capable of converting the free nitrogen of the air to its own use, thru the medium of the bacteria upon its roots, in common with other leguminous plants. It has the distinct advantage of being a perennial and will live and grow thriftily many years. In the central eastern states it can be cut three times a year and will yield between three and four tons of cured hay per acre. This hay should be cured in the cock under cap. Due to the humidity of our eastern climate we cannot obtain the bright green color in our eastern hay that is obtained in the western hay, but if the eastern hay retains its leaves and is free from mould, altho dark colored, it will feed equally well if not better than the western-grown product. Large quantities of alfalfa hay are shipped from the west to the east in the form of hay or in alfalfa meals. The basis of many of the mixed feeds put upon our eastern markets consists of alfalfa meal. Freight rates on these products from the west are from $10 to $15 per ton. We can grow alfalfa hay in the east for less than the freight rate on the western products. Alfalfa will eventually be grown on every farm and will be the hay used for all kinds of live stock in the east as well as in the west.

Corn is a new world plant. The American Indian was cultivating this plant at the time America was discovered. Every Indian village had its corn field, the corn being grown on land cleared by burning down trees, planted, weeded and harvested by the squaws. The value of corn was at once recognized and the grain has been improved by selection until today it is quite common to have large fields yield 100 bushels of shelled corn to the acre, and 15 to 20 tons of silage are not uncommon. Making silage of the corn was introduced in the eighties and has gradually grown in popularity until today nearly every dairy farm has its silo. The growing of alfalfa, corn, winter rye or wheat not only makes one of the best combinations of crops to maintain and increase soil fertility, but will give us the greatest number of pounds of digestible nutrients per acre at a lower cost than any other combination known today. With this system of cropping, a comparatively even labor load can be maintained thruout the whole season, from early spring until late fall.

Briefly, the farming operations follow one after the other as follows: Early in the spring cultivating and fertilizing alfalfa; preparing alfalfa sod for corn; planting, harrowing, cultivating corn; harvesting alfalfa; harvesting wheat or rye; harvesting second cutting alfalfa; preparing wheat or rye stubble for seeding; harvesting third cutting alfalfa; seeding of alfalfa; harvesting corn; preparing corn ground and seeding to wheat or rye; plowing alfalfa sod for next year's corn. Today, with high-priced labor and high costs, the management of our cropping system should be such that every day's work goes directly into the growing of crops and that every day during the season there is something to do and that there may be no period when the labor load shall be such that the crops or the harvesting of them shall be neglected.

The importance of corn silage and alfalfa as a feed for the economic production of milk has become recognized by all who have used them, but there is a large percentage of dairy farmers who do not know their economic value. Only a few years ago our agricultural press was filled with the discussion of soiling crops for the dairy cow, later we were taught the advantages of the summer silo to supplement the summer pasture, but today I believe we should consider seriously the advantages of feeding alfalfa hay and corn silage 365 days in the year. If we have some pasture, let us think of that pasture as a supplement to alfalfa hay and corn silage. From the experience of those who have already adopted the above method I am convinced that a larger yield at less cost can be maintained thru the whole year.

The reasons for this I believe are sound. First, that the cow is getting the succulence and nutrients out of the ensilage that compares favorably with pastures. She is getting the rich protein from the alfalfa. She is getting sufficient food without traveling over rocky hills and knells, without using her energy in this muscular work. She can be kept in the cool shade of a covered yard and not have to go out in the open and fight flies. In the past we have expected too much from our pastures which only give rich, nutritious, succulent feed from six to eight weeks in the season. Therefore, let us depend more upon corn silage and alfalfa hay for our feeds and if for a short period we can supplement them with pasture it is advisable.

Upon the agriculture of the country depends the permanency of a nation. This seems to be a time when food stuffs are not sufficient to meet demands. As farmers we have a duty to ourselves and to our nation that we exert every energy to produce the maximum nutrients per acre at the least possible cost, and I know of no better combination than the growing of alfalfa, corn and wheat, feeding the alfalfa and corn to a good dairy cow, making her comfortable by bedding her with wheat straw, sending the wheat to the market to feed the people, selling the milk or manufacturing it into cheese or butter. By this method we are going to maintain and increase the productivity of our farms, thereby making a prosperous agriculture and consequently a prosperous nation.—H. J., New Jersey.

NEW YORK PRICE COMPLICATED

The New York market is not absorbing the full production and most of the distributors are manufacturing some of their output. The Federal Milk Commission met on May

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20 but in view of the fact that the distributors and the Dairymen's League had previously agreed on a rate for June of $1.80 a hundred for 3 percent milk, the Commission did not act. The Commission felt that this was not a just rate and could not confirm it. The Commission exists by virtue of the fact that the distributors, producers and condensors asked it to continue its work and agreed to abide by its decisions. Two of the parties having agreed among themselves on rates, the Commission felt that it could take no action. This leaves the situation up in the air.—S.

INTER-STATE ASSOCIATION NOTES

There are several less dealers in Philadelphia by reason of the activities of the Inter-State Milk Producers' Association. These are all men who have been unable to meet their obligations. When pressure was brought to bear they sold out their good-will to more successful competitors. In these cases collections have been slow, but whenever the claim was not delayed too long, full payment has generally been made. Every farmer should insist upon prompt and regular settlements and in the event of any irregularity, he should at once communicate with the association, so as to get the benefit of the information in possession of the officers. A number of other milk dealers have been buying milk from wholesalers in Philadelphia, because the association has made it practically impossible for them to do business with farmers. These are dealers who are guilty of sharp practices. Some stop dairies off without warning when milk is plentiful; some do not keep contracts; some have no credit and leave a trail of unpaid bills behind them. The names of such can only be divulged to members of the association, thru a personal letter or interview.

Altoona District Organizing

The farmers around Altoona will receive an increased price for their milk in the future, due to the organization. The secretary visited Blair County at the time of the hearing before Dr. King, of the Food Administration, and there was full support from all over the territory supplying the city. The farmers were very appreciative of the efforts of the organization in their behalf and are forming strong locals. There were already two there, composed of patrons of Philadelphia shipping stations. Two meetings were held; one at Curryville, addressed by Mr. Balderston and attended by about 100 farmers. Another meeting was at Hollidaysburg and at this Mr. Willits was also present and spoke. He was in Altoona attending a conference called to consider necessary dairy legislation for Pennsylvania. This conference was only preliminary and not fully attended, but a tentative program was outlined.

The Inter-State Milk Producers' Association insists that all market conditions must be known and considered in making a price and furthermore that all producers must in these trying times consider production costs very closely. Some feeds are advancing in price over that obtaining a month ago. The demand for others is somewhat unsettled. Our farmers can win or lose by their ability in buying feed. Boarder cows are salable at prices not dreamed of before the war. Don't harbor them longer. But which are they? No one dare guess at it. Keep a record, and having kept it, use it in forming your judgments.

Speakers Furnished

There should be meetings held this spring and summer thruout the Philadelphia territory to assist producers in deciding some of these questions that come so close to home and to explain to everybody why the price of milk is what it is. A number of suitable speakers are available now. The office has assisted in collecting a number of slides for the Food Administration to use in its campaign to increase milk consumption. It is now proposed to have a similar illustrated talk for farmers, and this will be made available to all who write for it in advance.

MILK MARKET NOTES

Sending Milk Abroad

Milk producers are glad to know that sugar and milk restrictions are removed from ice cream manufacturers by federal authority in deference to the great surplus of milk, which will find some outlet here. In New York City, the women have started a campaign to send free milk to France for French children, wounded soldiers and tuberculous patients, opening with a parade with rural floats, a real cow, etc. This is one of the worthiest efforts yet undertaken to relieve the food situation, as we are troubled with a surplus of milk which threatens the existence of the herds, while Europe suffers untold privations for lack of this most valuable food.

Cheese Markets

R. J. Richardson told the representatives of the leading cheese and butter centers of the state at a recent meeting in Gouverneur that the Government is soon to control the cheese and butter trade by fixing profits. Assemblers of cheese, before it reaches cold storage, will be allowed 5 percent commission; wholesalers, 10 percent; jobbers, 10 percent and no restrictions for retailers. Sales from dealer to dealer are to be prevented, as leading to undue speculation. Gouverneur finally accepted 21¼ cents for cheese; Watertown, Utica and Canton the same; Plymouth, 20¾ and 21⅜ cents; Cuba, 21⅝ cents, and Salamanca, 21¾ cents.

Co-operative Plan

Columbia County farmers propose a plan of operation for the Dairymen's League, by which it can assume control of the milk of the state. The League already has an option on all Borden plants for six months, the purchase price to be $5,000,000 if a deal is made. By buying all state shipping stations, forming a great stock corporation with $10,000,000 capital, the farmers will be able to protect themselves, do business at less expense, and furnish milk to consumers at less money. Shares are to be $100 each and the 45,000 membership of the state will finance the enterprise. The plan is approved by high authorities and would call for trained, efficient men. Much is expected of the League in the near future and dealers are dissatisfied and in a mood to sell while the unrest of the dairymen demands decisive action if the industry is to be maintained in a volume sufficient for the needs of the people.—F.

To waste good feed on poor cows is foolish; to waste good cows on poor feed is criminal.

It Is Easy To Clean Milk Cans

and milk bottles with 20 Mule Team Borax because the Borax quickly cuts off the fatty substance that sticks. Cleanses them hygienically, too, because Borax is mildly antiseptic.

20 MULE TEAM BORAX

should also be used freely about the barn or stable. It prevents the hatching of flies and other insects and kills all odors. Keeps pails, troughs, mangers and stalls in a sanitary condition at little cost and with no labor.

At All Dealers

Send for "Magic Crystal" Booklet. It describes 100 household uses for 20 Mule Team Borax.

PACIFIC COAST BORAX CO.
New York Chicago
ONE POUND NET
20 MULE TEAM
PURE BORAX
FOR HOUSEHOLD USE

SHARPLES SUCTION-FEED CREAM SEPARATOR

Gets *all* the butterfat *all* the time by skimming clean at any speed.

The Sharples Separator Co. West Chester Pennsylvania

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IRONCLAD KHAKI (Twill Cloth)

Uncle Sam's Boys and Girls both wear garments of

Ironclad Khaki

the patriotic economy cloth. It's fast color—can't fade and wears like leather.

Be sure the Ironclad "army" label is sewed in every khaki work shirt, pants and overalls you buy.

Garments on sale by dealers—everywhere

Write for free samples of Ironclad Khaki Cloth and Miss Ironclad Khaki Cloth to

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Manufacturers of Cloth Only
123 Market Place, Baltimore, Md.

Received $58 More By Sending His Old Bags To Us

An absolute fact A Jersey farmer brought his assortment of old bags to us and asked us what they were worth. We told him and gave him on the spot check for $148.46. Previously he had been offered $90.00 on the same allotment of bags. (Name and address of farmer given to any one on request.)

For Best Price Send Old Bags to Knott

In business 30 years and absolutely dependable. You get a square and honest deal from this concern. We pay top market prices and send check or pay cash immediately on receipt of goods. Write us for price list or bring your bags to us yourself. Phone us, if desirable, and compare our prices with others.

DAVID N. KNOTT'S Sons, 104 Callowhill St., Phila., Pa.

HERE'S the simplest, most convenient and efficient hand separator. It gets every ounce of cream out of the milk; gives you every penny of profit in your butter.

Reid Disc Separator

attaches to wall—out of way when not in use. Weighs 50 lbs. boxed for shipment. Send for booklet of Dairy Supplies.

A. H. Reid Creamery & Dairy Supply Co.
69th St. and Haverford Ave., Phila.

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Hauser-Stander Tank Co. Dept. F Cincinnati, Ohio

Rider Agents Wanted

Everywhere to ride and exhibit the new Ranger "Motorbike" completely equipped with electric light and horn, carrier, stand, tool tank, coaster-brake, mud guards and anti-skid tires. Choice of 44 other styles, colors and sizes in the famous "Ranger" line of bicycles.

DELIVERED FREE on approval and 30 DAYS TRIAL. Send for big free catalog and particulars of our *Factory-direct-to-Rider* marvelous offers and terms.

TIRES Lamps, Horns, Wheels, Sundries, and parts for all bicycles—at half usual prices.

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A MILKER That Milks

without stripping after—without injuring your cows Investigate this milker!

Buckwalter Supply Co.
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LACTANT

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Free Catalog in colors explains how you can save money on Farm Truck or Road Wagons, also steel or wood wheels to fit any running gear. Send for it today.

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Spray with the best and assure yourself of perfect protection

All Kil-Tone Products are manufactured by experts, who have spent years investigating your spraying problems, so as to give you materials which are quick acting poisons and active fungicides.

They are now acknowledged by most of the leading ground crop and fruit growers to be the best on the market. They can be obtained in either paste or powder form.

Bring your crops to maturity in a sound, healthy condition and assure yourself of obtaining the highest price. *Write for instructive booklets covering spraying of all crops.*

Reading Bone Fertilizer Company
Reading, Pa.
State Distributors
THE KIL-TONE COMPANY
VINELAND, NEW JERSEY

For Potato Bugs And Blight *use*
SULFOCIDE
and
CAL-ARSENATE

—a new combination which bids fair to replace the old Lime Sulphur-Arsenate of Lead and Bordeaux-Lead mixtures, in both orchard and garden.

It is more powerful and much less expensive. 1 gallon and 4½ lbs. makes 150 gallons of spray.

Send for circular

B. G. PRATT CO., *Mfg. Chemists*
50 Church St. Dept. A New York

IRON AGE
Farm, Garden and Orchard Tools
Answer the farmer's big questions. How can I can get my crops sprayed when help is scarce? How protect my crops against bugs and blight?

IRON AGE *Traction Sprayer*
meets the need for a fast-working, high-pressure field sprayer. Covers 4 or 6 rows—55 or 100 gal. tank. Write today for free booklet.
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Bateman M'f'g. Co.
Box 76-R
Grenloch, N. J.

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FOR TYING
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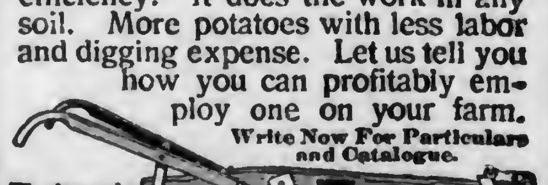

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a simple plow digger unequaled for strength and efficiency. It does the work in any soil. More potatoes with less labor and digging expense. Let us tell you how you can profitably employ one on your farm.

Write Now For Particulars and Catalogue.

We also make Engines, Saw-Mills, Threshers, Grain Drills, Hydraulic Cider Presses.

A. B. Farquhar Co., Ltd.
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Seed Corn 500 bushels White Star. Early maturing yellow dent for silo or husking. $4 per bu. shelled and bagged. Good germination. Special price on the lot. Sample for stamp.
HARRY VAIL, Warwick, Orange Co., N. Y.

Vegetable Plants Cabbage, Early Tomato, Beets, Sweet Potatoes, 100-50c; 300-$1.20: Postpaid. $2.25 per 1000 not pre-paid. Other plants in season. David Rodway, Hartly, Del.

Horticulture

Timely Fruit Notes

By Dr. J. P. Stewart

Curculio and Brown Rot

"I want to spray my peaches at the time they are shedding their shucks or husks, and I want to use one spray to control curculio and brown rot. Will you please send me the formula?"—H. M. C., Montgomery County, Pa.

It is doubtful whether both the curculio and brown rot can be controlled with a single spray, on peaches. It is often possible to control them satisfactorily with two applications but the season would have to be especially favorable in order to succeed with one.

The proper combined spray for use on peaches is self-boiled lime-sulphur and lead arsenate. I would use the 8-8-50 formula for the self-boiled lime-sulphur, and at least 2½ pounds of lead arsenate paste for the arsenical, in case you wish to attempt to control with a single application. If two applications are made, the treatment just described should be used about a month after the shucks are shed, and the first application at the shuck shedding time should consist of lead arsenate paste and slaked lime, at the rate of 2½ pounds of the former and a couple pounds of the latter in 50 gallons of spray.

Terrapin Scale on Peach

"Kindly tell me what this is on these pieces of limbs you will find in this package; also the effect they have on the tree and what will dispose of them, and any other information you can give."—F. T. B., Lackawanna County, Pa.

The twigs sent are infested with the lecanium, or terrapin scale. It is probably a trifle late to combat this scale in the most efficient manner, as it is best controlled by oil sprays shortly before the buds open. Standard miscible oil applications at this time, at the rate of about one part of the miscible oil to fourteen parts of water, will usually reduce them to negligible proportions.

A recent Bulletin No. 351, issued by the U. S. Department of Agriculture, recommends the following emulsion on the dormant twigs:

Raw linseed oil	5 gallons
Gasoline	2 gallons
Soap	2 pounds
Water	92 gallons

It is recommended for application shortly before the buds burst, and is apparently slightly preferable to the miscible oil preparation because of the lessened risk of injuring the trees and especially the fruit buds, which sometimes occurs with the applications of miscible oil.

At present practically the only thing that can be done is to wait until the young begin to appear, which is usually about the middle of June, but is best determined by making daily examinations of the infested twigs around that date. As soon as the young insects appear, they can be greatly reduced by a thoro application of lime-sulphur solution diluted at the rate of 1 to 60 or slightly weaker. This application may burn the foliage a trifle, but the benefits will greatly over-balance the slight damage that may result to the trees. The trees should be examined carefully for further evidence of young insects for several days after this application, and if they reappear in any considerable numbers, the spray should be repeated.

Garden and Truck Crops

TIMELY COMMENT

Early Peas

Early peas are considered to be an excellent crop to grow, because when the vines are turned under they really improve the soil. The sooner the vines are plowed under after the crop is picked, the better it will be for the succeeding crop, because the soft green vines will decay quickly, and the plowed soil will be in excellent physical condition for beans, beets, cabbage, celery, late crop potatoes, late tomatoes, or late sweet corn. If the ground is not plowed soon after the peas are picked. it may become dry and lumpy. The ripe vines will be tough and may not rot all summer.

Bunch Beets All Winter

New beets can be bunched all winter provided the gardener will plant the right variety early in July and store them so that the tops will be kept in splendid condition until the beets are bunched for market. The first requirement is that the right variety be chosen for the special use. A strong, heavy leaf structure is essential for late keeping. Detroit Dark Red and Early Wonder are worthless for the purpose. Dewings is very good and Edmunds Blood Red is frequently used. After the seedlings come up they are thinned out to stand 5 to 6 inches apart so that an even growth is secured. The beet is easily injured by the early freezes, therefore it must be taken care of very early in November.

The beets are stored very much as celery is stored in the field. Trenches are made about 6 or 7 inches wide and about 15 inches deep. The beets are stood upright with about two solid layers of beets in the bottom of the trench. Usually the bottom of the trench is a trifle wider than the top so that when the two solid layers of beets are in place the tops of the beets will nicely fill the trench without crowding. The top must be kept dry and steaming or heating will do more harm than a little freezing at any time; therefore, the tops are covered with two eight-inch boards having the edges nailed together at right angles. This sheds the water, provides air and yet keeps off the severe wind and freezes. A little later some salt hay may be spread about an inch thick over the tops before the boards are replaced. As the weather becomes even more severe additional covering is placed over the boards.

When the beets are bunched for market, it is well to remove the poor leaves and perhaps clip off part of the tips of the leaves. They should easily bring a dollar per dozen bunches of four beets each.

Saving Asparagus Seed

Now is the time to select the most desirable hills of asparagus for the foundation of your next asparagus field. The hills which produce several large and desirable stalks are certainly far more desirable than those hills which produce many small stalks. The pollen from one plant fertilizes the seed which grows on another plant; therefore, if we allow all the plants to develop at once after the cutting season, it will be too late to make a real selection as the seed which may be growing on excellent plants may have cross-pollinated with inferior hills. It is essential that the finest seed hills be selected at once and be allowed to develop their top growth about three weeks ahead of the rest of the field. Then the choice plants will cross-pollinate with nothing but the very finest. Furthermore, the selected hills will get an earlier start and will produce better and more seed than they would if the stalks had been cut up to the end of the cutting season.

Spraying Tomato Plants

Soon after the tomato plants go to the field, the potato bugs are frequently quite destructive. Arsenate of lead seems to be very effective and safe. Most growers prefer to apply some of this material to their plants just before they are set because then work can be done quickly. One precaution is essential if success is to be had. The material must have time to thoroly dry on the leaves, otherwise it is very likely to burn the foliage. Therefore, it is usually applied the day before the plants are to be set. Arsenate of lead paste is used one ounce to a gallon of water.

Solving the Labor Problem

Skilled labor is indeed hard to get. Reports coming from the labor bureaus in the larger cities state that there are many married men who would like to get out on farms with their families but the farmers are not equipped with tenant houses for them. Many skilled workers in the cities are making $125 per month and are having a job to make ends meet at the end of the month. If that same man could move into a farm tenant house and work for the farmer at $50 per month he would be ahead of the game, because his rent would be practically nothing and much of his living could be had from the surplus on the farm. Furthermore, his wife and children could make many dollars bunching asparagus, picking berries, peas, beans, tomatoes and other vegetables. The expenses of the family would be very small, with the result that when New Year's came they would have a fine bank account of several Liberty Bonds. The high cost of living in the cities is making this source of labor available and all the farmer has to do is to provide the tenant house.

When to Sucker Sweet Corn

Growers of early sweet corn find that the suckers are especially numerous on the earliest varieties. These suckers or side branches bear practically no crop and take the strength from the main stalk which is expected to bear our crop. Consequently, it is a paying job to pull these off if time will permit. Do not misunderstand me; field corn seldom has suckers excepting when it stands thinly on rich ground, and some varieties of late sweet corn such as

Stowell's Evergreen have far less suckers than the very early crop. It has been found by very careful tests carried out in Bergen County, N. J., on three big sweet corn farms that it made a difference in the yield and time of maturity as to the size of the stalks when the suckers were removed. When it is knee high the suckers are most easily removed because then they are just large enough to be easily seized and pulled off without affecting the growth of the main stalk. Suckers removed when the main stalk is knee high will not be replaced by others. In every test plot, that which was suckered first gave the largest number of prime ears and besides that the crop was ready for the table from two to four days earlier than that which was suckered later. Delay during the next few weeks means more work, smaller yield and later development. —R. W. DeBaun.

SQUASH-VINE BORER

In many localities, the most serious pest of squash and pumpkins is the squash-vine borer. It lives in the stems, causing them to rot where affected so that the plant may wilt and finally die, or break off where affected. The presence of the borer is indicated by the wilting of the plant, and it is located by the coarse yellowish excrement which it forces from a hole in the stem. Injury is most severe near the original root, and a half-dozen borers may be found in one plant.

Good Varieties, Well Grown and Well Handled, Make Tomatoes a Profitable Crop

Control.—As the borers work within the vine, poisons are useless and the pest must be controlled by cultural methods. Rotation is helpful, and some claim that coal ashes mixed thru the surface soil also are helpful. However, the best method is to hoe soil over a part of the squash vine about two feet from the original seedling. A new root system will develop from the covered section of the vine, so that if the borers destroy the vine near the hill, it will still continue to grow. An old standard method is to slit the stem length-wise with a pocket knife and destroy the borer. Its location in the stem may be determined by the excrement which comes from its burrow. Covering the split vine with soil will aid the healing.

ORANGE RUST ON BERRY CANES

Orange rust is one of the most common diseases of blackberries and raspberries. It appears early in spring on the young leaves of the plant. Very early the young leaves appear somewhat folded and deformed, and on the upper surface minute black bodies are produced. A little later as the leaves further expand, the under surface is covered with an orange-colored material. These areas soon break open and a mass of orange-colored spores of the fungus are set free. The rust is rarely found on canes. The diseased leaves gradually fall off and the disease seems to disappear during June and July. The affected plants are noticeably stunted but are rarely killed.

The fungus which causes the orange rust lives from year to year in the tissues of the raspberry and blackberry. It continues to develop thruout the growing season. Affected plants are almost certain to show the characteristic symptoms of the disease on the leaves in early spring, which is the conspicuous stage of the rust. The affected plants rarely produce any fruit of value. The number of infected plants varies greatly. In some cases the disease is so serious as to practically ruin the crop.

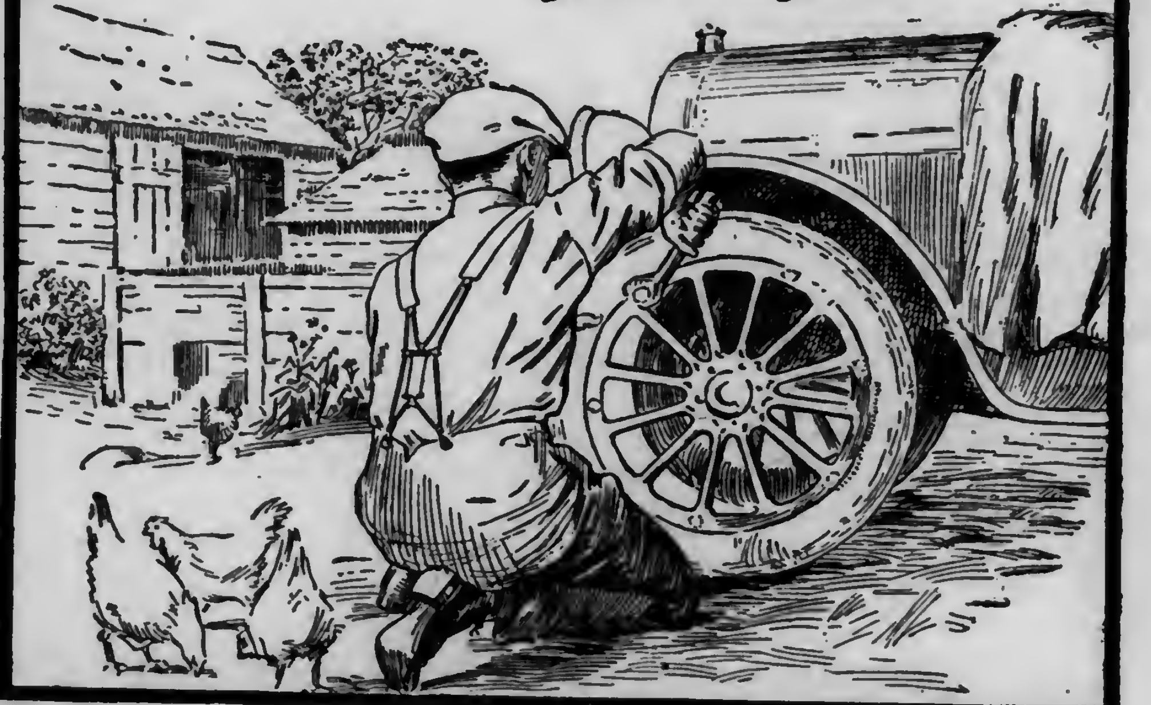
The only known remedy for this disease is to dig up and destroy the affected plants as early as possible. Careful examination of the plants during May will show the presence of the diseased plants. These should be promptly removed.

LIME FOR TOMATOES

Noting the article on page 509, I would say that the good effect of lime on the tomato crop will depend on the condition of the soil. Liming land that is not acid will have no apparent effect on the tomato crop. But the great majority of the acres planted in tomatoes on this Peninsula need lime.

One correspondent recently wrote me that he has used a ton of ground rock per acre on land intended for tomatoes where a light clover sod was turned under. Now while so small an application of limestone may possibly do some good finally an application of 1,000 pounds of freshly slaked burnt lime would have had a far better immediate effect in the improvement of the soil conditions for the tomato crop.—W. F. Massey, Wicomico Co., Md.

Lending money to Uncle Sam will furnish some folks with their start on a career of thrift and savings. Such a start is the first step in getting somewhere.



A Message From The President

By adding this new 75c. "High Grade" President to the regular President line the 150,000 "President" Representatives in the United States have at last a choice of suspenders that will appeal to *every* man who demands quality and comfort in wearing apparel at a thrifty-wise expenditure.

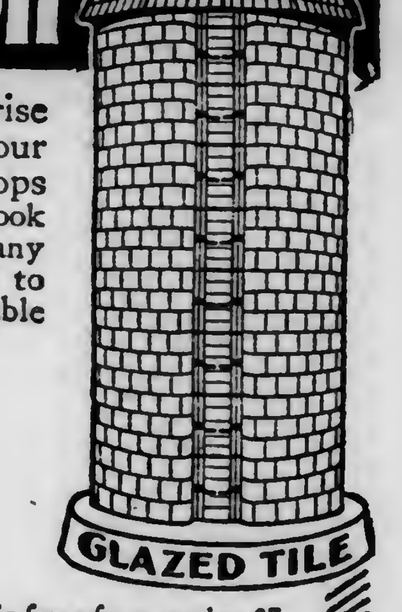
The man who buys the 75c. "High Grade" President, or the regular 65c. President, receives the utmost in value and service for the money. And the man who sells the line receives a return on his investment that makes his suspender business exceedingly worth-while.

We guarantee to repair, replace or (if requested) to refund the wearer's money if any President he buys is not absolutely satisfactory. We guarantee sales to the dealer.

Representatives *everywhere* sell Presidents. They should keep in advance of the demand by ordering the new "High-Grade" now from their Jobbers. The purchaser will profit in its splendid value. The dealer will profit not only in the customer's appreciation and good-will, but also in dollars and cents.

"High Grade"—a new one—

President Suspenders for comfort



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To be sure of getting your Kalamazoo, place your order **now.** Everything indicates an enormous demand for Kalamazoo Silos this season, therefore we urge you to buy early and be on the safe side. We offer **special inducements to early buyers**—and **easy terms** for those who prefer to pay for the silo out of the profits it earns.

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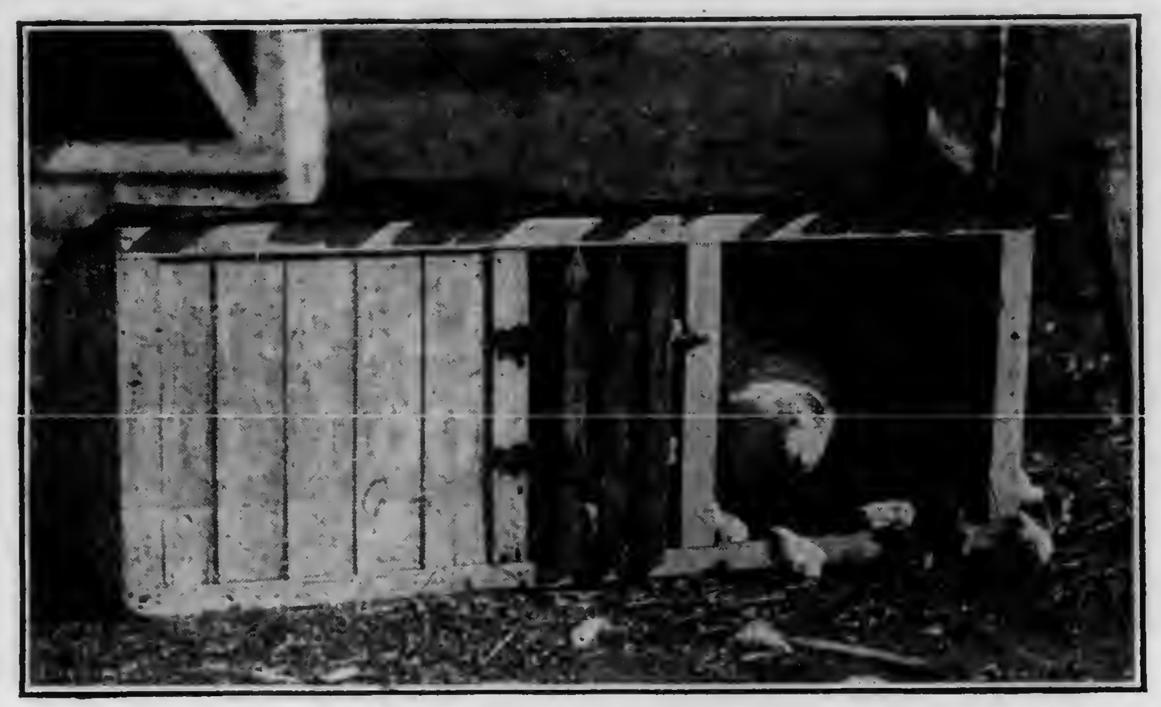
Care of Growing Chicks

By Ralston R. Hannas, N. J. Exp. Station

In caring for young stock successfully after removal from brooders, there are five factors which are of great importance. These factors are: Free range, green food, shade, housing, and management. The stock should be given all the room possible, allowing them to roam where they will and pick up all the worms, insects, bugs and green food they can get. The more room they have the greater will be the vigor of the flock while growing, resulting in a higher vitality laying flock when the birds are fully grown. An additional advantage in allowing the chicks free range is the saving which will result in the cost of feed, as they will get a large percentage of their food from the worms, insects, and green stuff they will pick up, thus requiring less grain and mash.

Green Food

Green food is absolutely essential and the range is the most economical way of supplying it. If, however, due to lack of room, it is impossible to supply green food by means of a large range, this material must be supplied in some form. It may be supplied in the form of cabbage, grass clippings, or sprouted grains—the latter being somewhat expensive, however, under present conditions. In case there is no good natural range available, the land reserved for the growing stock may be seeded down to a permanent sod, such as alfalfa or crimson clover. Where the birds are kept in such numbers as to destroy the grass, the range should be divided and a rotation of crops practiced. A good plan is to divide the range into four parts, planting oats and peas in one part, wheat and rye in another, corn in a third, and clover in the remaining part. The wheat and rye and clover should be put in the previous fall, and the oats and peas and corn planted in the spring. Plant the corn so that it is about a foot high when the chicks are turned out on range; this will supply shade as well as succulence.



A Handy and Efficient Brooder Coop

Shade

Growing stock should have an abundance of shade. As they are on range during the season of the year when the sun's rays are the hottest, they should receive some protection from this intense heat. Birds that haven't this protection will either be killed as the result of a sunstroke or will be stunted and poorly developed at maturity. Natural shade is the best, and any location such as the farm woodlot, an orchard, or a field with a few scattered trees and heavy plant growth is ideal. Where there is no natural shade, some sort of shelter from the burning rays of the sun should be provided. This can be done by planting some quick growing, rigorous crop, such as corn, sunflowers, or any other crop which will give a luxuriant growth. It may often be necessary to provide artificial shelter for the birds in addition to the above method of supplying shelter or where it is impossible to grow a good shade crop. Shelters may be made by supporting branches of trees a few feet above ground—about three and a half to four feet—or by using boards or muslin frames instead of branches.

Housing

In housing the birds, one of the main principles to be observed is that of fresh air. The house must be well ventilated. If it is stuffy, the vitality of the stock will be weakened and will show up to a great disadvantage in the fall laying flock. The front should be entirely open, with a muslin curtain which can be lowered in very rainy weather. Don't crowd the birds. It is not advisable to put more than 50 chicks in a 6x8 foot house. There should be several such houses so the birds will be able to distribute themselves among them. Many will roost outside in the trees most of the summer. After moving the stock into these small range houses, they should be confined for a day or two so that they will become accustomed to their quarters and know where to go for shelter. As far as possible, the house used on range should be portable so that it will be an easy matter to hook up a team and move it from place to place. This will be found especially valuable when the ground around the house becomes filthy from the birds' droppings and it is desirable to change the location of the house. Also, such a house may be used as a colony brooding house, a range house, and later on in the fall, as a colony laying house.

Rations

Feeding is one of the important questions in the management of growing stock and should receive a great deal of attention. The war ration, as recommended by the eastern colleges of the United States, is very good and consists of a scratch ration fed morning and night of: Cracked corn, 5 parts; feed wheat, 1 part; heavy oats, 2 parts; barley, 2 parts. This is supplemented by a dry mash, kept before the birds at all times, of equal parts of wheat bran, wheat middlings, corn meal, gluten feed, ground oats and meat scrap.

See that all hoppers are kept clean and the mash not allowed to get moldy. A hopper is a good thing, allowing a number of chicks to feed from it at the same time and protecting them from the hot rays of the sun. As far as possible, set the hoppers as well as the water fountains in the shade. Water fountains should be kept in the shade to keep the water as cool as possible. Clean them out at least every other day, don't allow the water to become stale. Fresh water in abundance should be kept before the young stock at all times. Wherever possible, have water piped to the range—it saves a lot of lugging. If it is not possible, have a number of fountains easily accessible to the birds at all times. If they are small, they will have to be refilled very often.

Separate Sexes

Sexes should be separated before placing the birds on range, keeping the cockerels in a yard by themselves. If they are allowed to run with the pullets, they will continually annoy them and will thus tend to retard the development of the females. A thoro inspection of the range should be made at least once a week to remove the carcasses of any birds that may have died. If these carcasses are allowed to remain on the range, they will decay and the birds will get to picking at them, with the result that a large part of the flock will die suddenly, due to ptomaine poisoning.

QUERIES

Gapes

"I would like to know if you can tell me how to cure or prevent gapes in chickens and geese. We have a great deal of trouble in this way. I hatched 40 or 50 geese and they all died with gapes. When I examined them I found the windpipe full of little worms."—Mrs. R. H., York Co., Pa.

An ounce of prevention is worth a ton of cure in the matter of gapes in poultry. It is well known that the germs or little worms are picked up from the soil, lodge in the throat and continue growing in the windpipe until the chick suffocates. Ground that is infested by previous flocks should be avoided. Soil upon which chickens have not run is scarcely ever infested. If the soil is spaded up several inches deep and a liberal application of slacked lime applied it often prevents trouble. A method followed by many is to put the little chicks out on locations where little chickens have not run heretofore, keeping them there until half grown. Still another way is to confine them for several weeks in little yards having a clean board floor. It is well to cover the floor with clean sand, but not with soil from the premises.

The only remedy at all effectual is individual treatment by inserting a double and twisted horse-tail hair into the windpipe, twisting it between the thumb and finger and withdrawing it. This will gather the worms and they may then be drawn out. It is only a last resort and is not practical on a large scale.

Live Stock

WOOL MARKET REGULATIONS

As previously announced, the war industries board has fixed the price of the 1918 wool clip at the prices established July 30, 1917, at Atlantic seaboard markets on the scoured basis. Further details of regulation were announced May 20, including the following:

The government is to have prior rights on the clip for its needs at those prices and the remainder is subject to allocation for other uses under the direction of the board. Distributing centers have been approved at which wool may be distributed only. For fleece wool the centers will be Boston, New York, Philadelphia, Chicago, St. Louis, Detroit, Louisville, Baltimore and Wheeling, W. Va. The only exception is that clips of 1,000 pounds or under may be sold by the owner. Fleece wool will be considered as that grown east of the Mississippi.

Approved dealers will be entitled to a gross profit in no case to exceed one and one-half cents per pound on the total season's business, this profit to cover all expenses from grower to loading wool on board cars. The grower shall receive fair prices for his wool based on the Atlantic seaboard price as established on July 30, 1917, less the profit to the dealer, as stated above, and less freight to seaboard, moisture shrinkage and interest. In no case shall this be construed to mean that there shall be more than one and one-half cents gross profits made from time wool leaves growers' hands until it arrives at the distributing center.

Growers who desire to do so will be allowed to pool their clips in quantities of not less than minimum carloads of 16,000 pounds and consign the wools so pooled as one account to any approved dealer in any approved distributing center. Growers are urged to adopt this latter course thru county agents or others, thus eliminating the profits of one middleman.

In addition to these prices, the Government is to pay a further sum equal to 4 percent of the selling prices to cover compensation or commission to approved dealers for their services in collecting and distributing wool. On wool not taken by the Government for its own use, and which may be allocated for other uses, prices will also be fixed in accordance with July 30, 1917, values at Atlantic seaboard markets, and on such wool approved dealers shall be entitled to a commission or compensation of a sum equal to 4 percent of the selling price and this commission or compensation shall be a charge against the wool and shall be collected from the manufacturer to whom the wool is allocated.

The grower shall be entitled to receive and advance up to, but not exceeding, 75 percent of the fair estimated market value of his wool.

Awaiting Complete Regulations

Government agents in wool-producing sections have been notified that buying will not be permitted until complete regulations are released. Fleece regulations are being printed and as soon as released buying may commence.

BUTTER MILK DANGEROUS TO BROOD SOWS?

"Subscriber," Union Co., Pa., writes: "In your April 20 issue you had an article discussing the care of the brood sow. Under suitable feeds for the brood sow are enumerated mineral foods and tankage or butter milk and skim milk. These are advised for feeding to the sow. I have no objection to any of these feeds except butter milk, which I know for certain is dangerous. I know that one pint of butter milk will make the sow lose her brood, and in most cases it will mean the death of the sow."

The belief that butter milk is dangerous to brood sows does not seem to be borne out in feeding tests. Many experiment stations report on the feeding value of butter milk for hogs, giving it about the same feed value as skim milk, but we have never heard authenticated reports of the injury here warned against when the butter milk was in good condition. If allowed to ferment in dry receptacles, the butter milk is dangerous. We would be glad to have the actual experience of readers who have fed butter milk extensively.

Good Berkshire Mother With Litter of Eight

GOOD BERKSHIRE LITTERS

Berkshires, as a breed, have the reputation of farrowing small litters, yet the fault, if such is the case, lies mostly with the feeder. Berkshires are very easy keepers and for this reason are especially likely to be kept in an over-fat condition. This in any breed will tend to the farrowing of small litters. The sow in illustration is shown with eight thrifty little fellows. The preceding litter numbered ten.—R. S. Good, York Co., Pa.

GET RID OF LICE

When you see your hogs rubbing against fences, trees and every convenient corner; when they don't gain and are restless; when their hair is rough, and their skin diseased, it is a 10-to-1 chance that they are infested with lice. Examine them and if you find lice, get busy with crude oil. Use this liberally. If you have a dozen or more hogs, it will pay you to purchase a hog oiler and let your hogs oil themselves. They will soon rid themselves of the pests. These hog oilers allow the hogs to rub the oil on the itchy, lousy parts and bring sure death to the lice and no harm to the hogs. Many hog raisers play safe and keep the hog oilers in their hog lots the year round.—W. E. F.

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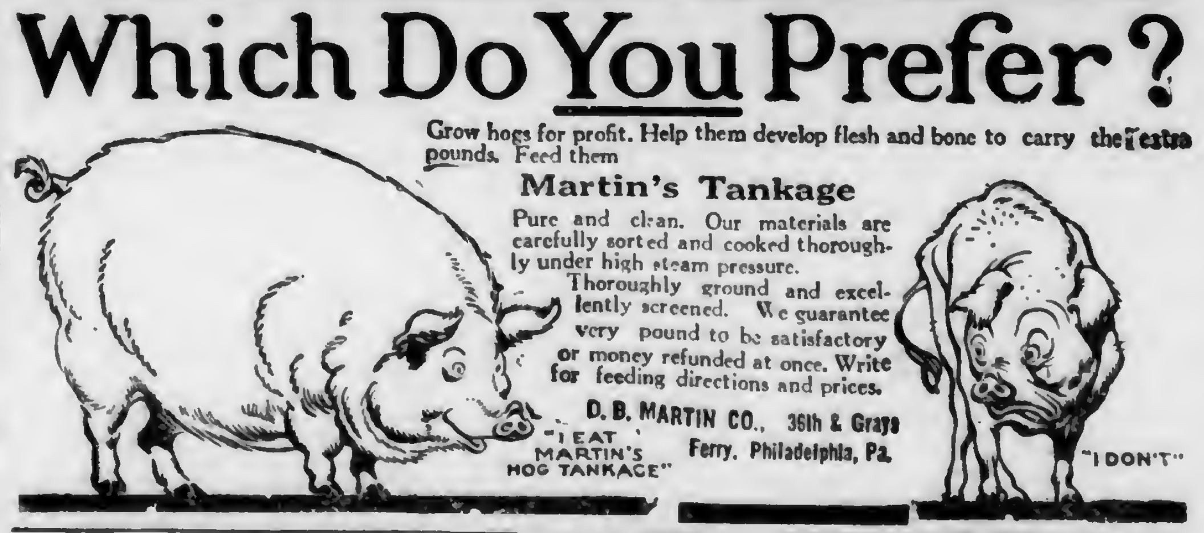

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 27, 1918.

Notwithstanding the fact that this week has seen very heavy offerings of new potatoes, prices have held up remarkably well. On Monday there were 48 cars of new potatoes unloaded at West Philadelphia Market House depot. While the bulk of the supplies were from Florida, there were quite a number from South Carolina in the offerings. Best No. 1 barreled stock from both states was selling at $4.50@5 per barrel, mostly $4.75@5, with No. 2's from $2.75@3.75 as to quality. Florida potatoes in 150 pound sacks sold all the way from $3.25@$4 and No. 2's from $2@2.75. Bushel boxes sold from $1@$1.25, and hampers from $1@1.15. Old potatoes also rule strong and active, with prices from 10@15c per cwt. higher than last week, sales ranging generally from $1.25@1.50 per cwt. as to quality.

Sweet potatoes are in very large supply, the few remaining meeting a good demand at around $2.50 for prime, and $1.25@1.60 for seconds and mediums.

Vegetables

Supplies of asparagus from nearby Pennsylvania and New Jersey points continue to arrive freely every day, but under a good demand and movement the market continues firm and active on all fancy stock. There is, however, a wider range in quality, and consequently in value. Collossal, 20@27c per bunch; fancy, 15@22c; prime, 10@17c; culls, 7@12c. Maryland and Delaware asparagus remains 8@22c per bunch. There has been quite a decline in the bean market, both green and wax selling at much lower prices than last week. Many of the arrivals are very poor, spotted and heated, making a very irregular market. Green beans are selling all the way from 75c@$2.25 per hamper, and wax beans from $1@2.50, according to condition and quality. Some beans have arrived in such poor and heated condition as to be practically worthless. Dried beans continue in ample supply. While prices are showing practically no change, the movement is very slow and the market is dull and weak. Marrows are quotable from $13.50@14 per cwt; pea and medium, $12@13; red kidneys, $12@13.50. Artichokes are showing no change, selling generally at $4@4.75 per drum, mostly $4.50@4.75. New beets are more plentiful and lower. At the same time the market is active at prevailing prices. Fancy is selling quickly at 4@5c per bunch, with poor and heated lower. Under the light supplies, old carrots are firm and higher at $3@4 per bbl. New carrots from nearby Pennsylvania and New Jersey points have made their appearance on the market and are selling at 3@4c per bunch

There is no change to be noted in the cabbage market. Best Virginia and Eastern Shore crates are selling from $1.50@1.75, with poor from $1.25@1.50. Following the slump in cucumbers, as noted in these columns last week, the market has reacted and fancy southern cucumbers are now selling from $3@4.25 per hamper, with choice from $1.75@2.50. A little sweet corn has made its appearance on the market and has sold from $3.50@4 per crate. Egg plants are quite a little lower than last week, prices ranging generally from $3@3.75 per crate. Nearby Pennsylvania and New Jersey kale under more liberal supply is now selling from 40@50c per box. Practically all the lettuce now on the market is being supplied from nearby Pennsylvania and New Jersey points. Pennsylvania stock has been selling from $1@3 as to quality, and New Jersey from 75c@$2.25. Mushrooms are weaker at 25@40c per pound. The onion market has been dull and draggy. A decline in prices, however, seems to have stimulated the movement. At this writing sales are being made all the way from 75c@$1.50 as to quality. New Jersey peas have made their appearance on the market since our last report and have been selling all the way from $1.25@1.65 per basket. Southern peas are neglected unless strictly fancy and prices on same are ranging from $1@2.25 per hamper as to condition. Parsley is very firm under light supplies. Southern barrels are selling from $6.50@7, and nearby from 3@5c per bunch. Peppers are a little more plentiful and the market is lower, ranging all the way from $2.50@4 per crate as to quality. Radishes from nearby Pennsylvania and New Jersey points and unless strictly fancy are moving very slowly. with prices ranging from 1@2c per bunch. Pennsylvania rhubarb is showing very little change from last week, best selling from 2@3c per bunch. Scullions are very plentiful, some of them are poor in quality and prices range from 50c@$1 per 100. Pennsylvania and New Jersey spinach, after having been a glut on the market for several days, is now showing some improvement with boxes selling from 25@50c and ⅝ bushel baskets from 10@25c. Strictly fancy tomatoes are scarce and when here are selling from $4@5 per crate for 144 size and $3@4 per crate for 180 size, with the Gems or 216 size selling at $2.50@2.75. There are, however, many poor, spotted and wasty tomatoes on the market which are selling all the way from $1.50@2.50 as to size and quality. Watercress is meeting a slow demand at 1½@2c per bunch.

Fruits

The past week has been a decided drop in the strawberry market, and the high prices that had been prevailing all season are now a thing of the past. Supplies had been very plentiful from nearby New Jersey. Maryland and Delaware points and these berries are selling mostly from 8@10c per quart, with a few extra fancy at 12@13c and some poor and weak as low as 6c. There has also been several cars of berries from Kentucky on the market this week, best of which are selling at 9@11c per quart, with poor at 6@7c. A few cherries from Virginia are making their appearance, the first arrivals selling from 30@35c per quart for the white variety and 40c for the black cherries. These prices will, of course, decline rapidly as the supplies increase.

Poultry

The market on live fowl is firm, active and higher. Supplies are moderate and cleaning up promptly at 31@32c per pound. Spring chickens are gradually increasing in supply and the market is gradually easing off. Sales are being made generally from 55@62c per pound. It is not expected, however, that these high prices will long be maintained, as an easier tone is now in evidence. Staggy rosters are about steady at 23@26c and old roosters from 21@23c. Ducks are about steady at 26@30c, as to variety.

Eggs

Since our last report the egg market seems to have touched bottom and a reaction is now taking place. Prices are showing a little advance, being about 2c per dozen higher than at this time last week. Nearby current receipts are now selling at 34c; nearby firsts, 35½c; Western firsts, 34c; Western extra firsts, 35½c. The demand and movement are good and the market is ruling firm and active at the advance.

PITTSBURGH PRODUCE

Pittsburgh, Pa., May 27, 1918.

The volume of country produce moving is large and high prices are still received for many descriptions. In fruits there is a steady call for strawberries and apples. The movement of vegetables includes white potatoes, peas, beans, onions, tomatoes, cabbage, celery and various other lines.

Asparagus, southern, $2.50@3.50 box; do., home grown, 75@90c per bundle. Beans, green, $2@2.50 hamper. Beets, $1@1.25 hamper. Cabbage, $25@30 ton; do. new, $1@2.25 crate. Carrots, new, 90c@$1 basket. Cucumbers, $3.50@4 hamper. Horseradish, $5.50@6 bbl. Lettuce, southern, $1.25@1.75 hamper; do. leaf, 10@20c bkt. Onions, $1.50@1.75 sack; yellow, $1.65@1.75. Peas, $2.50@2.75 hamper. Potatoes, old, $2@2.15 sack; do., new, $3.25@4.75 bbl; do., sweet, $1.90@2.10 hamper. Radishes, 20@30c doz. Rhubarb, 20@25c bundle. Spinach, 30@35c bu. Tomatoes, $4.75@6 crate. Apples, $5@7.50 bbl. Strawberries, $6@6.25 crate; do., fair, $5@5.75.

Poultry is in demand and is quoted at rather high prices. Farmers are holding hens on the farm in expectation of higher prices and for the eggs they are producing. The demand for turkeys is light, while there is a very good demand for fresh dressed ducklings. Geese are little called for, while fancy squabs sell readily.

Live Poultry.—Hens, 20@22c lb; springers, 32@35c; roosters, 20@22c; turkeys, 25@28c; ducks, 28@30c; geese, 20@22c; guinea hens, $1 pr.

Dressed Poultry.—Hens, 33@35c lb; springers, 35@40c; turkeys, 38@40c; ducks, 35@36c; fowls, 38@40c.

Elgin prints, 45½@46c; Elgin tubs, 45@45½c; New York cheese, 28@30c; do., Swiss, 32@33c. Selected eggs, 36@37c; eggs at mark, 33@35c.

Grain and Hay.—No. 2 yellow ear corn, $1.90@1.95 bu; No. 3 yellow shelled, $1.75@1.80; No. 2 white oats, 84@84½c; No. 3 do., 82½@83c bu; standard oats, 83½@84c bu; No. 1 timothy hay, $24@24.50 ton; No. 2 do., $22@22.50. No. 1 light mixed, $21@22. Rye straw, $14@14.50. Oat straw, $11@11.50. Wheat straw, $11@11.50.

BALTIMORE PRODUCE

Baltimore, Md., May 27, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1@1.25 cwt; do., New York, $1@1.25. Sweet potatoes, yellow, $6@6.50 bbl; $1.75@2 hamper. Asparagus, $1.50@2.25 doz. Beets, 3@5c bch. Cabbage, new, $1@1.50 crate. Cucumbers, $2.50@3 crate. Lettuce, 40@50c basket. Onions, yellow, $1.50@1.75 cwt; spring, $1@1.25 per 100 bchs. Radishes, $1@1.25 basket. Tomatoes, $2.50@4 crate. Rhubarb, $2 per 100.

Fruit.—Strawberries, 8@12c; Eastern Shore, 6@8c.

Butter.—Creamery, western, fancy, 46@47c; choice, 44@45c; pound prints, 47@48c; do., firsts, 44@45c. Nearby creamery, 41@42c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 31@32c.

Eggs.—State, Pennsylvania and nearby, 33c; Easter Shore and Virginia, 32c; Southerns, 32c.

Live Poultry.—Chickens, 30@35c; do., springers, 55c@60c; old roosters, 18@20c; ducks, 23@26c; pigeons, 35@40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $31@31.50; standard timothy, $30@30.50; No. 2 timothy, $29.50@30; No. 1 light clover mixed, $29.50@30; No. 2 light clover, $28.50@29. No. 1 clover mixed, $28.50@29; No. 2 $26@28. No. 1 straight rye straw, $16.50@17. No. 1 tangled, $15.50@16; wheat straw, $14@15; oats straw, $15@16.50.

Grains.—Wheat, bag lots, $2@2.14 bu. Corn, bag lots, white, $1.65@1.70 bu; yellow ear corn, $1.60 bu. Standard white oats, 80½@81c; No. 3 white, 79@80c. Rye, No. 2 western, $1.90@2.01; bag lots, $1.50 bu.

LANCASTER PRODUCE

Lancaster, Pa., May 27, 1918.

Asparagus in great quantities was offered on the markets today, but despite the only fair demand, prices failed to drop and the choicest bunches sold for 8 and 10 cents. The market was also glutted with strawberries. Home-grown berries were offered in small quantities and sold rapidly for 25@30 cents per box. Eggs advanced to 37@38 cents per dopen, some sales late in the day being reported at 35 cents.

Butter and Eggs.—Creamery butter, 55c per lb; country butter, 50c; fresh eggs, 35@38c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 10c per bunch; spinach, 20c ½ pk; new peas, 40c ½ pk; new beans, 25@30c ½ pk; tomatoes, 20c box; lima beans, 20c pint; lettuce, 12@15c head; sweet potatoes, 25@30c ½ pk; new potatoes, 25@30c ½ pk; old potatoes, 40@75c per bu; do., 8@12c ½ pk; apples, 35@40c ½ pk; strawberries, 30@35c box

Grain Market.—Milling wheat, $2.05 per bu; rye, $1.90; oats, 80c; shelled corn, $1.40; No. 1 timothy hay, $20 per ton; mixed hay, $18; wheat straw, $17; oat straw, $10.

YORK PRODUCE MARKET

York, Pa., May 27, 1918.

This week saw the first York County strawberries displayed in the city markets. The price dropped suddenly from 40c last week for shipped ones, to 15c for the home product. The outlook is not good for a large crop. A few cherries are offered. This fruit will also be very short thruout the county.

Eggs.—28@32c per dozen.

Butter.—Country, 45@48c lb; separator, 48@50c lb. Milk, 10c quart.

Poultry.—Hens, 23@25c lb; springers, 40@45c lb; dressed, 75@$1.75 each.

Vegetables.—Potatoes, 8@12c ½ pk; 35@65c per bu; asparagus, 5@8c bch; new potatoes, 25@35c ½ pk; cabbage, 5@12c hd; lettuce, 3@7c hd; beets, 3@5c bx; radishes, 2@5c bch; onions, 3@5c bch; lima beans, 18c pt; soup beans, 15c pt; corn meal, 10@12c qt; turnips, 15@20c ½ pk.

Fruit.—Apples, 15@40c ½ pk; strawberries, 15@25c bx; currants, 10@12c bx.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.10; rye, $2.15; bran, $2.50 cwt; middlings, $3 per cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.60; oats, $1; rye, $2; bran, $48 per ton; middlings, $57 per ton.

NEW YORK PRODUCE

New York City, May 27, 1918.

Trade in butter is steady but quiet. Eggs are meeting a fair demand at steady prices. Good poultry sells readily. Strawberries are arriving plentifully. New potatoes slow.

Butter. — Creamery, extras (92 score), per pound, 43¼c; higher score, 43¾@44¼; thirds to firsts, 35@44; state dairy, 35@42½; ladles, 30@33c.

Cheese.—Colored specials, 25½@26c; daisies, 25@25½c.

Eggs.—Fresh gathered extra, 36@37c; extra firsts, 34½@35½c; nearby white, fine to fancy, 40@41c; ordinary to good, 37@38c; browns, 38@39c.

Vegetables and Greens.—Asparagus, fancy $2.25@2.75 doz. bchs; prime, $1.50@2; culls, $1.25. Beets, per bbl. $1@2. Onions, per 100-lb. bag, 50c@$2. Potatoes, Jersey, $1.75@2 per 100 lbs. Carrots, $1.25@2 per barrel. Scullions, per 100 bchs., $1@2; spinach, per bbl., 25c@$1.25.

Apples.—Baldwin, $4@8; Ben Davis, $3.50@5.50.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 27, 1918.

Beef Cattle.—There was a fairly active demand for steers and the market ruled firm and higher under light offerings. Bulls and cows were well cleaned up at full figures. Calves met with fair sale and values were well maintained.

Steers, good to choice, $16@17.50, fair to good, $15@16; common to fair, $13.50@15; bulls, fair to good, $11@13; common to fair, $9@11; cows, fat, per lb., choice, 9@11½c; fair to good, per lb., 7½@9c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $16@16.50; fair to good, $14@15; common, $10@12; Tennessee and southern, $8@13.50.

Sheep and Lambs.—Demand was fairly active and values were well maintained under moderate offerings.

Sheep, sheared, wethers, extra, $14.50@15; good to choice, $13@14; medium, $10@11; common, $6@8; lambs, sheared, heavy, fat, $12@12.50; choice, $17.50@18; medium, $15@16; inferior, $10@13.

Hogs.—Western advices were stronger and prices here were sympathetically higher under moderate offerings and a fairly active demand. Quotations for best western, $19.50.

City Dressed Stock.—The market for steers, heifers and cows ruled firm under moderate offerings and a fairly active demand. Other descriptions were firmly held.

Steers, 22@28c; heifers, 22@25c; cows, 18@23c; calves, 24@25c; southern and barnyards, 16@20c; country dressed, 20@22c; sheep, choice, 28@29c; lambs, 34@35c; hogs, 25¾c.

LIVE STOCK MARKETS

Lancaster, Pa., May 27.—Cattle.—Receipts, 615 head, against 1,055 head last Monday; market fairly active, prices steady, yards cleared; good to prime fat steers, $14@15.50; medium to good steers, $13.50@14.50; common to medium steers, $11.25@12.90; good to prime fat bulls, $11.25@13; medium to good bulls, $11@12.25; common to medium bulls, $9.90@11; good to prime fat cows, $9@10.25; medium to good, $8.25@8.75; common to medium, $7@8; medium to good bologna bulls, $5.25@6; common grade bologna bulls, $5@5.75; calves, best grade, 14@15c per lb; plain, 10@12¼c.

Hogs.—Receipts, 173 head; market slow; prices lower; best grades, $18.50@19; roughs, $16.25@16.75.

New York City, May 27.—Beeves.—Receipts, 2,490; steady; steers, $13@17.25; bulls, $9@14; cows, $5.50@14.

Calves.—Receipts, 8,300; weak, veals, $12.50@16.25; culls and little calves, $10.50@12; skim milk calves, $10@11.

Sheep and Lambs.—Receipts, 4,330; weak; sheep, $7@15; spring lambs, $20@23.50; clipped lambs, $13@16; wool lambs, $20@21.

Hogs.—Receipts, 5,800; market lower, at $18.25@18.50; roughs, $16.50.

Pittsburgh, Pa., May 27.—Cattle strong; supply fifty loads; prime, $16.50@17.

Sheep.—Lower, supply 15 double decks; prime wethers, $13.50@14.25; culls and common, $6@9; lambs, $10@17; veal calves, $15@15.25.

Hogs.—Lower; receipts, 40 double decks; prime heavies, $17.40@17.50; mediums, $18@18.10; heavy and light yorkers, $18.10@18.15; pigs, $18.15@18.25; roughs, $14.50@15.25.

Baltimore, Md., May 27.—Lambs and Sheep.—Choice, fat sheep, 10@12c; fair, 6@8c; inferior, rough, head, $2.50@4; old bucks, as to quality and condition, 8@10c; spring lambs, fat, 18@20c; do., poor to fair, 15@18c. Beef Cattle.—Young, fat steers, prime, 11@12c; steers, 1,000 pounds, 9@10c; oxen, 7@9c; bulls, 8@9c; large young cows, in good order, 7@8c; cows, poor to medium grades, pound, 4@5c; fresh cows with calf, head, $40@75; poor, thin, meadow stock, 4@5c.

Live Pigs.—What demand prevail for pigs is centered on large-sized, sleek pigs. Small, half-grown are dull and overlooked. Pigs, as to size and condition, $4@6 each; shoats, as to size, $6@8.

Calves.—Choice, handy-weight veals, 16c; do., heavy, fat veals, 15c; good veals, 15c; heavy, smooth, fat calves, head, $18@20c; heavy, or rough calves, head, $14@16; small, thin calves, per head, $8@10.

NEW YORK HAY AND GRAIN

New York City, May 27, 1918.

Feed.—Prices for all qualities failed to display important changes on Saturday. The usual half-holiday market prevailed, and, as the season is over, no special activity in the way of new business is expected for some time. Mills are making contract deliveries as fast as possible, this being especially true of linseed meal, and were it not for this stocks would undoubtedly show important accumulation. Business is possible for prompt Western shipment at about $50 per ton. Barley feed was unsettled for a time and oats feed was also in the same position, but of late offerings have been reduced materially. Corn feed meal holds strong, and there is not much for sale. Quotations (prompt Western shipment): Rye middlings, $53; oat feed, $19 per ton; barley feed, $43.50; linseed meal, per ton, $50; corn feed meal, $55.50 per ton.

Hay and Straw.—There are moderate offerings of better grades of hay at all terminal points and prices are steady on such. On medium and low grades market still favors buyers and there is little opportunity to move the liberal offerings of more or less unsound damaged hay

Hay.—No. 1, prime, $28@30; No. 2, $25@27; fancy clover mixed, $25@27.

Straw.—No. 1 rye, $18.

Corn.—No. 3, no quotations.

Oats.—No. 2, white, 81@81½c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., May 27, 1918.

Baled Hay and Straw.—Receipts, 12 tons of hay. Desirable grades of hay were kept well cleaned up and firm. Straw was in moderate supply and quiet, with little change in prices.

Timothy hay, according to location—No. 1 large bales, $30; No. 1, small bales, $30; No. 2, $27@28; No. 3, $22@24; sample, $15@18; no grade, $10@15; clover-mixed hay. light mixed. $27@28; No. 1 do., $25.50@26.50; No. 2, do., $18@20.

Straw.—No. 1 straight rye, $20.50@21; No. 2 do., $19.50@20; No. 1 tangled rye, $18.50@19; No. 2 do., $17.50@18; No. 1, wheat straw, $17.50; No. 2 do., $16.50; No. 1 oat straw, $17.50; No. 2 do., $16.50.

Corn.—No. 2 yellow, $1.70@1.72.

Oats.—No. 2 white, 83½@84c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., May 27, 1918.

Butter.—The market was quiet and showed no important change. The Produce Exchange was closed and there was virtually no wholesale trading on the street.

Western, fresh, solid-packed creamery, extras, 44½c; high-scoring goods, 45½@46½c; extra firsts, 43½@44c; firsts, 42@43c; seconds, 39@41c; sweet creamery, extra, 45½c; under grades, 41@45c; nearby prints, extra, 49c; jobbing sales of fancy brands, 50@52c; fair to good, 43@47c; garlicky, 35@40c.

Receipts, as compiled by the Bureau of Markets, 3,114 tubs of butter and 2,733 cases of eggs.

CHEESE MARKET

Watertown, N. Y., sold 4,300 boxes May 25, at 21¼c. At Cuba and Salamanca quotations rule at 22⅛c.

NEW YORK MILK MARKET

New York City, May 27, 1918.

The market is approaching the maximum flush period and a considerable surplus is being manufactured. The distributors and producers do not seem to be satisfied with the method of making rates without the aid of the Federal Milk Commission, despite the drop of 66 cents which the distributors will pay to the producers in June. The Commission has provided a balance wheel whose value is now recognized. The distributors and producers are hoping and expecting to be able to get together under its operation in time for the fixing of July rates. The rates for June as agreed upon by the distributors, condensers, etc., with the Dairymen's League to the producers of Grade B in the first district are $1.80, for 3 percent milk; $2.04, or approximately 4.33 cents a quart, for 3.6 percent; and $2.20 for 4 percent.

Receipts of milk and cream in 40-quart cans for week ending May 25th were as follows:

Railroad	Milk	Cream
Erie	42,444	3,706
Susquehanna	5,734	47
West Shore	11,140	1,150
Lackawanna	68,720	2,110
N. Y. Central (long haul)	134,099	3,686
Ontario	41,762	7,694
Lehigh Valley	51,743	2,825
New Haven	5,010	50
Pennsylvania	11,390	275
Other Sources	7,430	235
Totals	379,472	21,778
Same week last year	391,903	19,323

Aunt Peggy's Talks

Child Welfare

The great world's war and its varied activities have so detracted the attention and interest of the people from the ordinary activities that in many instances home duties and home charities have been neglected. Settlement workers and charity organizations have felt this very much during the past two years. The figures show that child mortality was greater during the past year than it has been for many years. A great part of the increase is attributed directly to greater neglect of children. A case in mind, probably an extreme one, is of a woman who spent every afternoon at a sewing club, leaving her three children who were from four to eight years of age to shift for themselves. They were not only exposed to physical dangers on the street, but also to bad influences which at last produced such an effect as to attract the attention of the over-enthused mother. She at last dropped all her outside interests and is attempting to undo what has been done in her home, but with poor success. How much better it would have been to have remembered in time that she was first a mother and secondly a charity worker.

We are awakening this year to the fact that we must take care of the babies as well as the newer activities and there has been inaugurated a movement to make this Child Welfare Year. We in the country must not think this is exclusively for the children of the cities. We need the same care for children of the country. Of course, we realize that natural conditions are much better in many respects in the country, but teachers and inspectors find that the city children are better looked after in many respects than are country children. This is especially true as to physical defects. The law requiring examination for eye, ear, nose, throat and teeth defects, and the application of proper treatment is better carried out. All this is done at public expense if parents are not able to do it themselves.

Many a child is considered dull or vicious and does not get along well in school simply because of bad eyes, adenoids, dull hearing or some other curable ailment. We, as mothers, should look after these things most carefully. And we must not stop with our own children; there may be others in our neighborhood who are less interested or careful and who do not realize the importance of these things. Make this a part of your grange or club work and try to impress its importance upon all mothers. Only by such care can we develop a strong physical foundation in the children of our neighborhood.

When people have good health and strong bodies, moral questions will not be so hard to solve. All this helps to create a better state of society, and as each neighborhood is improved that in turn helps the state, the nation and the world.

Cold Water Canning

I read with much interest the directions for canning vegetables in Pennsylvania Farmer of May 18. It is not many years since the practice of canning food was started. The first work was done chiefly with fruits and later the canning of vegetables was begun. I have always had as good success with vegetables as with fruits, altho the process varies more with vegetables than with fruits. We enjoy the varied diet which they afford thru the months when they are not in season.

One of the easiest things to can from the garden is rhubarb. I have canned this appetizing vegetable for several years by the cold water method and have never lost a can. The process is as follows:

Cut the rhubarb as for cooking or for pies; pack uncooked in sterilized jars, fill to overflowing with pure, cold water, seal and run hot parafine around the lid. This makes delicious sauce in winter, either when combined with apples, dried or green, or used alone in pies. In cooking fresh rhubarb, I cover with cold water, let it come to a boil, drain, add sugar and cook until soft. Less sugar is required by this method, and much of the acid is carried off in the first water.—Peggy Norwood.

DELICIOUS STRAWBERRY PIES

Two-Crust Pie

Make a flaky crust, glazing the bottom crust with unbeaten egg white to prevent soaking. Make the crust according to the directions given below for war-conservation pastry. Thickening the juice with corn starch is sometimes resorted to, but it makes a juicier, more delectable and attractive pie not to thicken the juice very much, using only a little flour sprinkled on the under crust. Fresh berries served with each piece add to the attractiveness of the serving.

Meringue Pie

Cook the berries, thicken the juice with 1 level tablespoonful of cornstarch per quart of berries (dissolve the cornstarch first in cold water). Sweeten with 1 cup of sugar per quart of berries. After the filling has set, cover it with a meringue and set the pie back into the oven for the meringue to brown.

White Summer Suit, With Black Trim

(Photo By Underwood & Underwood)

Uncooked Berry Pie

A novel and delicious strawberry pie is made by putting uncooked berries in a baked crust, sifting sugar over them, and then mixing a sweetened meringue among them, covering them well with it, then setting in the oven to set and brown the meringue.

War Pie Crusts

Since corn flour, rice flour and potato flour are very similar to the wheat pastry flour, in that all of them are largely starch with almost no gluten, they can be used interchangeably fairly well. However, pastry made with corn, rice, rye, barley or potato flour or with cornmeal cannot be rolled as thin as that made with wheat flour.

Whipped Cream Berry Pie

Similarly, whipped cream may be mixed among the berries, but of course this can not be set in the oven as with the meringue pie.—H. M.

PRESERVING THE LIFE OF THE ICE-BOX

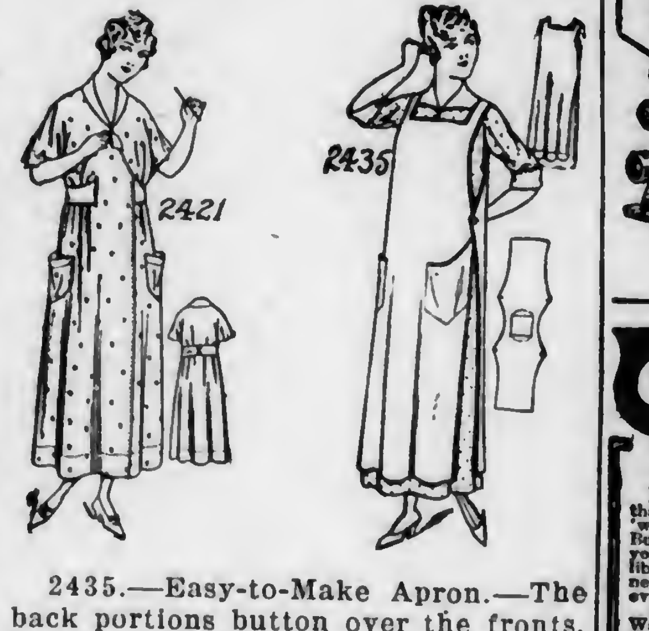
Our zinc-lined ice-box of venerable age began to leak. This was going to make the wood decay in short order. Otherwise the refrigerator was too good to discard, so I cut pieces of muslin to fit the bottom and sides of the cupboard, having them overlap. Then I painted the zinc, being careful to cover every portion of it thoroly. Then I painted one side of the muslin, and laid it on the painted zinc, fitting it down smoothly onto the freshly painted surface. Then I left the ice-box out in the yard for a couple of days to get the paint thoroly dry. Then I gave the top of the muslin a good coat of paint, and let that get dry. And behold I had a rejuvenated ice-box ready to do service again, which it has continued to render with satisfaction since 1915, it revival year. A leaky dish-pan was similarly treated with paint and muslin, and is used for my dish drip pan.—Mrs. Elizabeth O. Jean, Baltimore Co., Md.

As a matter of economy consider the possibilities of the old-fashioned way of buying foods in bulk. Package goods have their value, but in these days it may not be good buying to pay for the package.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

2421.—Serviceable Work Dress.—The closing is reversible. The belt ends hold the fulness over sides and back, at waistline. Pattern is in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 6 yards of 36-inch material. Price, 10 cents.



2435.—Easy-to-Make Apron.—The back portions button over the fronts. Pattern is in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. A medium size requires 4⅝ yards of 36-inch material. Price, 10 cents.

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Two Pairs of Shoes

By Joseph C. Lincoln

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I don't exactly know why Cap'n Jonadab and me went to the post-office that night; we wa'n't expecting any mail, that's sartin. I guess likely we done it for the reason the feller that tumbled overboard went to the bottom—'twas the handiest place to go.

Anyway we was there, and I was propping up the stove with my feet and holding down a chair with the rest of me, when Jonadab heaves alongside flying distress signals. He had an envelope in his starboard mitten, and, coming to anchor with a flop in the next chair, sets shifting the thing from one hand to the other as if it 'twas red hot.

I watched this performance for a spell, waiting for him to say something, but he didn't, so I hailed, kind of sarcastic, and says: "What you doing—playing solitaire? Which hand's ahead?"

He kind of woke up then, and passes the envelope over to me.

"Barzilla," he says, "what in time do you s'pose that is?"

'Twas a queer looking envelope, more'n the average length fore and aft, but kind of scant in the beam. There was a puddle of red sealing wax on the back of it with a "D" in the middle, and up in one corner was a kind of picture thing in colors, with some printing in a foreign language underneath it. I b'lieve 'twas what they call a "coat-of-arms," but it looked more like a patch-work comforter than it did like any coat ever I see. The envelope was addressed to "Captain Jonadab Wixon, Orham, Mass."

I took my turn at twisting the thing around, and then I hands it back to Jonadab.

"I pass," I says. "Where'd you get it?"

"'Twas in my box," says he. "Must have come in to-night's mail."

I didn't know the mail was sorted, but when he says that I got up and went over and unlocked my box, just to show that I hadn't forgot how, and I swan to man if there wa'n't another envelope, just like Jonadab's, except that 'twas addressed to "Barzilla Wingate."

"Humph!" says I, coming back to the stove; "you ain't the only one that's heard from the Prince of Wales. Look here!"

He was the most surprised man, but one, on the Cape: I was the one. We couldn't make head nor tail of the business, and set there comparing the envelopes, and wondering who on earth had sent 'em. Pretty soon "Ily" Tucker heads over towards our moorings, and says he: "What's troubling the ancient mariners?" he says.

"Barzilla and me's got a couple of letters," says Cap'n Jonadab; "and we was wondering who they was from."

Tucker leaned away down—he's always suffering from a rush of funniness to the face—and he whispers, awful solemn: "For heaven's sake, whatever you do, don't open 'em. You might find out." Then he threw off his main-hatch and "haw-hawed" like a loon.

To tell you the truth, we hadn't thought of opening 'em—not yet—so that was kind of one on us, as you might say. But Jonadab ain't so slow but he can catch up with a hearse if the horses stop to drink, and he comes back quick.

"Ily," he says, looking troubled, "'you ought to sew reef-points on your mouth. 'Tain't safe to open the whole of it on a windy night like this. First thing you know you'll carry away the top of your head."

Well, we felt consider'ble better after that—having held our own on the tack, so to speak—and we walked out of the post-office and up to my room in the Travellers' Rest, where we could be alone. Then we opened up the envelopes, both at the same time. Inside of each of 'em was another envelope, slick and smooth as a mack'rel's back, and inside of that was a letter, printed, but looking like the kind of writing that used to be in the copybook at school. It said that Ebenezer Dillaway begged the honor of our presence at the marriage of his daughter, Belle, to Peter Theodosius Brown, at Dillamead House, Cashmere-on-the Hudson, February three, nineteen hundred and so forth.

We were surprised, of course, and pleased in one way, but in another we wa'n't real tickled to death. You see, 'twas a good while sence Jonabad and me had been to a wedding, and we know there'd be mostly young folks there and a good many big-bugs, we presumed likely, and 'twas going to cost consider'ble to get rigged—not to mention the price of passage, and one thing a' 'nother. But Ebenezer had took the trouble to write us, and so we felt 'twas our duty not to disappoint him, and especially Peter, who had done so much for us, managing the Old Home House.

The Old Home House was our summer hotel at Wellmouth Port. How me and Jonadab come to be in the summer boarding trade is another story and its too long to tell now. We never would have been in it, anyway, I cal'late, if it hadn't been for Peter. He made a howling success of our first season and likewise helped himself along by getting engaged to the star boarder, rich old Dillaway's daughter—Ebenezer Dillaway, of the Consolidated Cash Stores.

Well, we see 'twas our duty to go, so we went. I had a new Sunday cutaway and light pants to go with it, so I figgered that I was pretty well found, but Cap'n Jonadab had to pry himself loose from considerable money, and every cent hurt as if 'twas nailed on. Then he had chilblains that winter, and all the way over in the Fall River boat he was fuming about them chilblains, and adding up on a piece of paper how much cash he'd spent.

We struck Cashmere-on-the-Hudson about three o'clock on the afternoon of the day of the wedding. 'Twas a little country kind of a town, smaller by a good deal than Orham, and so we cal'lated that perhaps, after all, the affair wouldn't be so everlasting tony. But when we hove in sight of Dillamead—Ebenezer's place—we shortened sail and pretty nigh drew out of the race. 'Twas up on a high bank over the river, and the house itself was bigger than four Old Homes spliced together. It had a fair-sized township around it in the shape of land, with a high stone wall for trimming on the edges. There was trees, and places for flower-beds in summer, and the land knows what. We see right off that this was the real Cashmere-on-the-Hudson; the village folks were stranded on the flats—old Dillaway filled the whole ship channel.

"Well," I says to Jonadab, "it looks to me is if we was getting out of soundings. What do you say to coming about and making a quick run for Orham again?"

But he wouldn't hear of it. "S'pose I've spent all that money on duds for nothing?" he says. "No, sir, by thunder! I ain't scared of Peter Brown, nor her that's going to be his wife; and I ain't scared of Ebenezer, neither; no matter if he does live in the Manufacturers' Building, with two or three thousand fathom of front fence," he says.

Some years ago Jonadab got reckless and went on a cut-rate excursion to the World's Fair out in Chicago, and ever sence then he's been comparing things with the "Manufacturers' Building" or the "Palace of Agriculture" or "Streets of Cairo," or some other outlandish place.

"All right," says I. "Darn the torpedoes! Keep her as she is! You can fire when ready, Gridley!"

So we sot sail for what we jedged was Ebenezer's front-gate, and just as we made it, a man comes whistling around the bend in the path, and I'm blessed if 'twa'n't Peter T. Brown. He was rigged to kill, as usual, only more so.

"Hello, Peter!" I says. "Here we be."

If ever a feller was surprised, Brown was that feller. He looked like he'd struck a rock where there was deep water on the chart.

"Well, I'll be——" he begun, and then stopped. "What in the——" he commenced again, and again his breath died out. Fin'lly he says: "Is this you, or had I better quit and try another pipe?"

We told him 'twas us, and it seemed to me that he wa'n't nigh so tickled as he'd ought to have been. When he found we'd come to the wedding, 'count of Ebenezer sending us word, he didn't say nothing for a minute or so.

"Of course, we had to come," says Jonadab. "We felt 'twouldn't be right to disapp'int Mr. Dillaway."

Peter kind of twisted his mouth. "That's so," he says. "It'll be worth more'n a box of diamonds to him. Do him more good than joining a 'don't worry club.' Well, come on, up to the house and ease his mind."

So we done it, and Ebenezer acted even more surprised than Peter.

I can't tell you anything about that house, nor the fixings in it; it beat me a mile—that house did. We had a room somewheres up on the hurricane deck, with brass bunks and plush carpets and crocheted curtains and electric lights. I swan there was looking glasses in every corner—big ones, man's size. I remember Cap'n Jonadab hollering to me that night when he was getting ready to turn in:

"For the land's sake, Barzilla!" says he, "turn out them lights, will you? I ain't over'n' above bashful, but them looking glasses make me feel's if I was undressing along with all hands and the cook."

The house was full of comp'ny, and more kept coming all the time. Swells! don't talk! We felt 'bout as much at home as a cow in a dory, but we was there' cause Ebenezer had asked us to be there, so we kept on the course and didn't signal for help. Travelling thru the rooms down stairs where the folks was, was a good deal like dodging icebergs up on the Banks, but one or two noticed us enough to dip the colors, and one was real sociable. He was a kind of slow-spoken city-feller, dressed as if his clothes was poured over him hot and then left to cool. His last name had a splice in the middle of it—'twas Catesby-Stuart. Everybody—that is, most everybody—called him "Phil."

Well, sir, Phil cottoned to Jonadab and me right away. He'd get us, one on each wing, and go thru that house asking questions. He pumped me and Jonadab dry about how we come to be there, and told us more yarns than a few 'bout Dillaway, and how rich he was. I remember he said that he only wished he had the keys to the cellar so he could show us the money-bins. Said Ebenezer was so just—well, rotten with money, as you might say, that he kept it in bins down cellar, same as poor folks kept coal—gold in one bin, silver half-dollars in another, quarters in another, and so on. When he needed any, he'd say to a servant: "James, fetch me up a hod of change." This was only one of the fish yarns he told. They sounded kind of scaly to Jonadab and me, but if we hinted as such a thing, he'd pull himself together and say: "Fact, I assure you," in a way to freeze your vitals. He seemed like such a good feller that we didn't mind his telling a few big ones; we'd known good fellers afore that liked to lie—gunners and such like, they were mostly.

Somehow or 'nother Phil got Cap'n Jonadab talking "boat," and when Jonadab talks "boat" there ain't no stopping him. He's the smartest feller in a cat-boat that ever handled a tiller, and he's won more races than any man on the Cape, I cal'late. Phil asked him and me if we'd ever sailed on an ice-boat, and when we said we hadn't he asks if we won't take a sail with him on the river next morning. We didn't want to put him to so much trouble on our account, but he said: "Not at all. Pleasure'll be all mine, I assure you." Well, 'twas his for a spell—but never mind that now.

He introduced us to quite a lot of the comp'ny—men mostly. He'd see a school of 'em in a corner, or under a palm tree or somewheres, and steer us over in that direction and make us known to all hands. Then he'd begin to show us off, so to speak, get Jonadab telling 'bout the boats he'd sailed, or something like it—and them fellers would laugh and holler, but Phil's face wouldn't shake out a reef; he looked solemn as a fun'ral all the time. Jonadab and me begun to think we was making a great hit. Well, we was, but not the way we thought. I remember one of the gang gets Phil to one side after a talk like this and whispers to him, laughing like fun. Phil says to him: "My dear boy, I've been to thousands of these things——" waving his flipper scornful around the premises—"and upon honor they've all been alike."

(To be Continued)

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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Irritation of Eyes.—Have a 6-year-old mare at farm work. About middle of March her eyes got sore, lids were swollen, eyes inflamed, not much discharge from them except water. Days she stands in stable or cool cloudy weather they seem better. Hot, sunny days when out of doors, she keeps them shut all the time and they seem to swell more. We feed her oats and hay. S. F. W., Benezett, Pa.—Dissolve one dram boric acid in ½ pint clean boiled water and apply to eyes with dropper or small syringe, twice daily. Give ½ ounce Fowler's solution at dose in either feed or drinking water, two or three times a day.

Diseased Tooth.—Swollen Jaw.—I bought a horse some time in March which had a tooth extracted a few days prior to sale. I was told that the horse was alright but I noticed a bunch on opposite jaw which our local veterinarian thought might be caused by a sprain when tooth was pulled. Be believed the bunch would go away, but it is now very large and horse is unable to masticate food properly. I have applied hot water and camphorated oil, but it fails to reduce swelling. E. M. K., Gwynedd Valley, Pa.—Apply equal parts spirits camphor and tincture iodine daily. His cheek has been bruised and perhaps an abscess is forming which will soon open. Then he will soon recover.

Indigestion.—I have a mare about 20 years old that was in good condition until last summer. During the hot spell she began scouring. I had some trouble getting it checked. I used flour in feed, cut out bran and corn for the time and fed ground oats and mixed hay. She had two or three attacks until winter. Then her bowels became natural. But from the first attack she began to run down and has remained thin. I fed her some oil meal but that opened her bowels. I have noticed that exercise increases her bowel movements. She also has mucous discharge from vagina which is much like white of egg. She has wintered on cut corn fodder, cracked corn and ground oats. Have just started feeding molasses feed, containing cracked corn, oats, alfalfa and molasses. She is poor and weak. How can I build up? A. A. L., Blue Anchor, N. J.—Give her one dram powdered sulphate iron and ½ ounce Fowler's solution at dose in feed or drinking water, three times a day. Dissolve 30 grains permanganate potassium in one gallon clean boiled water, then with fountain syringe wash out vagina, three times a week. This treatment should be kept up until she recovers. It is perhaps needless for me to say that she should be well fed. The feeder can tell which kind of food gives best results.

Cow Coughs.—I have a cow that is troubled either with a cold or chronic cough. I bought her about five weeks ago, but failed to discover the cough until I got her home. O. C., Felton, Del.—It is not unusual for a cow to cough occasionally as it is only a symptom, not a disease. Dust and badly cured fodder are common causes. Give her one ounce powdered licorice and one dram muriate ammonia at dose in feed, twice daily. She would perhaps get well without treatment.

Heifer Fails to Come in Heat.—My two-year-old heifer fails to come in heat and I would like to know what to give her. H. S., Saratoga Springs, N. Y.—If she is a twin, the other calf a male, she will never come in heat, or breed. Give her forty grains ground nux vomica and one dram ground capsicum at a dose in feed, three times a day.

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Miscellaneous

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COUNTY NOTES

Lebanon Co., Pa., (SE) May 13.—Weather is warm and seasonable, tho a little more rain would be very good for both the wheat and the oats. Almost all of the corn has been planted, as are also the potatoes. Oats is coming up well and promises a good crop. Wheat is also looking well with the exception of exposed hillsides where the stand is poor. Our farmers are busy preparing the land for tobacco planting. Several sales of dairy cows took place with prices invariably high. Horses, on the contrary, are low, with the exception of the draft types, which command fair on account of the extremely low price offered for the tubers they still have on hand. Lebanon County went flying "over the top" in the Third Liberty Loan, some of the rural district doubling and tripling their quotas. Potatoes are 50 cents; oats, 75 cents; corn, $1.60 per bushel. Eggs are 32 cents a dozen and butter 50 cents per pound. The spring work is fairly well cleaned up and the labor shortage is not as acute as it promised to be this winter.—Leonard F. Strickler.

Mifflin Co., Pa., (C) May 14.—Fair and warm, with a shower every few days; cooler after showers. Good horses and cows are high; medium good, much cheaper. Wheat and grass are growing very fine. Wheat about all sold at $2.05; corn $1.50; rye, $1.90; oats, 75 cents; eggs, 30 cents; butter, 40 cents; apples, $1; potatoes, 80 cents. Plowing and preparing for corn planting is the general work. Some are done plowing. Early planted potatoes are up. Oats are up fine. All kinds of work is moving and everybody busy.—J. H. Byler.

Venango Co., Pa., (NW) May 6.—Weather for April was wet and cold. More pleasant now. Live stock wintered well; high in price and scarce. Wheat and rye almost a failure. Meadows look well. Fruit is coming in bloom; looks well. Butter, 50 cents; eggs, 40 cents; veal, 20 cents; potatoes, 50 cents to $1.25; hay, $25 per ton. Farm work well along; not so large an acreage of potatoes will be planted this year. General conditions fairly good.—W. J. Pringle.

Broome Co., N Y., (SE) May 14.—Apple trees are loaded with bloom. Cattle are being put out to pasture. Very heavy rains are retarding planting. Damaging hail storm on night of May 12. Many people who usually raise a large number of chickens are either raising only a few or none at all. Activity is curtailed partly by feed prices and partly by uncertainty of what the Government officials may do another year. Potatoes bring 75 cents to $1 bu; butter, 48 cents; eggs, 35 cents; cheese, 24 cents; live fowls, 30 cents; do. dressed, 35 cents; veal calves, $3 to $5 each. Wheat brings $2.32 bu; oats, $1; corn, $1.75; bran, $43 ton; mixed feeds, $46.50 ton; corn meal, $65 ton; hay, $19 to $22 ton.—C. H.

Lancaster Co., Pa., (SE) May 20.—Moderately warm, dry weather. Live stock in good condition. Fat steers are being put on the market at from 14 to 16 cents per pound. Good cows are in demand and bring good prices. Sucking pigs are worth from $7 to $8 per head. Much wheat is very poor and will likely be very short in the straw. Clover and timothy fields look good and promise heavy yields. Oats are up nicely and potatoes are coming up. Some fields of corn are up while others are being replanted because of the poor seed. Tobacco plants are growing well and a small amount of tobacco has been planted. Farmers are very busy but with an early start in the spring most farmers are up to the average with their work.—J. Henry Haverstick.

Milking Machines.—Circular No. 54, of the New York Experiment Station, discusses milking machines. Discussion covers the following heads: Selecting a machine, operating a machine, can you get as much milk with a machine as by hand, keeping the machine clean, spread or cause of garget. The report is mailed from the above station, Geneva, N. Y.

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Conservatively rated at 9-18 horse-power, the Moline-Universal Tractor has more than ample power for heavy belt work. Its greater speed enables it to plow as much in a day with two plow bottoms as the ordinary three-plow tractor. Yet it is light enough for such work as cultivating, mowing, etc., which do not require as much power.

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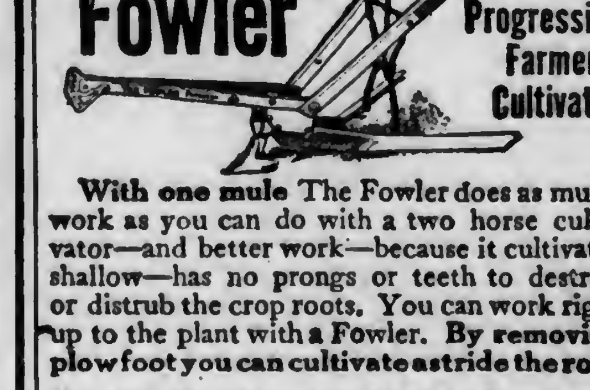

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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880
PUBLISHED WEEKLY

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Library Agri College Experiment Station

A Trial With Women Workers

Farm Labor Experiences on Large Vegetable Farm

There is much discussion of the practicability of school boys and women labor on the farms. This article relates experiences with both. One swallow does not make a summer, and one experience does not prove a case. The article is given for what it may suggest to others in securing help in the busy season.—The Editors.

How to make the best of a bad labor situation was strikingly demonstrated on a Cortland County, N. Y., farm last year. The Peck dairy farm, just outside of the city of Cortland, has long been famous as a dairy establishment, having what is recognized by our state college as one of the best modern, fire-proof dairy barns in the state, which has housed 150 high-producing Holsteins and Guernseys. When the call came last spring for intensive agriculture and a bumper production of food crops, Miles J. Peck, the manager of this farm, proceeded to make it an immense war garden. Over 240 acres of food crops, besides those of small grains, were planted. His experiences with the labor problem contain much of value to other farmers who grow these crops in quantities.

His planting included 50 acres of corn, 64 acres of potatoes, 14 acres of red table beets, 4 acres of peas, 17 acres of Hubbard squash, 40 acres of beans, 14 acres of cabbage, 10 acres of turnips, 18 acres of millet and 10 acres of carrots. Mr. Peck is county superintendent of Sunday Schools and he offered the eight Sunday Schools of the city of Cortland one acre each of his most fertile land to be planted to food crops, with a prize for the school that should make the best showing. With eight teams, three tractors, two motor trucks and the best modern, labor-saving machinery, work was pushed thruout a wonderfully busy summer. Twenty acres were plowed that were never planted, because of the unusually wet season.

A Load of Normal School Girls on Way to Pota to Fields

School Boy Labor

With the nearby city of Cortland and its numerous schools and factories to draw upon for help in crop emergencies, this farm was the center of attention for this part of the state all thru hoeing and harvesting time. In hoeing time, 120 Italians could hoe one plot of 23 acres of potatoes in a day. Quite a few Italian women worked on the farm most of the summer. Thirty high school boys from Cortland were also a part of the laboring force at various times, as needed. One field of potatoes had some remarkably long rows, extending about a mile from the house, down across the flat to the river. At this point in the river there was once a dam and the water gouged out a hole 15 feet deep, long famed as a swimming hole. The dam disappeared years ago, but the "pork barrel" as the swimming hole was called, remains a great attraction for boys, big and small.

One hot day last summer Mr. Peck knew he had sixteen boys with sixteen horses cultivating potatoes in that field—or should have. He chanced to look out and not a boy and not a horse could he see. Somewhat puzzled, he jumped into his car and ran down to the river. There in the bushes he found sixteen horses tied in all manner of ways, and down in the "pork barrel" were sixteen boys in nature's costume, swimming. It is characteristic of Mr. Peck's genial good nature that he told the boys after that they could take a half-hour off each afternoon to go swimming if they would unhitch the horses from the cultivators and tie them securely so no accidents could happen.

Normal School Girls Operating a Four-Horse Potato Digger

School Girl Labor

The potatoes were a fine crop, yielding from 150 to 350 bushels to the acre. The securing of such a big acreage was a problem until Mr. Peck appealed to the State Normal School for help. In response to the principal's call for emergency workers, two hundred girls signified their willingness to help secure this crop. Out of the number, sixty girls with some previous farm experience were selected, all having an average standing of 80 percent in their school work. Altho the weather was cold and bad during most of the time these girls worked, they showed a remarkably good spirit and stayed on the job, picking up potatoes, pulling beets and turnips, running the potato diggers, trimming and picking up beets, turnips and carrots, and doing various kinds of practical work. They proved to be the most successful laboring factor of the year. They were steadier workers and more conscientious, taking an interest in the work and really enjoying it. Men helped at the harder tasks, like carrying heavy loaded potato crates, etc.

The girls had two chaperones, members of the faculty, who directed the field work and acted as time-keepers for the girls. The system of payment had by this time resolved itself into one on the piece-work basis, four cents a bushel being paid for picking up potatoes. Some of the girls proved to be expert at this, a few earning $4 a day, while all excelled the boys.

Storing the Crops

Mr. Peck had disposed of 64 head of Guernseys. The big sanitary dairy barn had furnaces installed, shelving put in and fitted to store the immense crop of squash, which averaged ten tons to the acre, altho some of it was planted very late. Another barn was filled with beans, while cabbage and potatoes were put into a new storage building. A new concrete storage building 36x96 feet was built alongside the highway where a switch from the trolley line runs right to the doors. A small boiler furnishes adequate heat for safely storing squash, potatoes or other vegetables. Mr. Peck estimated that he could save the cost of the building in one year if he could safely hold his squash long enough to secure an extra two cents a pound. The capacity of the building is about 20,000 bushels. Much of the produce was sold to the United States army; 5,200 bushels of beets going to a nearby cannery for canning for army use. Over 100 carloads of vegetables, including 180,000 pounds of beets, 1,100 bushels of turnips, 500 bushels of beans, and 4,000 bushels of corn and grain were shipped to the army or sold on the market.

Three Champion Potato Pickers

This big farm of 468 acres has been divided and the larger part sold, but Mr. Peck retains his own farm of 140 acres and he will plant 120 acres of it this year to crops similar to those grown the past year. Most of this year's output is already contracted to a nearby canning company, and it is expected that a good deal of hand labor will be required again this year.

When there is so much said for and against women and girl farm units this season, it is of interest to note that Mr. Peck says: "Give me capable girls for help. They are more efficient than boys, also more conscientious. With men to do the heavier work that we should never ask of women, they find the work does not hurt them and they develop into strong, vigorous women."—M. F.

Apple Growing in East and West

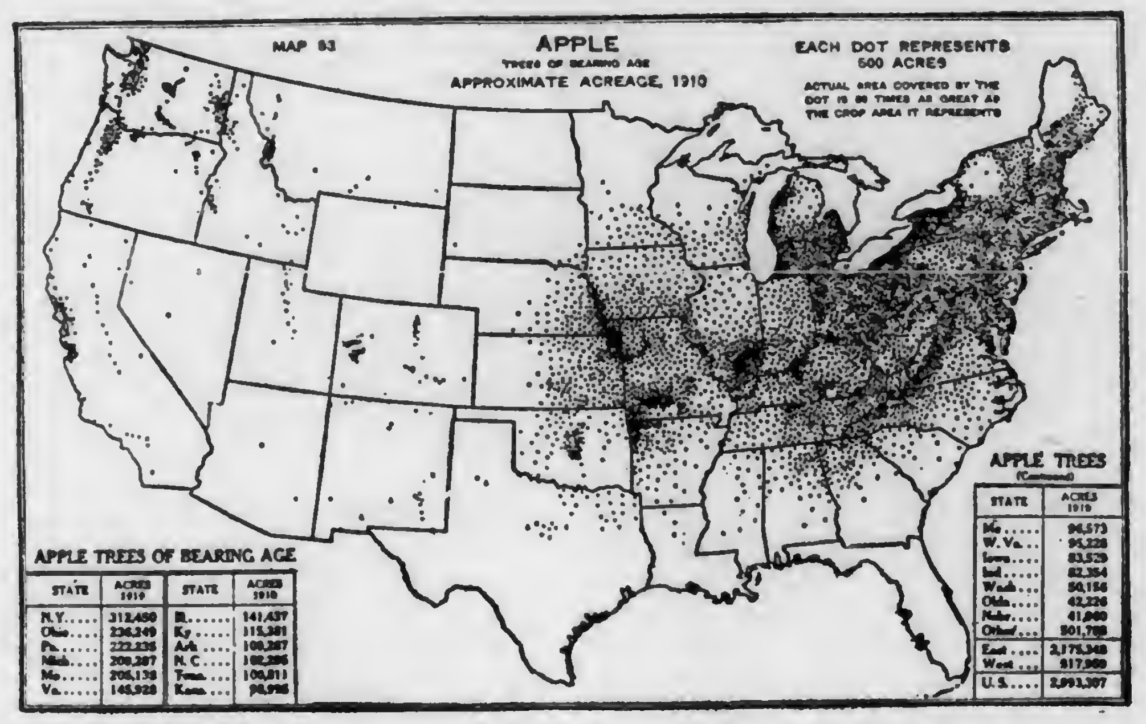
Market Showing Not Flattering to Eastern Growers

If the man in the moon were to visit the earth and walk thru the markets of the eastern cities, taking special note of the apples displayed and learning where they were grown he would naturally conclude that apples were produced only in the Northwestern states. He would come to this conclusion because the exhibits which one sees attractively displayed in the market stalls, in the show windows and even on street stands are almost universally apples which have been shipped 2,000 to 3,000 miles from where they were grown. Of course he would find in the storage plants, under the counters and in the basements of stores great quantities of apples—the stock which furnishes the bulk of the trade. These he would not see unless especially shown.

If the visitor is as wise as he is reputed to be he would not need to be told why this cream of the trade is so much in evidence in the public places. If he had the business acumen of the modern merchant and the same kind of eyes as the average buyer he would know they were found there because of their attractive appearance. That is the whole truth of the matter. Eastern growers may write volumes or shout themselves hoarse in stating that eastern-grown apples are of better and more pronounced flavor than are western apples. They have been trying to convince the consumer by argument for years, but still the gateway to the buyer's stomach is thru his eyes.

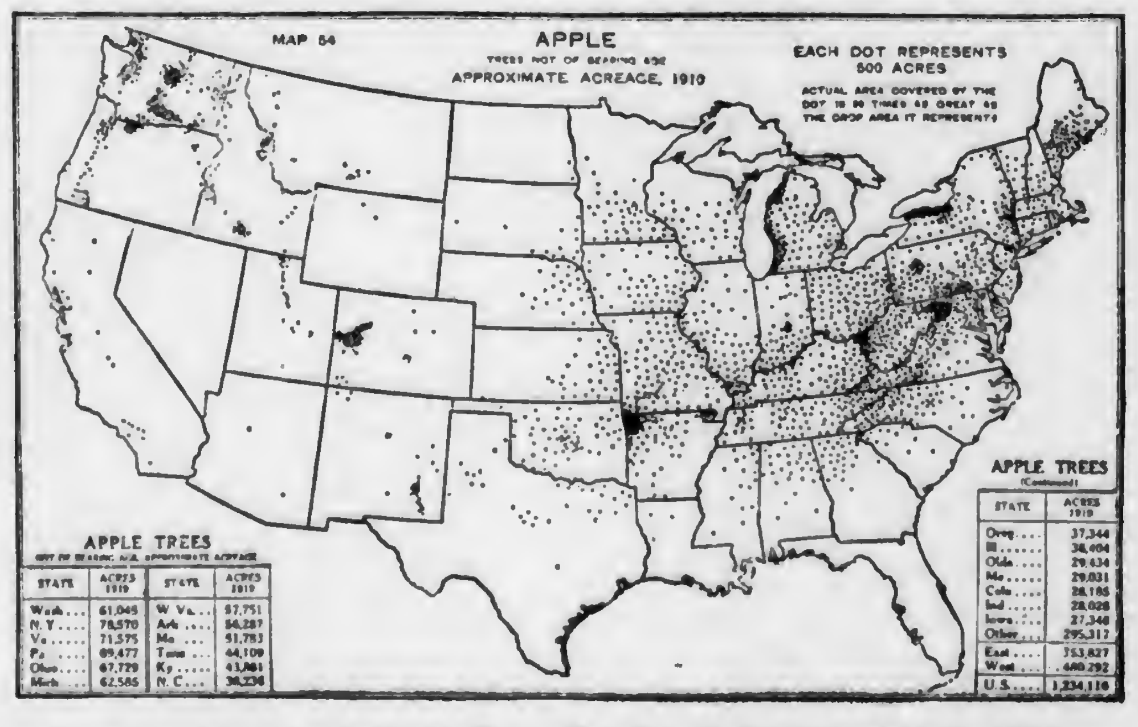
The two etchings on this page show graphically the relative number of apple trees in the east and west. When we realize that each dot represents 500 acres of trees it is easy to see that the display of fine fruit seen in the markets is out of all proportion to the total number of trees in the country. We have heard eastern men say discouragingly that the development in the west has been so great and the climate is so favorable that it is impossible for us to compete. Neither of these statements is justified by the facts. The real reason for preference lies in appearance, and this is obtained by the better business practices of western growers. These better business practices consist of good cultivation, thoro spraying and, above all, strict grading and absolute honesty in packing. So well established is the latter that any intelligent buyer knows that he will find the apples at the bottom of the box identical in size and color with those on the top.

There is no intention to infer that men in one section of the country are by nature more honest than those in other sections. This is but a concrete example of the maxim, "Honesty is the best policy." In order to find a profitable sale in markets already well supplied in quantity it was absolutely necessary to apply such principles as would induce the public to prefer their apples and pay a price sufficient to cover the expense of production and pay freight charges over several thousand miles.


MAP 53
APPLE
TREES OF BEARING AGE
APPROXIMATE ACREAGE, 1910
EACH DOT REPRESENTS 500 ACRES
APPLE TREES OF BEARING AGE
APPLE TREES (Continued)
Map Showing Acreage of Bearing Apple Trees in 1910

But there was also something more. It is not enough for one man to do honest, attractive work. He could not win out financially single-handed. He would fail with nothing but his own reputation. A reputation for the whole state or a group of states must be built up. There is but one way to do this and that is thru co-operation. Ideals must be standardized and operations made uniform. Rules must be adopted and rigidly enforced. All these things western fruit growers have done and done so well that eastern growers might well feel ashamed rather than jealous.

That these principles may be successfully carried out in the east is proved by the success of a few apple growing sections; notably western New York, Adams County, Pennsylvania and Dover, Del. But before a proportionate share of the apples from the millions of eastern trees will be used for show purposes there must be more uniform state packing and grading laws and a more exacting federal law. And above all, the business must become a co-operative one, the members of which must study and apply the best-known methods in production and rigorously enforce such packing and grading rules as will meet the demands of consumers. In this way eastern growers may compete successfully for the cream of the apple trade, and in this way only.



Showing Acreage of Apple Trees Not Yet of Bearing Age in 1910

LATE SHALLOW CULTIVATION

Thousands of bushels of corn have been lost by deep cultivation late in the season. In the writer's earlier farming experience it was customary to begin cultivating corn as soon as it appeared above ground and keep the cultivator going with the teeth set at the same depth until the corn was so large that cultivation was no longer practicable. Many farmers at the present time follow this same cultural method, thereby doing more harm than good to the crop.

Deep cultivation is all right when the corn plant is small, but as the roots spread and fill the space between the rows they are cut off by the cultivator teeth and the feeding capacity of the plant is reduced. Shallow cultivation at this time and until the corn is "laid by" will keep down the weeds and preserve a dust mulch without doing injury to the crop. No cultivation after the corn roots begin to reach out between the rows is better than deep cultivation.

Fruit growers are finding that this same principle applies to orchard cultivation. They have found that what cultivation is done in the orchard should be completed early, as late cultivation results in cutting off the network of fine surface roots and this reduces the capacity of the trees to feed and drink from the topsoil supplies. It is a matter which deserves more attention than it has received.—E. E. R.

Spray Potatoes to Prevent Blight

Crop Threatened Unless Disease is Controlled by Spraying

Potato late blight, a fungous disease, capable of causing enormous destruction, appeared last year in several states from Maine to New Jersey and West Virginia, according to the United States Department of Agriculture. The blight occurred early last year and reports show that it was more prevalent than usual. Unless potato growers spray thoroly with Bordeaux mixture, they fear that the large potato crop that has been promised will not be realized, as late blight, if uncontrolled, is capable of reducing the national crop at the rate of 2,000,000 bushels per day.

Potatoes in the northern states are just beginning to form tubers. To produce a large crop the tops must be kept healthy till frost, as the tubers increase in size most rapidly during the last weeks of the season. The late blight kills the tops and causes the tubers to rot in the ground. The blight starts in a few centers in the field where diseased potatoes were planted. Brown spots develop on the leaves and a whitish mildew appears on their under side. Frequent rains and warm, muggy weather furnish ideal conditions for the development of the blight under which the foliage blights rapidly, the leaves hang blackened and dead and the tubers begin to rot. Dry and hot weather on the other hand tends to check the progress of the blight but growers should spray immediately and not trust their crops entirely to improvement in weather conditions.

As an effective preventative of late blight, Bordeaux mixture has proved its value for 25 years. Every grower from Maine to Michigan and south to Virginia is urged to spray repeatedly.

How to Make Bordeaux Mixture

Use: Bluestone (copper sulphate), 4 pounds; quicklime, 4 pounds; water, 50 gallons.

Prepare the copper sulphate by suspending it in a gunny sack just below the surface of several gallons of water in a clean barrel. When the sulphate is dissolved, which requires three or four hours, remove the sack and stir into the barrel enough additional water to make exactly 25 gallons of the copper solution.

Prepare the lime by slaking it slowly and thoroly in a clean barrel, strain, and add enough additional water to make exactly 25 gallons of lime milk. Stir thoroly.

Pour the two ingredients together into another barrel, or better directly into the spray tank, if it will hold 50 gallons. It is highly important to stir the mixture very thoroly and to strain both ingredients before they are combined, as otherwise clogging of the spray nozzles might result. Use copper or bronze wire strainer of eighteen meshes to the inch. Do not put copper sulphate or Bordeaux mixture into tin or iron vessels; use wood or copper containers. Mix the Bordeaux as needed and apply at once. It is never so good after it has settled.

Where poisons such as arsenate of lead are to be combined with Bordeaux mixture, add the poison after the two solutions are mixed Then stir well.

Stock Bordeaux Solutions

Those who use Bordeaux mixture frequently and in quantity will find it convenient to keep concentrated stock solutions on hand, as these keep indefinitely if the water which evaporates is replaced.

Build an elevated platform to hold the barrels. The night before the day you wish to commence spraying, suspend fifty pounds of copper sulphate to dissolve in a fifty-gallon barrel of water. Slake fifty pounds of lime in another barrel. Add water to make fifty gallons of lime milk. When Bordeaux mixture is needed, stir both stock barrels well and take four gallons from each stock barrel. Dilute the copper sulphate in one barrel by adding enough water to make 25 gallons. Dilute the lime milk in another barrel by adding enough water to make 25 gallons. Stir each thoroly. Combine the two as in previous directions. Thoro agitation is essential in making good Bordeaux mixture.

Queries and Comments

Treatment For Alfalfa Field

"What treatment should I give an alfalfa field after I take off the first crop? The stand is good. It has been down three years."—W. T., Chester Co., Pa.

Unless you are sure the soil contains a plentiful supply of lime give it a dressing of lime; also, 200 or 300 pounds per acre of acid phosphate. Many an alfalfa field is short lived and unproductive because one or both of these factors become depleted. Altho alfalfa when well established will supply its own nitrogen and more, every cutting takes from the soil the other elements and the plant does not replace them. It is also advisable to run a sharp spring tooth harrow over it. This loosens up the soil and cuts out weeds and foreign grass while not hurting the alfalfa much. There are special harrows made for this purpose, but any one may be used by having the points of the teeth narrowed and pointed at the ends.

Salting Hay in Mow

"Of what benefit is the application of salt to hay as it is put into the barn?"—M. T. F., Bradford Co., Pa.

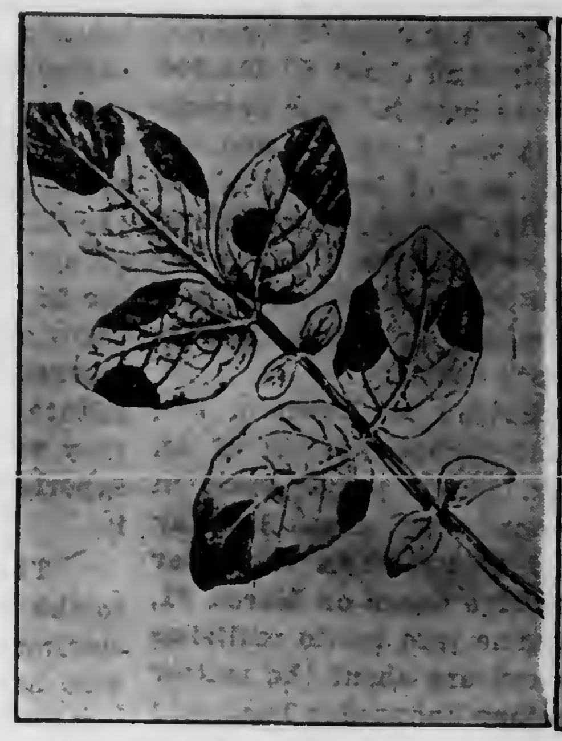


Fig. 1.—Early Blight

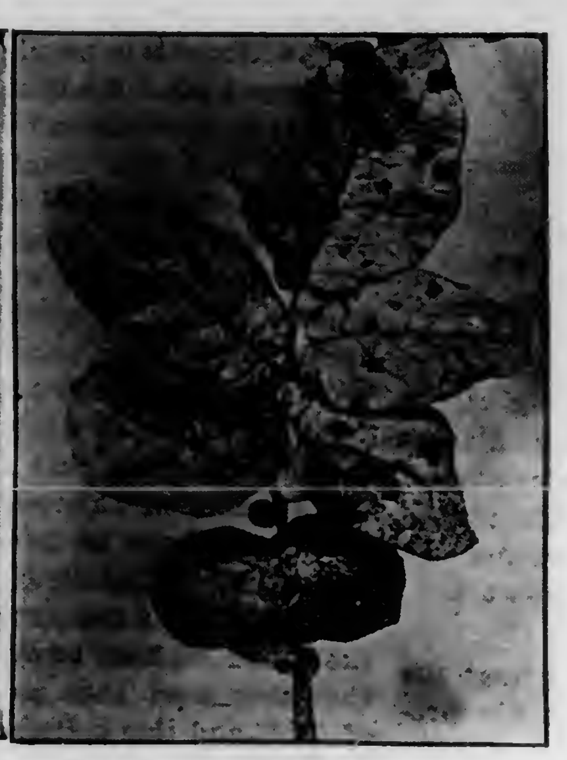


Fig. 2.—Late Blight

Salt had a tendency to retard fermentation, hence when hay is salted liberally, damp hay is not so likely to become black and musty. It also adds to its palatability if too much is not added. There is nothing gained in salting hay when it is properly cured and put away in good condition. Silage should never be salted as it is put into the silo because rapid fermentation is desirable in order to make good silage.

Varieties of Corn

"Are there any authoritative tests showing which varieties of corn yield best? It seems to me that farmers might increase their crops by selecting the right varieties."—G. W. F., Monmouth Co., N. J.

The results on one type of soil and in one locality would not be a sure indication of what to use under different circumstances. Such experiments should be carried out in each neighborhood. We give below the results last year in Montgomery County, Pennsylvania, as reported by a reader:

Interesting Corn Test

"As present high prices of feeds are likely to continue for some years the eastern farmer should put forth every effort to grow as much of his own grain as possible, especially corn. This need not necessarily mean more acres but greater yields per acre. One way to insure this is by having the right variety. How can we find the right variety? The only way is by actual test on the different types of soils. A corn variety test in every community, carefully conducted, would be of incalculable value.

"One of these tests has been conducted the past summer on a farm in Montgomery Co., Pa. The soil on this farm is of the Lansdale silt type and is fairly fertile. The field had been planted to corn the year previous. Thirteen varieties or strains were planted—about one twenty-fifth of an acre to each variety. The corn was husked on October 22 and weights computed on the acre basis with the following results:

Plot	Name of Variety	Bus. per acre
1.	Golden Beauty	95.7
2.	Golden Beauty	97.4
3.	Long's Champion	90.2
4.	Johnson Co. White	83.2
5.	Yellow Dent	83.4
6.	Cloud's White Cap Dent	83.4
7.	Cloud's Yellow Dent	88.2
8.	Yellow Dent	95.4
9.	White Cap Dent	85.8
10.	Funk's Dent (crib)	77.6
11.	Funk's Dent (field)	82.7
12.	Reid's Dent	78.9
13.	Yellow Dent	89.9

"In this test not only was the better adaptability of some of the varieties emphasized but also the importance of seed selection and of the germination test. The corn represented on plot 2 had been grown by a neighbor for a number of years. This farmer has always selected his seed corn in the field from well-matured stalks and applies the germination test to every ear. The seed for plot 1 was supplied by a farmer who had secured seed from farmer No. 2 three years previous but was not so careful in his seed selection. Plot 11 was planted to field selected seed, tested for germination, while plot 10 was planted with seed taken from the crib just before planting. The seed for plots 10 and 11 was grown in the same field. The results show that the field selected seed produced 5 bushels more per acre. This would mean quite an item in a field of 20 acres. Altho Long's Champion and Johnson Co. White are ordinarily heavy yielders, in this case they proved to be too late in maturing.

"The results of this and similar tests will show any farmer the importance of selecting a variety or strain adapted to his soil and climatic conditions; the importance of practicing field selection; and the importance of applying the germination test before planting."—A. R. K., Montgomery Co., Pa.

SPRAYING POTATOES BY THE COMMUNITY PLAN

Mr. W. B. Cookingham of the agricultural department of the local high school had the oversight of a system of community spraying in the growing season last year, in which eleven farmers were interested. It was thought that the figures which are fairly accurate would be of interest to farmers and all others who are interested in the food problem. Most of the spraying was done as a result of activities of the agricultural department looking to increasing food production on the farms of the community.

Farmer	Acres	Times	Yield	Increase Percent
John Bush	12	5	125	50
Lewis Gardner	16	6	188	50
Edward Sams	3	6	100	50
Seth Higby	4	6	237	42
Seth Higby	10	6	133	20
Harry Ardell	6	6	126	25
Judson Ardell	2.5	6	184	50
Lyman Gray	10	6	200	50
Clarence Gray	4	6	125	33
Fred Rex	11	5	166	50
Peter Seymour	3.5	4	144	33
Austin Jenks	2⅞	4	192	33
Raymond Crouch	6	1	77	35
Raymond Crouch	1	0	50	..

Total increase for the community was 5,989 bushels. Average yield per acre of sprayed potatoes

(Continued on Page 9)

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PHILADELPHIA, PA., JUNE 8, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

Ensilo Alfalfa

The heavy rains the last week in May caught many farmers cutting their first crop of alfalfa. The silo is always a ready storage for alfalfa, or for clover, when weather conditions do not permit proper curing. Alfalfa silage is better than bleached-out and shattered alfalfa hay. Make the silo work.

* * *

Fraudulent Book Agents

Farmers are warned against the operations of book agents representing themselves as agents of the Government in the sale of account books. There have been reports of such agents from a number of sections. These men usually represent themselves as being connected with the Federal Treasury Department and as handling these books as a part of the enforcement of the income tax law. They sell the book at a very fancy price. These men are pure frauds and should be reported to the legal officials of your county or township wherever found operating.

* * *

Save Bags

A recent Government announcement of feed prices says that, at present prices of sacks, the bagging charge on a ton of feed will run from $5 to $6. Jute and burlap bags are at a premium. Bags to be filled with sand for lining trenches and dugouts are in heavy demand in the war zones. This demand, coupled with decreased production, has created a scarcity for industrial uses that is being felt particularly in the feed and fertilizer business. Save all of the bags on the farm. They will save you money if you have occasion to use bags, and they will sell readily at good prices if you have no further use for them.

* * *

War Taxes

Between Liberty Loan drives every citizen may have the privilege of expressing his views upon the financial policies of the Government. Whether Congress shall greatly increase the tax rate on incomes and excess profits and thus raise the largest amount possible, or whether the rates shall be left as they are and the balance furnished by sale of bonds is a question for every one to consider.

It is estimated that there will be needed for the next year 25 billion dollars, or more. The raising of this vast sum will be a severe test of the money-raising ability of our people. It is about twice as much as was raised in the past two years by tax and bonds together. Congress has been requested by President Wilson and Secretary McAdoo to pass a new tax law and the intimation was made that it will be necessary to greatly increase the income of the Government thru increased taxes. In all probability the minimum income subject to tax will be lowered and the rates increased on large incomes and excess profits. This is as it should be. In these times the maxim, "From everyone according to his ability" should be the rule, and that rule applied vigorously and without partiality. We are recommended to "Give till it hurts," but there are lots of people who have not yet felt it. By all means, let the tax rates be raised. Some are making a plaintive cry, using democracy as a reason for keeping the tax rate for all people as nearly uniform as possible. That's poor argument. Again we say, "From every man according to his ability."

* * *

Our Saving

We have all felt privileged to criticise the Food Administration when some ruling or some particular policy did not appeal to us as the wisest or best. Simple justice demands that we weigh the results of the Administration's plans with as ready willingness. Following are a few extracts from an address by Mr. Hoover, made on May 31. They help us to a better understanding of what he has had to do and how he has succeeded in his task:

The 1917 harvest gave us a surplus over our normal consumption of 10,000,000 bushels of wheat. Up to June 1 of this year we have sent abroad 140,000,000 bushels, a saving on the tables of the American people of 130,000,000 bushels. In normal years we usually send about 50,000,000 pounds of pork abroad each month. Our average for the last two months has been 250,000,000 pounds. Our normal exports of beef are about 10,000,000 pounds monthly. We are now sending 120,000,000 pounds every 30 days. These increases are made possible by some increased production, but more particularly by voluntary conservation on the part of our people.

The effect of such saving is shown in two specific examples that must appeal to all of us. In February of this year, 20,000 people stood in the bread lines in London every day. In May these lines had dwindled to less than 1,000 per day. Since the German drive began on March 21, the allied soldiers have gone into battle realizing that they need have no concern about the matter of food, and this satisfactory knowledge has aided to keep up their splendid morale. The Allies know that America is back of them not only with men and munitions, but that the American farmer is back of them with largest possible production and the American consumers are saving wherever possible to make that food available in their great struggle.

Contrast this record of national unselfishness with the food policy of Germany. Germany has extorted food supplies from every bit of territory she has conquered until she has left a circle of starvation about her in which she has killed by starvation more people than she has killed with cannon since the war broke out. But despite this extortion the food situation in Germany is steadily growing worse, while the food situation of the Allies is steadily growing better.

Very briefly, these paragraphs sum up the results of our food policy. These results are among the most gratifying of our achievements during our first year in the war. Best of all, it is a policy in which we can all help. It is our part in the war program to make the food situation secure.

* * *

Intensive Living

Surely this generation is having the privilege of experiencing life in the extreme. Years ago, while learning a little grammar, we found that adjectives referring to quality and quantity were of three degrees: Positive, comparative and superlative—and the teacher told us to use the superlative sparingly. In these times we scarcely hear anything but the superlative degree used. This is the biggest war, in which are used the most destructive agencies in the most inhuman way. We had the hardest winter, the dryest weather on record in some localities, the biggest storms in others, and the earliest freeze-up last fall. We are paying the highest taxes, the highest wages and the highest prices for things to eat and wear, and at the same time, contributing most to charitable organizations. Six months of war now is costing this country more than the four years of the Civil War, North and South combined. These are the ways in which people express themselves.

But after all, isn't it usual for us to think of our experiences in the superlative degree? Is this country—is the world—less able to stand the strain of today than it was in its past experiences? When we remember how, a few years ago, we exulted in the wonderful material advances the race had made we find we are comparatively as well situated to meet today's demands as were the people of 50 years ago to meet theirs. Present activities would have been impossible a generation ago, as it would have been impossible to finance them. Our forefathers had their supreme experiences; we have ours. While ours may be comparatively greater than theirs, we are also better able to meet them. It is only the extreme experiences that try out our abilities.

* * *

Dairy Products

Food officials of practically every state report a large increase in the use of oleomargarine during the past two years. This increase is a direct result of the advance in all food prices. Butter is high as compared with prices of a few years ago, but it is not out of proportion to other food products. But butter is one of the comparatively few products for which there was an advertised substitute, and under the pressure of high prices generally, substitution was practiced wherever possible, and butter has suffered. A study of the comparative wholesomeness and food value of the two products will always hold oleo merely as a substitute, but not all consumers will make such study of quality, and not all making it will heed the difference. Dairymen may as well prepare to accept oleo as a permanent competitor with butter in the markets of the country. With better knowledge of food values and with readjusted markets, many consumers will forsake the substitute and come back to the genuine food. But they will not all come back. This is a universal experience, and dairymen may as well prepare for it.

This experience with oleo raises a question as to the possible effect of other dairy products now coming on the market. The condensed milk business has experienced a wonderful expansion during the past year. The foreign demand could be supplied in no other way. Whole milk could not be transported, and the condensed products came to take its place. But condensed milk has certain natural advantages that are likely to appeal to many of our own people after the war is over. It is easily shipped, it can be stored for long periods, it does not call for such careful handling and it does not need to be iced. The manufacturers may be depended upon to make the most of these facts in an effort to develop home consumption. If because of cheaper transportation and perhaps with lower cost of raw materials in new territory, they are able to put condensed milk on the market at a lower price than whole milk can be sold for, then the milk producers will find a lively competitor in their field. In addition, new milk powders, so-called crystalized milk and similar products are being brought out, each with its particular claims for special uses. None may become important factors in themselves but all help to encroach on the whole milk market.

Dairymen, and particularly dairy organizations, must give these developments some consideration in planning for the future. Their first effect will be to extend the limits of the producing area. Condensaries can go into new sections far remote from consuming centers and still put their product in competition with whole milk. They can locate where dairy organization is unknown and where individual bargaining with producers will permit most favorable buying prices. Already the movement westward has started, and one of the large retailing companies that now offers to sell its shipping station equipment to farmers is reported to be planning important expansion in the condensed milk business in the middle west. Dairymen will do well to consider the possible effect of such competition with their own business a few years hence.

HARRISBURG NOTES

To Rejuvenate Department.—From what has been learned, chances are bright for a rejuvenation of the state's Department of Agriculture as one of the first things to be undertaken next winter. Assuming that the Democratic state ticket will be decisively defeated because of its open espousal of the "wet" cause, men active in Republican affairs are making plans to redeem the record of omission of the present administration in several lines and especially in invigorating state co-operation in agriculture. The present crisis has shown very conclusively what was represented 4 years ago to be the weak spots in the state's system designed to encourage raising of foodstuffs, and some ideas which were cast aside in the session of 1915 are being studied in the light of recent experience and also from what has been done in other states. In the event that the next administration is free from factionalism there should be no difficulty about securing a scientific reorganization of the department; enlargment of its activities; elimination of the duplications which have been recognized and ordered abated, but which still exist; strong personnel and ample appropriations. It is not considered likely that Governor Brumbaugh will attempt to carry out any of the threatened changes in the State Commission of Agriculture. Any changes now would simply create state figures and lead to men being put back next January, while those who succeeded them would walk the plank. The remarkably large majority for the candidate for Governor opposed by Dr. Brumbaugh bids fair to be accepted as an expression of the way the people regard his administration and that it is no longer a potent factor in political affairs is now realized on Capitol Hill. Hence what should have been done will be left to the incoming people. Ghosts of departed ambitions will move up to make room for those of the class of 1918.

Plenty of Funds.—Recent studies of the state's finances indicate that the good showing made this year because of the strict collection of taxes will be surpassed next year. It is no secret that the payments of some of the big companies have not been what they should have been and that questions on whether business done in Pennsylvania is taxable, notably in oil, will soon be solved in favor of the commonwealth. This should provide more money, not only in collection of arrearages, but in the future. The money for establishment of an efficient system of agricultural supervision and aid and to help out rural education is in sight and the part of wisdom of legislative candidates is to see that the funds are not diverted to the support of local hospitals and homes. Specious pleas for increased appropriations for such institutions on the ground of the service they are rendering the nation in time of war are already being heard, but the burden of the conflict seems to be general and with the promised business reorganization of the state government and systematic programing of road, bridge, dyke, dock and other improvements, the chances for putting more matters under direct state control are good. It is well realized that the insane, penal and similar institutions wholly under state control will need more cash for operations and extensions.

Draft and Aliens.—The draft calls for June specifically exempt men, white and black, who are engaged in agriculture unless it is absolutely necessary to fill the quotas, but at the same time it is noticed that calls are being made for men with special training and an aptitude for mechanics. War and industries have a natural attraction, too, for the young men raised in the country and the subject of working aliens is being studied. There are men of enemy nationality in many of the mills in Pennsylvania and as the war progresses they will be more or less under suspicion. The plan now is to send some of them to farming. Prisoners of war are being used and will be, when they reach here.

The Relief Corps.—Strenuous efforts are being made by state and federal authorities to enroll men for what is termed the "Farmers' Relief Corps". The response from high school boys for farm work is said to have been good and hundreds are expected to go to work in fields. What are now being sought are men with some knowledge of farming who will be willing to go to the farm for a day or a week. In some counties men have gone from cities and towns to help out in pinches and it worked very well. The only trouble will be that many of the men will be unfamiliar with farm work, unable to stand the sun and the strain, while the number who will go will probably be far short of what is needed. From what is learned here those in charge have been much encouraged and the feeling that it is an essential as well as a patriotic duty to help raise food is growing greater every day. Local safety committees are in charge of the listing of men who agree to go to farms to help.

To Sue Officers.—In the next few weeks it is probable that orders will be issued to prosecute county or local officers who fail to comply with the orders of the state authorities to enforce the dog license code. There are counties reported where the constables have refused to hunt up and kill the unlicensed dogs, even where farmers are complaining that it is useless to attempt to raise more sheep without control of dogs.

Trend of Employment.—The statement of what the state is doing to get places for people shows that during April 12,387 persons were given positions. Leaving out the numbers of "floaters" this is a pretty sizable number, but the trend is all to construction or manufacturing. Over 11,500 were put to such work, 264 found for farming and 42 for mining.

Pests Abundant.—The reports of state authorities show that weather conditions have brought about appearance of plant enemies, especially the worms, in large numbers. State farm advisors are busy answering calls to fight various nuisances. As yet the grain pests have not been extensively reported.

Closer to Mark.—The report on inspection of fertilizers sold in Pennsylvania last fall, which is just issued, shows that the number failing to meet guarantees was less than in the spring but exceeded the number found short in 1916. The increase in the selling price is remarked, while vigilance in watching brand markings is suggested.

More Buckwheat.—If the buckwheat seed problem can be solved there will be a greater acreage of buckwheat this year in Pennsylvania than ever known before. In a number of counties farmers have sent word that they want to utilize land which they could not plow earlier. The only danger is that the production may be so great that the popular appetite may not be educated up to absorbing it. This would seem to be a fair ground for state co-operation.

Against Crossings.—Some of the decisions of the Public Service Commission lately have been against grade crossings on the ground that they are not needed and it is very plain that few crossings unless required for war traffic will be authorized and most of them will be for the period of the war only. A recent decision requires a siding owned by one firm to be used by another instead of allowing the second one to build its own.—Hamilton, Harrisburg, June 3.

NEW YORK LETTER

State Aid in Draining.—The State Food Commission has arranged for the use of twelve power ditching machines to be used by the farmers of the state under direction of former Commissioner of Agriculture, Calvin J. Huson. The machines will go to those sections having the most of this work to do, and where farmers' organizations are most complete. Cayuga County will have a machine, having organized for this purpose last year. The machine, a 4-cylinder power, will be in operation the first of next week and has a capacity of 7½ rods an hour, digging a ditch 15 inches wide and 5 feet deep if necessary. Most ditches are but three feet. The organization furnishes fuel for the machine, the operator, and provides a fund for depreciation. The state furnishes an expert to aid the farmer in mapping out the ditching, and the farmer pays 50 cents a week and boards the operator and his assistant.

Fruit and Muck Farm Workers.—Miss Ethel Arey's district of 11 counties of the western part of the state has 1,200 calls for women workers on fruit and muck farms. Over 200 have been arranged for in camps of ten each, with a supervisor to act as agent for the women. Chemung County has two new women's work camps—at Big Flats and at Southport—with an active campaign led by Mrs. Louise Rogers and ten Elmira College girls to assist in securing more workers. Miss Lillian Huffcutt is doing similar work in Broome, Schuyler and Tompkins Counties. Central New York has already been quite completely organized for farm work for women.

State's Output of Sweets.—It is now known that this spring's output of maple products in this state was increased 26 percent over last year's. Part of this, or 20 percent, was due to large number of trees tapped—but the greater part was due to favorable conditions for flow of sap. The production of hard sugar was 3,732,999 pounds, an increase of 65 percent over last year, due partly to scarcity of tin for syrup cans. Syrup production reached 1,755,000 gallons.

Milk Notes.—Farmers express dissatisfaction over the prospects of $1.80 for June milk. Auburn's Parent-Teachers' Association asks for a milk station for city schools—where a baby clinic will be established. The owner of one of the finest dairy farms in the country recently refused an offer of $50,000 for his farm in Cobleskill, with stock and tools. The monthly milk checks from this farm have reached $3,200. Last week's prices on cheese have prevailed on most of the dairy boards this week, or from 21¼ to 22 cents. Watertown and other boards report many cheese factories not in operation—owing to poor prices for cheese.

Sheep Breeders Organize.—The sheep owners of Cortland County have completed their organization. The annual fees are $1 each—with the use of the Farm Bureau office as headquarters. The charter membership was 29—with the list growing. This year they will pool their wool sales with the Tompkins County Association. A thoro canvas of the dog question will be made, licenses enforced and stray dogs put out of the way. Over $1,500 loss was suffered by the sheep owners of the county last year from the work of dogs. Dr. J. C. Stevens, of Cortland, is the president of the new association and L. C. Greenwood, of McGraw, is secretary-treasurer.

Women Enrollment.—The enrollment of women that they may vote in the primaries when candidates are selected has been very light in the cities of the state when only one day was given to enroll, May 25th. In consequence, the old political parties are making a thoro canvas of women in rural sections, where they are given a month to enroll. Women seem loath to sign up as favoring candidates from the old parties and, especially in the country, would like to see rural interests better represented in the candidates chosen for Albany and Washington. A good time to spread propaganda favoring "more farmers in the legislature," the motto of the new state federation of agriculture.

COUNTY NOTES

Lawrence Co., Pa., (WC) May 30. —Excessive rains and exceedingly hot and sultry days have retarded farm work. A near approach to a cloud burst last evening with very heavy electrical storm. The ground was just getting in condition for work after a previous heavy rain, and now our heavy, undrained clay land will not do to work for another week. A few fields of corn are growing but much of it is not planted yet. Some were just beginning to plant yesterday when the deluge came, and some were harrowing. All are stopped now. Oats were all sown on time and are growing fast. Wheat wintered poorly and many fields are not worth saving. Rye is a good crop and is now in bloom. Hay promises an abundant crop and is much helped by the frequent rains. Potatoes were being planted when the last heavy rain came. Apples, peaches and small fruits will be abundant. All live stock is scarce and dear except horses which are very cheap. Much truck and tractor work here. Sucking pigs sell at $6 each and more, and are scarce at that; farmers are driving from 10 to 20 miles to get them. All kinds of feed are dear and the stock of feed on hands in this section is very small. Prices may go much higher before next harvest. Many of our farmers have bought tractors and more are experimenting with them with a view to purchase. The concrete highway from New Wilmington to New Castle is progressing nicely and is expected to be one of the finest ever built. Potatoes, $1 bu; eggs, 45 cents; butter, 62 cents; other farm produce at proportionate rates. These prices seem high but with prices of labor and supplies, farmers will make very little money until after the war is over. A large number of school boys came out from Pittsburgh about two weeks to help the farmers. They are listed as the Pennsylvania Reserves. The Class of '68 of the Westminster College, of which the writer was a member, held its 50th reunion yesterday. Only 15 of the original large class are left and very few can survive to a 60th reunion.—J. C. M. Johnston.

Lancaster Co., Pa., (SE) May 30. —The clover crop promises to be the best for many years. Wheat is, for the most part, thin on the ground, but the recent electric storms have greatly improved the appearance of this all important crop. Corn is all planted, and came up much better than the farmers expected, but most of the farmers had their seed tested for germination and thus knew if their seed was to be depended upon or not. Tobacco acreage has not been increased. Plants are much earlier than usual, and quite a number of acres have been planted. There promises to be a large crop of cherries and apples, also blackberries and raspberries. Eggs have come down to 30 cents per dozen; butter, 50 cents; potatoes, 40 cents.—R. Chester Ross.

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Inter-State Association Notes

Watch The Milk Cans---Organization News

Milk Cans

The cost of maintaining a supply of milk cans, whether borne by the farmer, dealer or the manufacturer, has always been a heavy item of expense. Many are stolen or simply cast aside thru carelessness on the part of some one. Others are broken and dented by abuse and soon become unfit to hold milk. Still others are routed wrong on return trips and nobody takes time to return them to the owner. These losses were heavy enough before the war, but the cost of cans having now increased over three-fold, the temptation to steal is correspondingly greater. The over-burdened railroads are lowering their efficiency standards in this as in all other lines of service so that more returns are irregular and losses are increasing at an alarming rate.

All interests should immediately co-operate to improve these conditions, for in the last analysis it is the public that must pay for inefficiency and carelessness. All who use the cans belonging to others should be reported and punished. We have plenty of laws in existence to secure this. Every one should see that stray cans are sent back to the owner, and all can owners must keep in closer touch with their cans when out of the control of their own agents. The railroad officials need to be continually reminded of their responsibility in this matter, that the agents and trainmen do not become negligent, or the pressure of other traffic does not crowd out the important matter of the prompt return of empty cans for one of the necessities of life. We are endeavoring to sensitize the public conscience along this line and need all the agitation and the co-operation we can get. If you are troubled, write us.

Harrisburg Prices

The Harrisburg prices for May and June were agreed upon at a conference held in that city May 22nd. The retail price is to remain at 12 cents per quart, and the farmers' price reduced to 6½ cents f. o. b. Harrisburg on condition that there should be 1 cent per quart additional paid the farmers by the dealers next fall out of the normal spread allowed them by the Food Administration. This spread is, considering everything, as small here as anywhere in the United States. All the interests agreed to this arrangement. The producers were represented by a committee of the local association and by Vice-President Allebach and Secretary Balderston of the Inter-State; the dealers by Mr. Nissley of the Pennsylvania Milk Products Company and some others, and the public by the local Food Administrator Mr. Donald McCormick, Mr. Hershey of the Farm Bureau and Dr. King, Milk expert for the Food Administration.

In Delaware

A decided step has been taken to get closer co-operation between the Inter-State Milk Producers' Association and the Delaware Farmers' Protective Association. The latter held a meeting at Wilmington, Saturday, May 25th and the Inter-State Association was represented by the president, the vice-president and the secretary. After considerable discussion it was decided to consider further the matters of amalgamation and to meet Saturday, June 1st, for a final decision. Surrounded by the Inter-State Association, these armers realize the strength of organization and the safety of numbers and hope to be able to work out a plan that will make it all one organization on the Eastern Shore peninsula.

NATIONAL MILK AND DAIRY FARM EXPOSITION

The National Milk and Dairy Farm Exposition, held at New York City, May 20th to 25th, was one of the most complete shows of the kind every held in the East. Designed as a complete dairy exposition, it made its strongest appeal to the city consumers of milk and its greatest value was no doubt in instructing city consumers in the many details that go into the production, distribution, preservation and use of milk and its products. Exhibits of dairy equipment and everything allied with the production and handling of milk were shown on a large scale and the farmer visitors, who were not as numerous as they should have been or as they would have been at some more favorable time of the year, found much of interest and value to them. But most of the farmers are busy with timely farm work and it is almost impossible for them to get away to visit any show, regardless of its size or purpose. But for those in attendance, there was much inducement to come again when the show is to be held at an earlier date next year.

Among the features of first value in impressing the food value of milk on the city visitors were the exhibit of the Cornell University showing the processes of handling products from the cow to the consumer, with accompanying exhibits of cost; the exhibit of the domestic science department of the same university showing how milk may be used and distributing samples of the milk products that were of a quality to win lasting exponents of a milk diet; the exhibit of the now-famous Dr. McCollum feeding experiments showing the necessity of the vital elements of milk in the growth and maintenance of young animals, including babies.

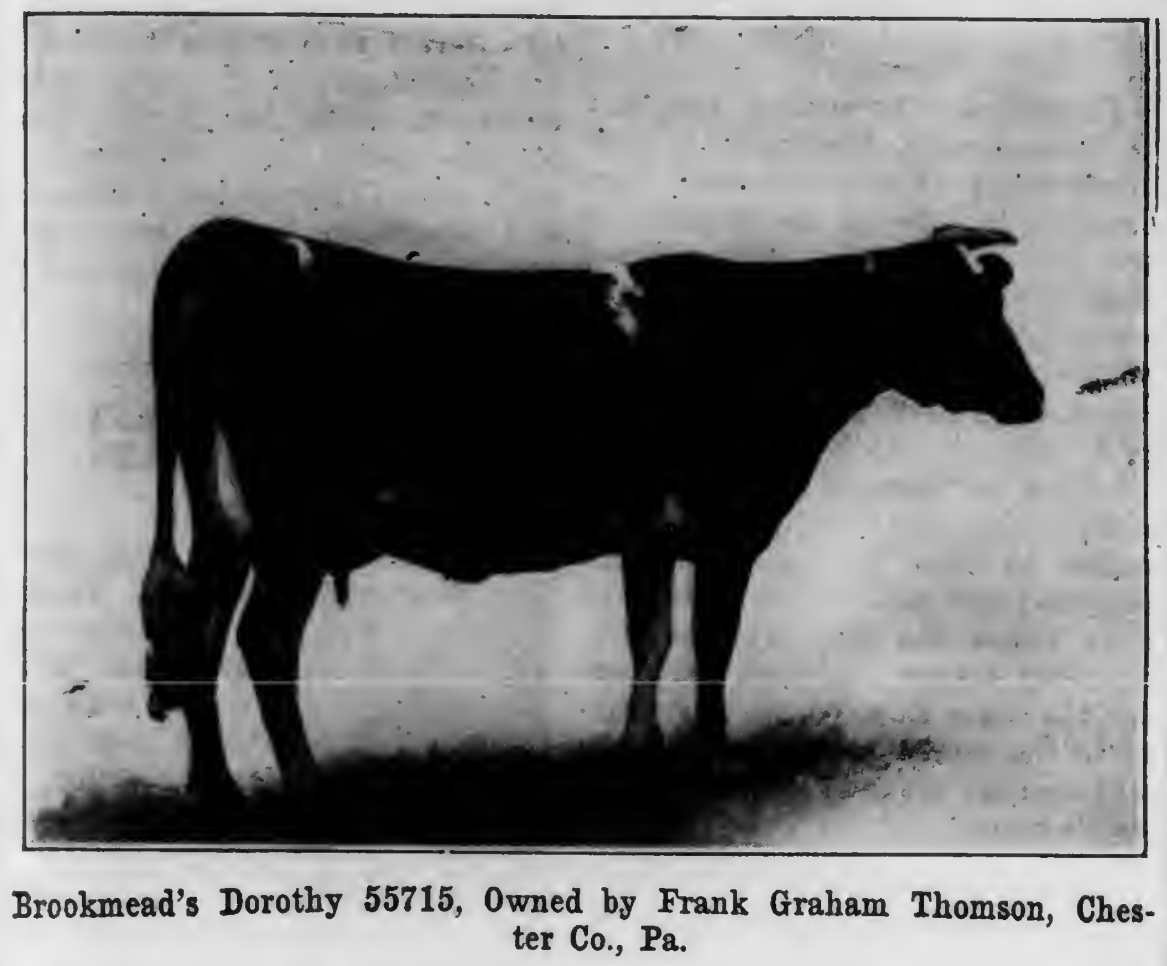
The program of talks and special features was well arranged to cover the entire field of dairying. The most important talk of the week was given by Herbert Hoover, in which he urged the conservation of the dairy herds and showed by camparisons with the fighting countries the importance of milk in the ration of our soldiers as well as of our civilian population. Mr. Hoover made the first cut in the "big cheese" and the first five-pound cut was later auctioned off for $1,000. A price of $200 per pound for cream cheese is a fair record even for war times, but as the money was donated to the Red Cross fund it may be permitted to rest as a record.

A NEW GUERNSEY CHAMPION

Brookmead's Dorothy 55715, a two-year and four months old Guernsey, owned by Frank Graham Thomson, Chester Co., Pa., has established a new breed record for cows of her class by producing in one year 14,179.4 pounds of milk and 742.08 pounds of butter fat. This record places this heifer at the head of Class G, an honor which has been held during the last three years by Cherry of Edgewater 38413.

Dorothy freshened on March 25, 1917, and was started on Advanced Register test April 1st, 1917. She produced 35.5 pounds of milk on the first day of her testing period, and 41.5 pounds on the last day. Her best day was May 16, 1917, when she produced 49 pounds. Her best month in milk production was her second, when she gave 1,354.8 pounds, and in her last month she gave 1,160.8 pounds. She further showed her persistency by producing within 700 pounds as much milk in her last six months as in her first six months, and 35 pounds more butter fat. Her highest month's production of butter fat was in January, 1918, her tenth month, when she made 72.78 pounds.

Brookmead's Dorothy 55715 was sired by Langwater Stars and Stripes 21872 A R., the sire of five Advanced Register daughters. Dorothy's dam, Hildie of Brookmead 42617 A. R., was bred and tested at Brookmead Farm, making a record of 12,599.2 pounds of milk, 632.5 pounds of butter fat with her second calf at three years and two months. Her record and breeding entitle her to be classed as one of the greatest cows in the May Rose family.



Brookmead's Dorothy 55715, Owned by Frank Graham Thomson, Chester Co., Pa.

WITH THE TESTING ASSOCIATIONS

The Montour Valley Cow Testing Association, Allegheny Co., Pa., has 27 members during its third year, with interest growing better each year. Results indicate that the work is of a continuous and permanent benefit to the members. For the month ending April 6th, the highest fat average per head was obtained by Mr. John W. Bells, with a herd of grade Holsteins and Jerseys, with 909 pounds milk and 35.1 pounds fat. Of the 475 cows enrolled in the Association, 404 were milking, with an average for the Association of 663 pounds milk and 24.5 pounds fat. Every herd is using a purebred sire and all but two of the members have one or more purebred females. Six cars of feed were bought by the members this last year.—C. R. Hill, Tester.

In the Grove City Cow-Testing Association, Mercer Co., Pa., Mr. A. C. Opre had the highest producing herd for the month of April. The herd is small, consisting of one purebred Holstein, one grade Guernsey and two grade Jerseys. The four cows produced 4,310.9 pounds of milk, containing 217.2 pounds of fat, or an average of 1,077.7 pounds of milk and 54.3 pounds of fat.—Geo. E. Watson, Tester.

In the Bergen Cow-Testing Association, Bergen Co., N. J., Mr. H. A. Davidson, with a herd of thirteen cows, both purebred and grade Holsteins, produced an average of 1,389 pounds of milk per cow. Mr. Davidson also has an A. R. O. cow, making 2,535 pounds of milk with 81 pounds of butter fat for the month of April, with a total feed cost of 94 cents per 100 pounds of milk.—M. S. Fountain, Tester.

In the Mercer County (New Jersey) Dairy Record Association the best herd for the month of April was that of J. W. Miller. It consisted of 24 cows. The total milk production for the 30 days was 20,406 pounds with 676.9 pounds fat; average per cow, 852 pounds milk and 28.1 pounds fat. His grain mixture cost $2.50 per 100 pounds (bought last summer) with alfalfa hay at $30 per ton, silage at $7.50 and fodder at 5 cents per bundle. At these prices the feed cost per 100 pounds milk was $2.01.—James G. K. Duer, Tester.

In the Middletown Co-Operative Cow Testing Association, New Castle Co., Del., Harold A. Batten had the highest producing herd for the month of April. His herd of 10 cows, consisting of Guernseys, Holsteins and Durhams, averaged 779 pounds of milk and 29.7 pounds of butter fat. His cows are of the common scrub type but thru careful attention being paid to their feed and by persistent testing and breeding up he is bringing the herd to a profitable standard. His highest producing cow for the month was No. 8, a Durham that made 1,401 pounds milk and 58.8 pounds fat. Mr. Batten also had the distinction of having the highest producing cow in the Association for the year 1917, thereby being awarded a prize of a registered bull calf. The record made by this cow, a Holstein, was 10.029 pounds of milk and 376 pounds of fat for the year. Mr. Batten weighs his milk every day and feeds accordingly.—Joseph Levitch, Tester.

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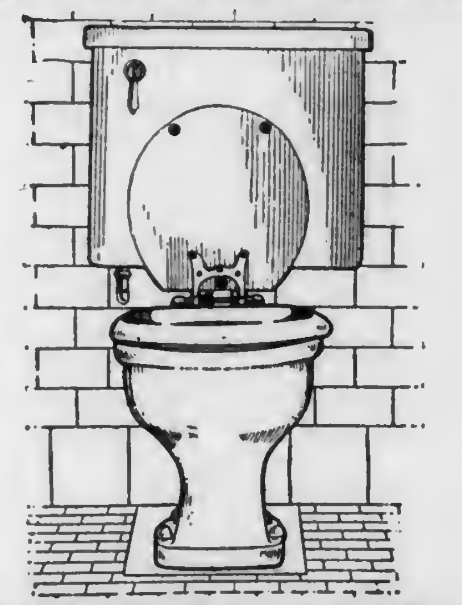

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Garden and Truck Crops

Cantaloupe Production

If the Colorado cantaloupe growers have as much trouble in getting their crops to the market as we are having right here next door to the market, the eastern cantaloupes should be in great demand. The vines may be spreading over the ground in splendid condition at this time and yet we fear that something may happen to carry away the foliage just as the fruit is completing its development. There is something that we can do at this time that will be very helpful in preventing this catastrophe, and it isn't spraying, either. Don't misunderstand me, spraying may be all right for those who have a first-class equipment, but most of us do not have it and if we did we might not have the time or the desire to spray. Frequent, shallow and late cultivation are helpful in maintaining moisture. The vines should not be compelled to complete the development of their fruits in competition with a lot of ravenous weeds. Furthermore, when the vines are giving up their very life strength for the growing fruits the foliage is left in a weakened condition so that it is an easy victim for blight. The greatest thing to help the vine to remain healthy and productive is to apply a dressing of nitrate of soda when the fruit begins to form. The extra yield obtained from sowing 150 pounds of nitrate of soda between the rows at the last cultivation is frequently worth $200 to the grower.

Side Dressing With Fertilizer

Many farmers could not get their shipments of fertilizer until after they had been forced to go ahead and plant their crop. Side dressing of potatoes, cabbage, early root crops, etc., may be all right but I believe that at least half of the fertilizer should be applied at planting time if the greatest benefit is to be obtained from the material used. Of course, side dressings may be very useful in finishing up a crop that is in need, provided the ingredients of the fertilizer used are made up of quick-acting materials.

Thinning Carrots

It is quite impossible to sow carrots and some other seed so that the stand will be just as we would like to have it. When the carrots are about two inches high they are usually weeded. At this time the thinning may be done most conveniently. Of course, it will take time just when we are rushed, but how about it when we are rushed worse than ever trying to get the crop pulled, topped and pitted in the quickest possible time? Carrots should never be allowed to stand closer than 20 to the running foot of row, and thinner would really be better. Thinning should not be a tedious job. Trying to select the weaker seedlings is a waste of time; just grab them by the handsful. Those that are left will soon become strong and produce a crop of uniform and desirable-sized carrots. Thus a little extra care at the right time will result in the production of a better crop and actually less work.

Setting Celery

Many home gardeners believe that celery should be set in a trench so that it will be easier to bank the soil up to it. As a matter of fact, that celery which is to be stored for winter use should be banked up only enough to hold the leaves together while it is growing. Commercial growers usually set their celery on level ground and I have seen some of the very best growers set their plants on a specially prepared ridge "so that the celery would have plenty of air and less blight". If you are thinking of setting your winter celery in a trench, think it over.

The long roots of the celery plants should be thinned back for convenience in setting. A doubled-up root system may become root bound and spoil the growth of the plant.—R. W. DeBaun.

FRUIT PROSPECTS IN PENNSYLVANIA

In general, the outlook for fruit in Pennsylvania this year is very much better than might have been expected in view of the severity of the winter just past. The peaches have been hit pretty hard in the north central and northeastern part of the state, many of the trees themselves being severely injured by the cold. But in the southern part of the state and some of the south central sections, and also up in the lake region of Erie County the peach prospects are unexpectedly good. In some places the crop will be considerably higher than last year, but for the state as a whole, the probabilitities are that the peach crop will average about 70 percent of last year's crop.

In the case of the apples there seems to have been an unusually large bloom practically all over the state. In the central part of the state the present prospects indicate at least twice as many apples as were produced last year. In most of the southern section where the production is greater the indications point toward about the same amount of apples as last year.

Fire Blight Appearing.—In some parts of the southern section of the state the usually heavy bloom furnished unusual opportunity for the blossom blight, which is caused by the same bacterial organism as the ordinary fire blight of twigs and limbs, and both phases of this blight are already appearing in some of the best orchards in the southern part of the state. This has naturally reduced the amount of fruit set to a very considerable extent in some cases, and it is yet too early to state just what the final effect will be of this disease. The blight is a very difficult disease to control. This is especially true of the blossom phase of it, as no form of cultivation will affect the resistance of the blossoms to infection. The twig and canker phases of the disease can often be kept under fair control when taken in time. Perhaps the best method of doing this is to check the growth of the trees by keeping them in sod for at least a season or two, omitting fertilization and any other treatment which tends to stimulate growth, and then keeping a sharp watch of the twigs and cutting off and burning every twig which shows any sign of the disease just as soon as possible after the disease appears.

These cuts should be made at least a foot below the external evidence of the disease wherever possible, and both twigs and tools should be disinfected after every cut. The best disinfectant is a solution of corrosive sublimate used at the rate of one tablet dissolved in a pint of water. These tablets can be purchased at any drug store. The trees should be thoroly inspected at least twice a week during the first half of the growing season, and every twig which shows even a slight wilted tip, as a result of the disease, should be cut out on sight. After this process is definitely started the amount of cutting required at each inspection will gradually become much less.

If the disease could be thoroly eliminated from the twigs and cankers in this way the sources of infection for the blossoms in the following season would naturally be eliminated. Any one having an especially severe case of blight infection this year in any of its phases should correspond with Mr. E. L. Nixon, of State College, who has been making a special study of this disease and who is able to furnish any further advice on this subject which may be needed.—J. P. Stewart.

CONTROL OF CURRANT OR GOOSEBERRY WORMS

Many fruit growers and farmers are familiar with the little green worm having black dots scattered along its body which strips the gooseberry vines and currant bushes of their leaves in early spring. This very injurious insect pest to currants and gooseberries is likely do damage to such plants every year unless some measures are adopted for its control.

The insect is very easy to control by spraying. The best and most practical spray to use is arsenate of lead, says T. J. Talbert of the University of Missouri College of Agriculture. In small quantities the arsenate of lead should be used at the rate of four tablespoonfuls of the arsenate of lead paste to one gallon of water, or two tablespoonfuls of the powdered arsenate of lead to one gallon of water.

This liquid spray may be applied by means of the bucket pump sprayer, knapsack sprayer, or the small hand atomizer. In making the application, it is necessary that every leaf and bud be thoroly wet and covered by the poisonous spray. This will force the little green worms to feed upon the poison.

A very effective dust spray may also be prepared by mixing one tablespoonful of the powdered arsenate of lead with about one pint of fine road dust or air slaked lime. The poisoned dust may then be sifted over the infested plants by means of an ordinary pepper can, talcum powder can, or tin can in the bottom of which a few small holes have been punched with a nail.

SPRAYING POTATOES BY THE COMMUNITY PLAN

(Continued from Page 3)

was 155 bushels. The figures showing the percent of increase due to spraying are not presumed to be absolutely accurate, since none of the farmers could afford the time to have test rows and accurately check up results. However, the figures are what each farmer estimated the increase to be as he judged from his neighbors' fields, occasional short rows that were left unsprayed, and the ends of rows that were missed in spraying. As a rule, this test showed that thoroness pays. For example, the best protection from blight was observed on the fields of Ardell, Gardner and Gray which were sprayed six times. It is interesting to note that one spraying only may prove profitable. On Raymond Crouch's fields, the part sprayed only once yielded 27 bushels more per acre than the part receiving no application at all.

In most cases the spraying was done on the community plan and a large part of the success of the season's work is due to the care taken by the community sprayman, Mr. Wm. Demorest. The average time consumed per acre for the season was 55 minutes and this time includes the time on the road between farms and the delays due to breakdowns. The cash expenses to the farmers were around $7.80 per acre for the six sprayings which is $1.30 for each. These include copper sulphate, lime, machine rent, men, horse labor and bug poison.

The benefit from spraying comes not alone in the increased yields. Sprayed potatoes were almost entirely free from rot and the marketable tubers were in larger proportion since there were fewer seconds. Finally, unblighted tubers will make better seed for next year since the blight lives from year to year in the diseased seed. Any farmer whose potatoes blighted badly would find it profitable to buy seed that is free from blight.

The community plan, in charge of an efficient director, works out far better than independent work in that it saves the outlay for several machines and may be placed in charge of one man who soon becomes adept at the work. He can give his time to the work when the farmer might be busy otherwise. Mr. Cookingham recommends a high pressure sprayer with fine nozzles.—Clarke M. Drake, New York.

ANTHRACNOSE DAMAGES BEAN PODS

One of the most serious diseases of the bean is bean anthracnose or bean pod spot. The disease occurs on the stem, leaves, and pods of the bean plant. It is most conspicuous on the pod where it does greatest damage. One or more sunken areas, covered with orange-colored spores, appear on the pod, and sometimes the whole pod is nearly coveerd with these areas. This renders the pod worthless.

The only effective way of controlling bean anthracnose is to use anthracnose-free seed. The disease is carried on the seed. These have been infected during their devolpment. The fungus lies dormant until the seed has been planted in the soil. If the seed grower would use special care in harvesting seed from none-infected pods, he could almost entirely prevent this disease, for the most effective way to prevent the disease is seed selection from pods free from the disease.

Many attempts have been made to control this disease by seed treatment. Various methods have been used to kill the fungus without killing the seed. These experiments, however, indicate that this method is not effective. The explanation is that the fungus is so deep seated in the tissues of the seed that the seed is destroyed when the fungus is killed. Thoro spraying of the bean plants during the growing season has given some results of value. The fungicide generally used is bordeaux mixture, the 4-4-50 formula. It should be applied to the plants about the time the pods are forming. Two or three applications should be made. The work, however, must be thoroly done if it is to have any special value. Probably, as a method of preventing the disease, spraying does not justify the expense involved.

The spread of the disease on the plants can be partially prevented by not cultivating the plants while they are wet. If they are cultivated while wet, the spores are distributed more or less widely on the plants.

HOW TO MULCH

Many times instead of cultivating the ground the gardener may effectively mulch it with various materials, and, to a large extent, obtain the same results as by cultivation.

The materials used for mulching are generally manure, straw, leaves, lawn clippings, or moss. Excelsior, sawdust, and shavings are of less value, for the woody matter may be a detriment, especially when turned under year after year in large amounts.

If manure is used, it should be applied at least two to four inches thick, having the thickest part of the layer in the center of the row. It is advisable not to put the manure against the plant because of possible injury or discoloration. Leaves of straw should be used in the same way.

From tests carried on at different experiment stations, it has been found that by mulching asparagus, rhubarb, cabbage, tomatoes, beans, cucumbers, celery and potatoes, the yields have been greatly increased; diseases have been less prevalent; the vegetables have been larger, and in some cases the quality of the product has been much improved. It has been found advisable, however, not to mulch lettuce, radishes, spinach, and a few other quick maturing crops because of the short time before the crop is harvested.

FERTILIZE LIBERALLY

The general farmer has to deal quite largely with quantity, while the gardener or even the trucker not only considers yield but also earliness, appearance and quality. His soil must contain in available form the right amount of plantfood to produce rapid growth. This is one great essential in the production of early vegetables of high quality. The system of cropping is intensive, and the returns justify expensive soil treatment.

Ordinarily, liberal amounts of various plantfoods can be supplied in the form of manure and complete commercial fertilizers.

Corn Harvest Help

WHEN you are wondering where on earth you will get help to cut or husk your corn this fall, remember this:

An International Harvester corn binder, with one or two men to handle the job, will cut six to eight acres a day, bind the corn into neat, easily handled bundles, and load them on a wagon to be hauled to ensilage cutter or husker and shredder.

Or, if you must leave the stalks in the field, a corn picker will take off all the ears, husk them, and load them direct into a wagon, also at the rate of six to eight acres a day.

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33x4	10.50	36x4½	13.00
34x4	10.50	37x4½	13.50

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30x3½	6.00	34x4½	8.50
32x3½	7.00	35x4½	9.00
33x4	8.50	36x4½	9.00
34x4	8.50	37x4½	10.00

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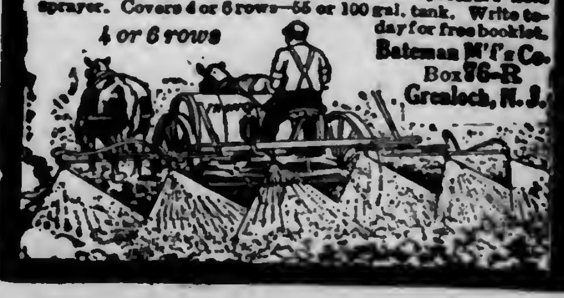

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Farm Products Prices and Prospects

NEW YORK WHEAT PROSPECTS POOR

Local Losses Fortunately Not Reflected in the Crop of the Nation as a Whole

For this season of the year the prospects for winter wheat in New York are the poorest ever recorded since crop estimates for the state were established. Fortunately for the country, this situation is largely local.

More than one-seventh of the winter wheat acreage in New York, or 75,000 acres, has been abandoned, and will have to be replanted with other crops. Probably these will be oats and barley; large acreages of these have already been planted. Last year 4 percent of the acreage was thus abandoned as the result of poor wintering, and this year's 15 percent is the largest ever recorded. The average of other years has been less than 3 percent, and the largest previous abandonment in the past 18 years was 13 percent. In addition to the large acreage to be replanted there are many bare patches too small to be replanted, and many fields which have a thin and uneven stand.

The damage to the wheat has been greatest in the western half of the state, altho none of the important wheat growing counties show much promise. There is an indicated yield of 17¼ bushels an acre or about three-fourths of a good crop.

In the chief wheat regions of the country as a whole, prospects have improved since the first of April. It is now estimated by the federal crop reporting authorities that the total winter wheat crop will exceed 570 million bushels. While this is 100 million bushels less than the bumper crops of 1914 and 1915, it is next largest to these and exceeds last year by 150 million bushels. The present estimate is 12 million bushels higher than the forecast of last month.

Rye Also Suffers

While rye has also suffered in New York it has not fared as badly as wheat. The area now remaining is estimated at 122,000 acres as compared with 135,000 last year. Condition is poorer than in any year since 1907, and is 84 percent as compared with 87 percent last year and 90 percent for the ten-year average.

For the country as a whole it is not much better, but it must be borne in mind that the acreage of rye has doubled since the beginning of the war.

Hay and Other Crops

New York seems destined to maintain good hay production almost in spite of itself. The area has been still further decreased this year, and stands at 4 million acres, as compared with 4½ million in 1916 and 4¼ in 1917. The present condition is 91 or a little better than last year at this time, when there was a production of more than 6 million tons. The production promised for this year is 5½ million tons.

Plowing is more than half completed, being a little less far along than last year, but a trifle ahead of the average. Planting, however, is not yet one-fourth done, and is thus further behind than usual.

All prices for the chief farm crops are good. Even potatoes, while much lower than during last year's scarcity, are better than the average of the years preceding 1917. This bears out the general statement made by agricultural authorities that staples, such as cereals, hay, potatoes, and eggs, are bound to be in demand during the period of the war.

FOREIGN WHEAT COMPARISON

Wheat requirements of European nations may be judged from figures compiled by the Food Administration.

The Western European Allies normally consume over 900,000,000 bushels of wheat annually, of which they import 400,000,000 bushels—nearly half. With present reduced harvests the Allies require much more.

The Central Powers on the other hand normally require for their total needs about 500,000,000 bushels of wheat, of which they raise all but 70,000,000 bushels. It will be observed that in peace times the Western European Allies receive six times as much wheat from other countries as do the Central Powers.

These facts emphasize the necessity for the United States to furnish the wheat which cannot be secured from India, Australia and other remote countries, because of shortage in ships.

POTATO GROWERS' MEETING

The important potato interests of New Jersey were discussed at a meeting of the Executive Committee of the State Potato Association in the State House at Trenton. Representatives of the potato growing counties and the farmers' exchanges of the state were present. The Executive Committee is divided into subcommittees for studies on particular subjects. The Publicity Committee reported that it was co-operating with the State Bureau of Markets and had been doing very effective work in Paterson and other cities of the state in increasing the consumption of potatoes; a movement beneficial alike to producer and consumer. The Committee on Fertilizers recently held a conference with Director Lipman of the Experiment Station and advised as to fertilizer experiments which would be profitable to potato growers of the state and these will be carried out this year.

The members of the Committee felt there was considerable uncertainty as to the stand which the Food Administration was taking in regard to grading and in order to clarify the situation sent the following telegram:

"Will the United States Food Administration enforce grade standards on all potatoes for shipment? Will dealers forfeit license if they ship ungraded potatoes? New Jersey State Potato Association needs definite advice at once."

The following reply was received by Secretary W. B. Duryee of the State Department of Agriculture:

"Yes, potatoes must be graded according to U. S. standard grades. Violators of Food Administration rules subject severe penalty."

The information is being distributed to the members of the Potato Association in order that all growers may know the situation they must meet in marketing their crop this year.

President Dilatush, of Robbinsville, advocated the holding of a summer meeting and this will be held on a potato farm in Monmouth County in the early part of July, the exact date to be set very soon.

FORERUNNERS OF FAMINE

Besides devastating conquered countries with fire and sword, and stripping them of all their surplus food supplies, the Germans have denuded most of their factories of their raw material, thus depriving the industrial classes of their sole means of livelihood. Picture the despair created by this paranoiac action that has first robbed its victims of all their capital, then, by supporting the conquering hordes on the scant native food supplies, forced upon the inhabitants the most hideous of all forms of suffering—starvation—and then used their starvation to break up families, deporting members to reinforce the depleted industrial ranks of the aggressors; and finally has drawn around this suffering thirty millions of innocent victims a steel curtain, so that the world cannot look on to sympathize or relieve, and you have a sum total of mental and physical anguish that staggers the senses.

In the National Geographic Magazine for April Frederick V. Walcott of the Food Administration makes a strong appeal to the American people to help feed our associates in the war. Mr. Walcott is the author of "Devastated Poland" and when he states that Germany has used famine as a weapon he knows whereof he speaks.

Nothing to compare with Germany's program has ever happened before in the history of the human race, says Mr. Walcott; this is the havoc that blackens the map of Europe, and it has been wrought deliberately by a single nation to further its own ends. For the last three and a half years the most powerful weapon in Germany's hands to complete the abject subjugation of her victims has been a food shortage.

Germany herself is short of food but conditions with her are better than they were, and better than in France unless we come strongly to the relief of our sister Republic. Because of the shortage of ships the Allies' cereal requirements of which they declared the irreducible minimum to be 25,000,000 tons, were arbitrarily cut at the Allied Conference in Paris to 17,000,000 tons. We are planning to supply them with this 17,000,000 tons of foodstuffs, but to satisfy even this reduced schedule will tax the people of the United States severely. But shall we not do it? There is but one answer.

STEADY MEAT ECONOMY NECESSARY

Meatless days have been for the time lifted and the American people are now being asked to economize on meat every day at every meal. All specific regulations of "when" and "how" are left to the "Commandant of the Kitchen." The Food Administration desires to secure continued economy and further reduction in consumption thru voluntary, intelligent response rather than thru regulatory expedients.

Shipments Abroad Heavy

It stands to reason that we can't send our meat to our soldiers and eat it, too. Roughly speaking, 75,000,000 pounds of meat and meat products of all kinds are shipped to our army and the Allies every week as against a pre-war normal of 15,000,000 pounds. It is easily seen that it is impossible to multiply our shipments abroad by five unless we divide home consumption pretty sharply.

Figures prove that the American people have been giving an intelligent response to the program mapped out by the Food Administration. During 1917 the consumption of pork dropped month by month and reached the lowest point in March, 1918. It is interesting to know that when the consumption of pork hit the low point the export of pork reached the high mark. Pork exports for the month totalled 308,010,711 pounds. The exports of beef also hit the high mark in March and totalled 87,244,388 pounds.

THE EARLY POTATO CROP

Detailed estimates of the early potato crop (white) in nine of the leading producing states of the south show an acreage of 206,000 against 209,000 last year. The condition on May 1 was reported as 81, indicating a production of 21,074,050 against a production of 22,028,450 bushels last year.

LOANS TO FARMERS

About one-ninth of the farm loan business of the United States was done by the federal loan system during its first year of active operation, just closing. A report just issued shows that since the first loans were extended last May, 40,451 loans, aggregating $91,951,000, have been closed. More than 126,000 farmers applied for loans, amounting to $299,948,000, and loans approved, including those closed, were $174,858,000. The total agricultural loans made in this country yearly are estimated at about $800,000,000.

The St. Paul Federal Land Bank did one-sixth of the federal business, and the Spokane bank was a close second.

Poultry

GETTING RESULTS FROM CHICKENS

"Results from Chickens" resolves itself into the subject of egg production. The improvement of meat breeds of poultry is a matter receiving very little consideration in this country compared with egg laying. And yet the average American hen, according to our Government census figures, lays only 85 eggs per year and at this rate it has been estimated poultry keepers are suffering an aggregate annual loss of $20,000,000 under present prices. On the other hand, heavy laying poultry is making more money for their owners over feed costs than ever before. Between six and seven dozen eggs from a hen used to pay for her annual feed cost, and whatever more she laid helped pay the other expenses and the profit to her keeper. Now it takes at least eight or nine dozen eggs to pay for the feed and most of the other expenses have increased also. What does all this mean? Simply that the egg yield must be increased to make poultry raising profitable and a real pleasure as it ought to be, and we speak from the standpoint of the poultryman or the farmer himself and those powers which are directly within his control. Discussion of market prices on eggs or on feed is not contemplated in this article. But it is a self-evident fact that if the poultry keeper can get more eggs from the same number of hens with the same expense or cost of production and with little or no more labor he is sure to reap rewards proportionate to the increase.

You can't "feed out" eggs that are not "bred into" a bird. All manner of good feed and good feeding won't make a hen lay if she hasn't the natural ability to do so under favorable conditions. Some hens do not lay simply because they are not bred to lay—they have not the ability—and to expect feed to "do the trick" is as sensible as to try and squeeze blood out of a turnip.

WASTEFUL MALE BIRDS

Seemingly every one does not know that hens will lay and fatten and be altogether as satisfactory when unattended by males. The usefulness of the male birds begins and ends with the hatching season, but, as a rule, their existence does not. Altho the hatching season may terminate in May or June, the males are very rarely dispensed with then. It may be quite well understood that some of them will not be held for next season, but nevertheless they are kept until autumn, and then sold for a less price than could have been obtained months before. It must be remembered that they contribute nothing whatever to compensate for their keep after the breeding season is over. It is generally the case that male birds, especially elderly ones, eat excessively. For ordinary individuals, two years should be the limit. The writer has observed that, as a rule, on the farms male birds are not often limited in numbers to what are actually necessary. Yet all of the surplus ones are profit reducers.—W. F. Purdue, Indiana.

DAMPNESS IN THE POULTRY HOUSE

Moisture on the ceiling of the poultry house is an indication of poor ventilation, overcrowding of the house with fowls, or both. It is a danger signal and should be remedied at once for in a very short time the litter will become damp and wet from the condensed moisture. Such conditions are sure to breed disease, especially chicken pox.

It must be admitted that it is a hard matter to keep the poultry house dry during some of the long spells of rainy, sunless weather frequent in the winter months, but it can be done.

The way the ceiling moisture is first started is usually by closing the house up too tight at night, causing the moist heat arising from the fowls to condense upon the ceiling. If the days are sunny the moisture evaporates, but when cloudy rainy spells prevail the moisture rapidly accumulates from two sources and soon becomes serious.

In the first place every poultry house should have muslin or duck screens in the front of sufficient size for the flock housed therein. In a house 16x20 feet—average height 6 feet—housing from 80 to 100 birds—we find it necessary to have two openings protected by duck screens each 4x3 feet. Not more than one of these screens is closed at night excepting in the most severe weather, as we have found that moisture will invariably collect on the ceiling if both are closed during the night. In a house ten by twelve feet in size containing 25 fowls we find one screen of the size mentioned sufficient, but it has been found absolutely necessary that that this screen be left open a few inches at night to avoid the collection of moisture on the ceiling.

Of course, curtains are used at the droppings boards and we find it best in mild winter weather to drop these and leave the front screens open rather than close the front screens and leave the droppings board curtain up.

Windows should be so constructed that they can be used for ventilating when beating storms make the opening of screens out of the question.

Another method of ventilating we have found very satisfactory is to cut a one foot square hole in the back wall of the poultry house as near the roof as possible and over the roosts. From this hole construct a tight shoot to carry the air over the heads of the fowls on the roosts and diffuse it over the ceiling. A hinged door, controlled by a rod passed down the shoot, should be placed over the opening. For a ten by twelve pen one such ventilator is sufficient, but two will be needed in a pen 20 feet long by 16 or 20 feet wide.

During stormy times in cold weather when the front screens cannot be opened sufficient ventilation can be obtained by opening the doors of the ventilator shoots, thus drawing a current of air thru the duck screens and out the shoots or vice versa.

These ventilator shoots are also a great help in cooling off the house in hot summer weather when all windows are open. In fact, we were unable to keep fowls in some of our large houses during very hot weather before these ventilators were installed.—J. Raymond Kessler, Chester Co., Pa.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 3, 1918.

The potato market is ruling very firm and active under supplies that are just about ample for the demands. Starting this week there were about 53 cars of new southern potatoes here, and practically all of them were sold on Monday, and supplies have been cleaning up daily ever since. Prices are about 50 cents per barrel higher than those prevailing a week ago. Best No. 1 barrels from Florida, $5.50, with heated and scabby stock from $4.75@5.25; No. 2's, $3@4 per barrel. South Carolina No. 1 barrels sold at $5@5.25, and No. 2's from $3@4. Florida sacks have sold from $4.25@4.65 for No. 1 stock with No. 2 drawing $2.50@3. Old potatoes are also showing a strong and upward tendency, and sales are now being made from $1.35@1.70 per cwt. as to quality. The old crop of sweet potatoes is nearly all marketed and prices are ruling high on the few remaining stocks, which are selling generally from $2.50@2.75 per hamper.

Vegetables

There has been practically no change in the asparagus market. Supplies are just about equal to the demand with Collossal selling from 20@27c per bunch; fancy, 15@22c; prime, 10@17c; culls, 7@12c. There is but very little Maryland and Delaware asparagus now arriving and the market is unchanged at 8@20c per bunch. Beans have been in fairly liberal supply and while prices are lower than last week the market is firm and active on strictly fancy beans, both green and wax, at $1.75@2 per hamper. The bulk of the offerings, however, are only poor and ordinary, many being old and spotted and these are selling at low and irregular prices ranging from 75c@$1.50, as to quality. Dried beans continue in ample supply and while prices are unchanged the market is dull. Marrows are selling from $13.50@14 per cwt; pea and medium, $12@13; red kidneys, $12@13.50. The market on new beets is firm and active, especially in New Jersey and Pennsylvania stock which has just made its appearance on the market and is selling at 7@8c per bunch. Norfolk beets are bringing 5@7c per bunch. Old carrots are in light supply and firm. Nearby washed stock sell from $3@4 per barrel. New carrots are also in light supply and in good demand at 3@4c per bunch.

There has been a sharp advance in the cabbage market. Supplies have been light and under a good demand Norfolk and Eastern Shore crates are selling from $2@3.50, with barrel stock ranging from $1.25@2.25 as to quality. A few crates of corn have been arriving and selling from $3@5 per crate. Egg plants are again a trifle lower, with prices now ranging from $3@3.50 per crate, mostly $3@3.25. Nearby Pennsylvania and New Jersey kale is in liberal supply and selling from 65@75c per barrel. There have been a few lima beans on the market this week which have brought the fine prices of $6 per hamper. Practically all the lettuce now on the market is being supplied from nearby Pennsylvania and New Jersey points. Pennsylvania stock is selling from 75c@$1.50 a barrel, and New Jersey from 75c@$1.50 per box, with supplies fully equal to the demand. Mushrooms are practically unchanged from last week, selling generally from 20@40c per pound.

The onion market continues dull and draggy; $1.25 per crate represents the extreme outside price on best stock with most of the supplies being sold within a range of 65c@$1.15. New Jersey peas are now quite plentiful and prices are much lower than last week, ranging generally from 50c@$1.25 per basket. A few Baltimore peas have been on the market this week and sold from $1@1.75 per hamper. Parsley is lower under heavier supplies. Southern barrel stock is selling from $3@4 per barrel and nearby hampers from $1.50@2.50. Peppers are more plentiful than last week and the market shows another decline, prices ranging all the way from $1.75@3.25 per crate, as to quality. Radishes from nearby Pennsylvania and New Jersey points are moving slowly at prices ranging from 1@2c per bunch. Rhubarb shows very little change from last week, selling generally from 2@3c per bunch. Scullions are not so plentifull and the market is firmer and higher, ranging from $1@1.25 per 100. Nearby spinach is now in light supply and the market in good shape around $1.50 per barrel. Some Southern squash is meeting slow sales at $1@1.50 per hamper. Strictly fancy tomatoes continue scarce and the market upon such is firm and higher, the fancy 144 size selling readily at $5@5.50 per crate; choice 180 size at $4@4.25; gems or 216 size from $2.50@3. There are, however, many poor spotted, wasty tomatoes still arriving on the market which are irregular in price, selling all the way from $1.25@3.50 per crate.

Fruits

New Jersey strawberries are now in very liberal supply, but under a good demand strictly fancy berries are bringing fine prices. Good berries are selling generally from 10@14c per quart, with extra fancy berries at 16@18c and poor and weak from 6@8c. Some Southern blackberries are now arriving on the market and when strictly fancy are selling around 20c per quart. Some of them, however, are arriving in very poor condition and on these the market is very irregular at 5@12c per quart. Sweet cherries from Maryland and Virginia points are in good demand at from 20@30c per quart. Sour cherries from Delaware and New Jersey points are selling from 10@13c per pound. Southern peaches are in fair supply, but showing a wide range in quality and condition. Prices run all the way from $1.25@2.50 per crate. The first car of California cantaloupes of the season arrived Monday morning and sold from $8@10 per standard crate and $6@6.50 per pony crate. A few Honeydews from Florida sold at $4.50 per crate. Pineapples are unchanged at $3@5.50 per crate. Watermelons are scarce and bringing the fine prices of 50c@$1 each. Some Willow Twig barreled apples have sold up to $10.50 per barrel, while Winesaps have sold from $5@8 per barrel.

Poultry

The market on live fowl is very firm and active and prices are ruling from 3@4c per pound higher than last week. The supplies are light and under a good demand all fancy fowl are cleaning up promptly at 34@35c per pound. While spring chickens are somewhat lower than last week, supplies are still light and the market is cleaning up daily at 52@60c per pound, according to size. Supplies are gradually increasing, however, and lower prices than these are expected almost daily. Roosters are about steady at 21@26c, as to quality. Ducks are showing little or no change at 26@30c per pound.

Eggs

The egg market is showing a further slight advance over that reported in these columns last week. Strictly fine eggs are scarce and such, when here, sell promptly at 35c for current receipts, and 36½c for nearby firsts. Western firsts are selling at 35c and Western extra firsts at 36½c. There are now some eggs arriving on the market which are showing the effects of the hot weather and these are selling at lower and irregular prices as to quality and loss shown.

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YORK PRODUCE MARKET

York, Pa., June 3, 1918.

There were unusually large crowds of buyers at the Saturday afternoon markets this week. Strawberries, currants, a few cherries, and a large display of spring greens was in evidence. The finest of berries could be had for 10 to 12c per box.

Eggs.—30@32c per dozen.

Butter.—Country, 45@48c lb; separator, 48@50c lb. Milk, 10c quart.

Poultry.—Hens, 23@25c lb; springers, 40c; dressed, 75c@$1.75 each.

Vegetables.—Potatoes, 8@10c ½ pk; 40@60c bu; cabbage, 3@10c a hd; lettuce, 3@5c hd; beets, 6c bch; onions, 2@4c bch; radishes, 4c bch; lima beans, 18c pt; soup beans, 15c qt; corn meal, 10@12c qt; turnips, 20c ½ pk.

Fruit.—Apples, 20@40c ½ pk; strawberries, 7@15c bx; cherries, 15@25c bx; currants, 15c bx.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.15; rye, $2.25; bran, $2.60 cwt; shipstuff, $3 cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.60; oats, $1; rye, $2; bran, $48 per ton; middlings, $56 per ton.

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BALTIMORE PRODUCE

Baltimore, Md., June 3, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.25@1.50 cwt; do., New York, $1.25@1.50. Sweet potatoes, yellow, $6@6.50 bbl; $2@2.25 hamper. Asparagus, $1.50@2.25 doz. Beans, green, $1.50@2 basket; do., wax, $1.50@2 basket. Beets, 3@5c bch. Cabbage, new, $1@1.50 crate. Cucumbers, $1.50@2.25 crate. Lettuce, 30@50c basket. Onions, yellow, $1.50@1.75 cwt; spring, $1@1.25 per 100 bchs. Peas, $1.25@1.60 basket. Radishes, $1@1.25 basket. Tomatoes, $2.50@4 crate. Rhubarb, $2 per 100.

Fruit.—Strawberries, 8@12c; Eastern Shore, 9@14c. Cherries, nearby red, 10@12c lb; do white, 9@10c lb. Peaches, $1.50@2 carrier.

Butter.—Creamery, western, fancy, 44@45c; choice, 43@44c; pound prints, 46@47c; do., firsts, 45@46c. Nearby creamery 41@42c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 31@32c.

Eggs.—State, Pennsylvania and nearby, 34c; Eastern Shore and Virginia, 34c; Southerns, 33c.

Live Poultry.—Chickens, 30@35c; do., springers, 50@55c; old roosters, 18@20c; old hens, 33@34c lb; ducks, 25@28c; pigeons, 35@40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $31; standard timothy, $30; No. 2 timothy, $29@29.50; No. 1 light clover mixed, $28.50@29c; No. 2 light clover, $26@28. No. 1 clover mixed, $27@27.50; No. 2 $23@26. No. 1 straight rye straw, $16.50@17. No. 1 tangled, $15.50@16; wheat straw, $14@15; oats straw, $15@15.50.

Grains.—Wheat, bag lots, $2.05@2.12 bu. Corn, bag lots, white, $1.45 bu; yellow ear corn, $1.47 bu. Standard white oats, 77½c; No. 3 white, 76½@77c. Rye, No. 2 western, $1.80; bag lots, $1.40@1.50 bu.

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LANCASTER PRODUCE

Lancaster, Pa., June 3, 1918.

Prices ranging between ten and twenty cents per box prevailed this morning for strawberries altho the market was veritably swamped with them. Fair offerings of country peas were also made and met a ready demand at twenty cents ¼ peck. Eggs were abundant but were held at 36 cents and more, higher than they were a year ago by several cents.

Butter and Eggs.—Creamery butter, 55c per lb; country butter, 50@55c per lb; fresh eggs, 36@38c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 8c per bunch; spinach, 20c per ½ pk; potatoes, 8@12c per ½ pk; do., 40@75c per bu; new potatoes, 20@30c per ½ pk; sweet potatoes, 25@30c per ½ pk; new peas, 40c per ½ pk; new beans, 25@30c per ½ pk; lima beans, 18c per pint; lettuce, 12@15c per head; celery, 5@10c per bunch; apples, 35@40c per ½ pk; strawberries, 10@20c per box.

Grain Market.—Milling wheat, $2.05 per bu; rye, $1.90 per bu; oats, 80c per bu; shelled corn, $1.40 per bu; No. 1 timothy hay, $20 per ton; mixed hay, $18 per ton; wheat straw, $17 per ton; oat straw, $10 per ton.—R.

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NEW YORK PRODUCE

New York City, June 3, 1918.

Butter firmer on top grades. Fresh eggs firmer. High grade eggs firm, but much stock is poor.

Butter. — Creamery, extras (92 score), per pound, 43¼c; higher score, 43¾@44¼; thirds to firsts, 35@44; state dairy, 35@42½; ladles, 30@33c.

Cheese firm; receipts, 4,638; state fresh, specials, 23@23¼c; do., average run, 22½@22¾c.

Eggs.—Irregular; receipts, 19,280; fresh-gathered extras, 37½@38c; fresh-gathered, storage-packed firsts, 35@36c; do., regular-packed, extra firsts, 35½@37c; do., firsts, 33@35c; state, Pennsylvania and nearby western hennery whites, fine to fancy, 41@42c; state, Pennsylvania and nearby hennery browns, 38@40c; state, Pennsylvania and nearby gathered browns and mixed colors, 30@36½c.

Live poultry firm; no prices settled. Dressed firm; chickens, 33@37c; fowls, 32@35c; turkeys, 25@38c.

Vegetables and Greens.—Asparagus, fancy $2@2.75 doz. bchs; prime, $1.50@2; culls, $1.25. Beets, per 100 bchs, $1@4. Onions, per 100-lb. bag, 50c@$2. Potatoes, Jersey, $1.75@2 per 100 lbs. Carrots, $1.25@2 per barrel. Scallions, per 100 bchs, $1; spinach, per bbl., 75c@$1.25.

Apples.—Baldwin, $4@8; Ben Davis, $3.50@5.50.

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PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 3, 1918.

Beef Cattle.—Steers sold fairly and ruled a shade firmer, with supplies well under control. Bulls and cows were pretty well cleaned up and steady. Calves were quiet and unchanged.

Steers, good to choice, $16@17.50, fair to good, $15@16; common to fair, $13.50@15; bulls, fair to good, $11@13; common to fair, $9@11; cows, fat, per lb., choice, 9@11½c; fair to good, per lb., 7½@9c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $16@16.50; fair to good, $14@15; common, $10@12; Tennessee and southern, $8@13.50.

Sheep and Lambs.—Trade was slow and the market ruled weak and lower. Offerings were moderate but ample.

Sheep, sheared, wethers, extra, $14@14.50; good to choice, $12.50@13.50; medium, $10@11; common, $6@8; ewes, heavy fat, $12@12.50; lambs, sheared, choice, $17@17.50; medium, $14@15; inferior, $9@11.

Hogs.—Buyers showed little interest and the market was easier. Some of the arrivals were of stock which had been delayed in transit. Quotations for best western, $18.50@19.

City Dressed Stock.—Prices of heifers were a shade easier under ample offerings and a light demand. Steers and cows ruled steady. Lambs and hogs were in light request and easier. Other kinds sold slowly at former rates.

Steers, 22@28c; heifers, 22@24c; cows, 18@23c; calves, 24@25c; southern and barnyards, 16@20c; country dressed, 20@22c; sheep, choice, 28@29c; lambs, 32@33c; hogs, 25¼c.

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LIVE STOCK MARKETS

New York City, June 3.—Beeves, receipts, 850; steady; steers, $11.50@18; bulls, $7.75@14.25; cows, $8@14.

Calves.—Receipts, 7,076; firm; veals, $12.50@16; culls, $11@12; skim milk, $10@11.

Sheep and Lambs.—Receipts, 5,400; steady; sheep, $11@14.37½; culls, $7@10; spring lambs, $20.50@22; other lambs, $14.25@16; wool lambs, $20.

Hogs.—Receipts, 5,100; firm; no trading.

East Buffalo, N. Y., June 3.—Cattle.—Receipts, 3,800; strong; prime steers, $17.25@18.25; shipping steers, $16.50@17; butchers, $12@16.85; yearlings, $16.50@16.75; heifers, $10@14.50; cows, $6.50@15.50; bulls, $7.50@13 stockers and feeders, $7.50@;1; fresh cows and springers, $65@150.

Calves.—Receipts, 2,300; strong; $7@15.50.

Hogs.—Receipts, 5,200; active and strong; heavy, $17@17.50; mixed, $17.65@17.75; yorkers, $17.75@18; light yorkers, $18@18.25; pigs, $18.25@18.50; roughs, $15.25@15.50; stags, $11@12.

Sheep and Lambs.—Receipts, 6,400; easier; lambs, $11@17.25; yearlings, $13@15; wethers, $13.50@14; ewes, $6@13; mixed sheep, $13@13.50.

Chicago, June 3.—Hogs.—Receipts, 18,000; closed steady at 20@25c advance over Saturday; big packers bought sparingly and about 5,500 hogs remained in the pens; selected lights topped at $16.95; bulk, $16.50@16.70.

Cattle.—Receipts, 15,000; good beef steers firm; others lower; top, $17.75; butcher cattle generally steady; choice heavy Dakota cows sold up to $14.75; calves active and steady; top, $14.75; stockers and feeders steady.

Sheep.—Receipts, 12,000; lambs lower; top, shorn, $17.25; California spring lambs, grading below choice, sold at $19; lightly sorted, some ewes, 25c lower; practical top, $13.50; no wethers or yearlings offered.

Lancaster, Pa., June 3.—Cattle.—Receipts, 663 head; market slow; receipts slightly higher; good to prime fat steers, $14.25@15.75; medium to good steers, $13.75@14.75; common to medium steers, $11.50@13; good to prime fat bulls, $11.50@13.25; medium to good bulls, $11.25@12.50; common to medium bulls, $10@11; good to prime fat cows, $9.25@10.50; medium to good cows, $8.50@9; common to medium cows, $7.25@8; medium to good bologna bulls, $5.50@6.25; common grade bologna bulls, $5.25@6; best grade calves, 14@15c per pound; plain grade calves, 10@12¼c.

Hogs.—Receipts, 158 head; market dull; prices lower; best grades, $18@18.50; roughs, $15@16.

Pittsburgh, Pa., June. 3.—Cattle steady; supply, 55 doubllo decks; choice, $11@15; prime, $12@13.

Sheep.—Lower; supply, 15 double decks; prime wethers, $13@13,75; cull and common, $5@8; lambs, $10@16.75; veal calves, $14@15.

Hogs.—Higher; receipts, 25 double decks; prime heavies, $17@17.25; mediums, heavy yorkers, light yorkers and pigs, $17.75@17.80; roughs, $14.30@15.25.

Baltimore, Md., June 3.—Lambs and Sheep.—Choice, fat sheep, 10@12c; fair sheep, 6@8c; inferior, rough head, $2.50@4; old bucks, as to quality and condition, 8@10c; spring lambs, fat, 35 to 40 pounds, 18@19c; do., poor to fair, 15@17c. Beef Cattle.—Young, fat steers, in prime condition, 11@12c; steers, under 1,000 pounds, 9@10c; oxen, 7@9c; bulls, 6@9c; large young cows, in good order, 7@8c; cows, poor to medium grades, 4@5c; fresh cows with calf, head, $40@75; poor, thin, meadow stock, 4@5c. Live Pigs.—Pigs, as to size and condition, apiece, $4@6; shoats, apiece, as to size, $6@8. Calves.—Choice, handy-weight veals, 15½@16c; do., heavy, fat veals, 15c; good veals, 15c; heavy, smooth, fat calves, head, $18@20; heavy or rough calves, head, $14@16; small, thin calves, head, $8@10.

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CHICAGO HORSE MARKET

Chicago, Ill., June 3, 1918.

Horses were in unusually small supply last week, and while the general demand on local and shipping account was not at all large, it was comparatively easy to maintain former prices. Drafters were quotable at $185@276, expressers at $75@240 and farm chunks at $60@200.

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PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., June 3, 1918.

Baled Hay and Straw.—Receipts, 24 tons of hay. Desirable grades of hay were well cleaned up and firm. Straw sold slowly, with moderate but ample offerings at former rates.

Timothy hay, according to location—No. 1 large bales, $30; No. 1, small bales, $30; No. 2, $27@28; No. 3, $22@24; sample, $15@18; no grade, $10@15; clover-mixed hay, light mixed, $27@28; No. 1 do., $25.50@26.50; No. 2, do., $18@20.

Straw.—No. 1 straight rye, $20.50@21; No. 2 do., $19.50@20; No. 1 tangled rye, $18.50@19; No. 2 do., $17.50@18; No. 1, wheat straw, $17.50; No. 2 do., $16.50; No. 1 oat straw, $17.50; No. 2 do., $16.50.

Corn.—No. 2 yellow, $1.70@1.72.

Oats.—No. 2 white, 81½@82c.

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NEW YORK HAY AND GRAIN

New York City, June 3, 1918.

Feed.—Interest in this market was at a standstill on Saturday. Prices were nominally steady, but there was no special demand. Mills are unwilling to offer freely either for prompt or distant shipment, but this does not make much difference under existing conditions. Consumers are anxious to secure supplies in transit, but aside from this will not enter the market until new crop stuff appears. Wheat conditions everywhere are reported excellent and bumper crops are confidently looked for. With this average maintained to harvest there should be no shortage of feed crops such as prevailed last season. Quotations (prompt Western shipment): Rye middlings, $53; oat feed, $19 per ton; barley feed, $43.50; linseed meal, per ton, $50; corn feed meal, $55.50 per ton.

Hay and Straw.—The market continues firm and lightly supplied at 33rd street, and a little better tone is developing in Brooklyn and other harbor points. Top quotations, however, are still high, except at 33rd street. where sales are occasionally reported at a premium owing to the very light offerings at that point.

Hay.—No. 1, prime, $29@31; No. 2, $25@28; fancy clover mixed, $25@27.

Straw.—No. 1 rye, $16@17.

Corn.—No. 3, $1.66.

Oats.—No. 2, white, 79@79½c.

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PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., June 3, 1918.

Butter.—The market was nominally unchanged, as the Produce Exchange was closed on Saturday and there was little wholesale trading.

Western, fresh, solid-packed creamery, extras, 44c; high-scoring goods, 45@46c; extra firsts, 43c; firsts, 41@42c; seconds, 38@40c; sweet creamery, extra, 45c; under grades, 40@44c; nearby prints, extra, 48c; jobbing sales of fancy brands, 49@51c; fair to good, 41@46c; garlicky, 35@38c.

Receipts, as compiled by the Bureau of Markets, 2818 tubs of butter and 12,497 cases of eggs.

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CHEESE MARKETS

At the June 3 session of the Utica Dairy Board of Trade, 2,800 boxes of cheese were sold at 21⅝ cents, an eighth of a cent less than a week ago. Butter sold at 42½ cents. On June 1, 6,500 boxes of cheese were sold on the Watertown market at 21⅝ cents.

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NEW YORK MILK MARKET

New York City, June 3, 1918.

Owing to dissatisfaction with the fact that retail prices had not been cut in view of the marked reduction in rate to the producers thru the agreement between the distributors and the Dairymen's League, John Mitchell, chairman of the Federal Food Board, asked the Federal Milk Commission to meet on May 31 and take action. The Commission met and set the price of Grade B loose milk at stores at 8 cents a quart for June, one cent less than for May, and cut the rate for bottled Grade B at stores from 13 to 12 cents a quart, with pints 6½ instead of 7 cents. These rates will help consumption in the poorer quarters. The hot weather Saturday and Sunday stimulated trade. The rates to the producer of Grade B in the first district are $1.80 a hundred for 3 percent; $2.04, or approximately 4.33 cents a quart for 3.6 percent; and $2.20 for 4 percent. Receipts of milk and cream in bottles for the week ending June 1 were as follows:

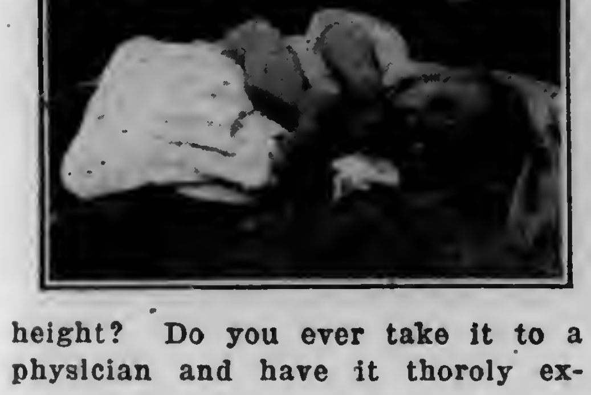
Railroad	Milk	Cream
Erie	40,513	3,428
Susquehanna	6,381	32
West Shore	12,110	1,210
Lackawanna	70,220	2,860
N. Y. Central (long haul)	135,164	4,351
Ontario	40,317	6,589
Lehigh Valley	53,022	3,505
New Haven	5,919	107
Pennsylvania	11,890	275
Other sources	7,690	260
Totals	383,216	22,617
Same week last year	393,659	21,652

Care of Baby In Summer

Conserve Future U. S. Citizens

By MRS. MANTHEI HOWE

(Editor's Note.—Mrs. Howe is the wife and first assistant of a physician with a large practice among little folks, and these articles, which will appear serially for a few weeks, are the result of his experience in trying to help parents keep their children growing normally. Do you really know whether your baby is normal? Do you know how much it should weigh for its age and height? Do you ever take it to a physician and have it thoroly examined, weighed and measured and compared with normal standards for its class? Send to Miss Julia Lathrop, in charge of the Children's Bureau, U. S. Dept. of Labor, Washington, D. C., for instructions how to determine this at home yourself.)



With all the talk of preparedness, there is one phase that is as important as armament and an army, and that is preparedness for proper protection and safeguarding of the health of our babies. Everything that will lower the death rate of children is of the utmost importance.

Because every summer there is a harvest of death among the babies, and because most of these deaths are due to improper or faulty feeding, food is the first subject to consider in any series of articles dealing with the care of baby.

It has been quite accurately estimated that one-fourth of all children born die before reaching their fifth birthday. About half the deaths among babies are due to some form of intestinal disease resulting from improper feeding, water, over-exposure to heat, improperly cared for milk, infection from flies and dust. The farm home ought to be the healthiest place on earth for the baby, and yet sometimes it is almost the worst.

The best food for the baby is a normal mother's milk. The breast-fed child has 90 percent better chance of health than the bottle baby, especially in warm weather. There are a few cases where the mother must not nurse the child, i. e., if she has a chronic disease, or if she is forced to work so hard that she cannot keep in proper physical condition, if the milk is of poor quality, or if she is tubercular. If there is any way to arrange the life of the family, the daily work and similar details, so as to enable the mother to nurse her baby, it should be done. Nothing should be left undone to make it possible for baby to have the food that is best for him.

The nursing mother on the farm should be especially careful not to nurse the baby while she is decidedly over-heated. If it is impossible to avoid this, then a teaspoonful or two of milk should be pumped out before putting the baby to the breast. The mother should get out of doors as much as possible. The busy mother on the farm has plenty of physical exercise in her housework. For her we prescribe at least an hour out of doors every day spent in sewing, reading or just resting. Everything should be done to give the mother unbroken rest at night.

She may eat whatever she pleases in the way of a mixed diet provided it does not disturb digestion, altho onions, cabbage and cucumbers are generally not desirable for the nursing mother. Tea and coffee should be used sparingly. Milk should be taken with the meals or during the day. When the mother's work is heavy and the breast milk tends to decrease she should drink besides a glassful at meals a glass of milk each mid-morning and mid-afternoon and at bed time. While it may seem that the nursing mother requires a good deal of care and attention, viewed from every angle it is cheaper, better, easier and safer to keep the child breast-fed rather than resort to artificial feeding.

In case artificial feeding does become necessary, we must remember that most authorities agree that cow's milk, modified in some way, is the only satisfactory substitute for mother's milk. We will not stop now to give the reasons for not depending on prepared foods. Here are a few of the things to remember about the milk supply from which the artificially-fed baby on the farm gets its food: 1. Use every precaution in milking and care of cows that is necessary for production of first-class milk. 2. It is better to use milk from a herd rather than from one cow. 3. Keep the flies away from the milk. 4. The milk to be used for the baby should be strained thru three thicknesses of cheese cloth, put in a covered receptacle and placed on ice or in cold water or some cool place where the temperature is no higher than 50 degrees Fahrenheit. 5. Do not use milk over 24 hours old for the baby.

If it is not possible to follow all these directions, then the milk must be pasteurized, but do try to make the milk safe enough for baby to eat raw, because it will thrive so much better on it since pasteurizing destroys more or less the important growth-producing substances in raw milk. The milk used for pasteurization should be fresh and as nearly pure and clean as it is possible to get it.

All the utensils used in the preparation of baby's food should be kept by themselves in a cupboard so they will not get mixed with the dishes for family use, and should never be used for anything except baby's food. Surgical cleanliness should govern the care of these utensils and supplies.

Wash the bottles thoroly with soap and warm water, scouring the inside of the bottle with the bottle brush; rinse the bottles and until you want to use them keep them filled with cooled boiled water containing dissolved borax. Cover the bottles with a cloth to keep from dust and flies. The rubber nipples should be boiled every morning and then soaked in a covered cup containing boracic acid and water.

YEAST'S EFFECT ON CORN

I am indebted to Charles H. Darlington's "Food Pointers for Live Cooks" in April 13 issue, for altho with the serious disadvantage of a lifetime of wheat cooking behind me, I find it yet quite possible for me to take advantage of his mostly sensible advice. But may I correct him on one point—where he says that yeast will not work on corn? My experience is that yeast will work on corn meal in the sponge if the meal is well cooked, and if not more than 20 percent of meal is used; very good bread can be made thus.

I also have found that 1 cup of finely mashed potato in the sponge per 6 cups of wheat flour makes very nice rolls or bread.

In my young days mush was depended on for a hearty supper for a large family of children and grown-ups, at least twice a week. To correct its tendency as a purgative, my mother used to stir in a cupful of wheat flour. And this is now my custom. Considering my fifty years' experience with the dish, I do not hesitate to declare cornmeal mush a most healthful and delicious food.

No doubt city and town women, because of its convenience, have relied so largely upon bakers' bread that bread making of any kind has become largely a lost art with them, especially bread making with the coarser meals. But many country women are not needing to make great changes in their baking or menus these days because we have been accustomed to use the meals. For example, in our family, for many years oatmeal bread has been one of our standbys; also corn bread (Indian bread, we call it) from the habit of our ancestors. My recipe published in May 25th issue of Pennsylvania Farmer makes bread that has taken premium at more than one Susquehanna County fair. I also append a recipe for truly delectable salt-rising bread. At least two of my great grandmother's great grand-daughters are carrying on her coarse cereal bread recipes.

Salt-Rising Bread With Cornmeal

Early in the morning stir up 1 teaspoonful unsifted cornmeal (I see no reason why the granulated meal will not answer quite as well), a pinch of salt, ½ teaspoon sugar, ¾ cup hot but not boiling water. Then stir in enough flour to make a thin batter. Make this in a bowl or pitcher which can readily be placed in a crock of warm water. Cover tightly and set in a warm place, warm enough so that temperature may be maintained at about 100 degrees. When bubbles begin to form in five or six hours, stir in a little more flour. When the yeast foams to the top of the bowl, mix in 1 quart of quite warm, not just lukewarm, water, your sifter full of flour, 1 tablespoon sugar and 2 tablespoons melted fat. Then knead into stiff loaves. Be sure to keep the dough warm at all stages.—Mrs. H. B. J., Susquehanna Co., Pa.

A light ladder and a small chemical fire extinguisher under a shed where they will be handy may save their cost several times over.

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Given for two subscriptions to Pennsylvania Farmer to Jan. 1, 1920 at $1.00 each.

PENNSYLVANIA FARMER
261 S. Third Street Phila., Pa.

Two Pairs of Shoes

By Joseph C. Lincoln

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(Continued from last week)

The marrying of Peter and Ebenezer's Belle was done about eight o'clock and done with all the trimmings. All hands manned the yards in the best parlor, and Peter and Belle was hitched. Then they went away in a swell turnout—not like the derelict hacks we'd seen stranded by the Cashmere depot—and Jonadab pretty nigh took the driver's larboard ear off with a shoe Phil gave him to heave after 'em.

After the wedding the folks was sitting under the palms and bushes that was growing in tubs all over the house, and the stewards—there was enough of 'em to man a four-master—was carting 'round punch and frozen victuals. Everybody was togged up till Jonadab and me, in our new cutaways, felt like a couple of moulting black birds at a blue-jay camp-meeting. Ebenezer was so busy, flying 'round like a pullet with its head off, that he'd hardly spoke to use sence we landed, but Phil scarcely ever left us, so we wa'n't lonesome. Pretty soon he comes back from a beat into the next room, and he says:

"There's a lady here that's just dying to know you gentlemen. Her name's Granby. Tell her all about the Cape; she'll like it. And, by the way, my dear feller," he whispers to Jonadab, "if you want to please her—er—mightily, congratulate her upon her boy's success in the laundry business. You understand," he says, winking; "only son and self-made man, don't you know."

Mrs. Granby was roosting all by herself on a sofy in the parlor. She was fleshy, but terrible stiff and proud, and when she moved the diamonds on her shook till her head and neck looked like one of them "set pieces" at the Fourth of July fireworks. She was deef, too, and used an ear-trumpet pretty nigh as big as a steamer's ventilator.

Maybe she was "dying to know us," but she didn't have a fit trying to show it. Me and Jonadab felt we'd ought to be sociable, and so we set, one on each side of her on the sofy, and bellered: "How d'ye do?" and "Fine day, ain't it?" into that ear-trumpet. She didn't say much, but she'd couple on the trumpet and turn to whichever one of us had hailed, heeling over to that side as if her ballast had shifted. She acted to me kind of uneasy, but everybody that come into that parlor—and they kept piling in all the time—looked more'n middling joyful. They kept pretty quiet, too, so that every yell we let out echoed, as you might say, all 'round. I begun to git shaky at the knees, as if I was preaching to a big congregation.

After a spell, Jonadab not being able to think of anything more to say, and remembering Phil's orders, leans over and whoops into the trumpet.

"I'm real glad your son done so well with his laundry," he says.

Well, sir, Phil had give us to understand that them congratulations would make a hit, and they done it. The women 'round the room turned red and some of 'em covered their mouths with their handkerchiefs. The men looked glad and set up and took notice. Ebenezer wa'n't in the room—which was a mercy—but your old mess-mate, Catesby-Stuart, looked solemn as ever and never turned a hair.

But as for old lady Granby—whew! She got redder'n she was afore, which was a miracle, pretty nigh. She couldn't speak for a minute—just cackled like a hen. Then she busts out with: "How dare you!" and flounces out of that room like a hurricane. And it was still as could be for a minute, and then two or three of the girls begun to squeal and giggle behind their handkerchiefs.

Jonadab and me went away, too. We didn't flounce any to speak of. I guess a "sneak" would come nearer to telling how we quit. I see the cap'n heading for the stairs and I fell into his wake. Nobody said good-night, and we didn't wait to give 'em a chance.

'Course we knew we'd put our foot in it somewheres, but we didn't see just how. Even then we wa'n't really onto Phil's game. You see, when a green city chap comes to the Old Home House—and the land knows there's freaks enough do come—we always try to make things pleasant for him, and the last thing we'd think of was making him a show afore folks. So we couldn't b'lieve even now 'twas done a-purpose. But we was suspicious, a little.

"Barzilla," says Jonadab, getting ready to turn in, " 'tain't possible that that feller with the sprained last name is having fun with us, is it?"

"Jonadab," says I, "I've been wondering that myself."

And we wondered for an hour, and finally decided to wait a while and say nothing till we could ask Ebenezer. And the next morning one of the stewards comes up to our room with some coffee and grub, and says that Mr. Catesby-Stuart requested the pleasure of our comp'ny on a afore-breakfast ice boat sail, and would meet us at the pier in half an hour. They didn't have breakfast at Ebenezer's till pretty close to dinner time, eleven o'clock, so we had time enough for quite a trip.

Phil and the ice-boat met us on time. I 'spose it 'twas style, but if I hadn't known I'd have swore he'd run short of duds and had dressed up in the bed-clothes. I felt of his coat when he wa'n't noticing, and if it wa'n't made out of a blanket then I never slept under one. And it made me think of my granddad to see what he had on his head—a reg'lar nightcap, tassel and all.

Phil said he was sorry we turned in so early the night afore. Said he'd planned to entertain us all the evening. We didn't hurrah much at this—being suspicious, as I said—and he changed the subject to ice-boats.

That ice-boat was a bird. I cal'lated to know a boat when I sighted one, but a flat-iron on skates was something bran-new. I didn't think much of it, and I could see that Jonadab didn't neither.

But in about three shakes of a lamb's tail I was ready to take it all back and say I never said it. I done enough praying in the next half hour to square up for every Friday night meeting I'd missed sence I was a boy. Phil got sail onto her, and we moved out kind of slow.

"Now, then," says he, "we'll take a little jaunt up the river. 'Course this isn't like one of your Cape Cod cats, but still——"

And then I dug my finger nails into the deck and commenced: "Now I lay me." Talk about going! 'Twas "F-s-s-s-t!" and we was a mile from home. "Bu-z-z-z!" and we was just getting ready to climb a bank; but 'fore she nosed the shore Phil would put the helm over and we'd whirl round like a windmill, with me and Jonadab biting the planking, and hanging on for dear life, and my heart that had been up in my mouth knocking the soles of my boots off. And Cap'n Catesby-Stuart would grin, and drawl: "'Course, this ain't like a Orham cat-boat, but she does fairly well—er—fairly. Now, for instance, how does this strike you?"

It struck us—I don't think any got away. I expected every minute to land in the hereafter, and it got so that the prospect looked kind of inviting, if only to get somewheres where 'twas warm. That February wind went in at the top of my stiff hat and whizzed out thru the legs of my thin Sunday pants till I felt for all the world like the ventilating pipe on an ice-chest. I could see why Phil was wearing the bed-clothes; what I was suffering for just then was a feather mattress on each side of me.

Well, me and Jonadab was "it" for quite a spell. Phil had all the fun, and I guess he enjoyed it. If he'd stopped right then, when the fishing was good, I cal'late he'd been fetched port with a full hold; but no, he had to rub it in, so to speak, and that's where he slopped over. You know how 'tis when you're eating mince-pie— its the "one more slice" that fetches the nightmare. Phil stopped to get that slice.

He kept whizzing up and down that river till Jonadab and me kind of got over our variousness. We could manage to get along without spreading out like porous plasters, and could set up for a minute or so on a stretch. And twa'n't necessary for us to hold a special religious service every time the flat-iron come about. Altogether, we was in that condition where the doctor might have held out some hopes.

And, in spite of the cold, we was noticing how Phil was sailing that three-cornered sneak-box—noticing and criticising; at least, I was, and Cap'n Jonadab, being, as I've said, the best skipper of small craft from Provincetown to Cohasset Narrows, must have had some ideas on the subject. Your old chum, Catesby-Stuart, thought he was mast-high so fur's sailing was concerned, anybody could see that, but he had something to larn. He wasn't beginning to get out all there was in that ice-boat. And just then along comes another feller in the same kind of hooker and gives us a hail. There was two other chaps on the boat with him.

"Hello, Phil!" he yells, rounding his flat-iron into the wind abreast of ours and bobbing his night-cap. "I hoped you might be out. Are you game for a race?"

"Archie," answers our skipper, solemn as a setting hen, "permit me to introduce to you Cap'n Jonadab Wixon and Admiral Barzilla Wingate, of Orham, on the Cape."

I wasn't expecting to fly an admiral's pennant quite so quick, but I managed to shake out thru my teeth—they was chattering like a box of dice—that I was glad to know the feller. Jonadab, he rattled oose something similar.

"The Cap'n and the Admiral," ays Phil, "having sailed the raging main for lo! these many years, are now favoring me with their advice concerning the navigation of ice-yachts. Archie, if you're willing to enter against such a handicap of brains and barnacles, I'll race you on a beat up to the point yonder, then on the ten mile run afore the wind to the buoy opposite the club, and back to the cove by Dillaway's. And we'll make it a case of wine. Is it a go?"

Archie, he laughed and said it was, and, all at once, the race was on.

Now, Phil had lied when he said we was "favoring" him with advice, 'cause we hadn't said a word; but that beat up to the point wa'n't half over afore Jonadab and me was dying to tell him a few things. He handled that boat like a lobster. Archie gained on every tack and come about for the run a full minute afore us.

And on that run afore the wind 'twas worse than ever. The way Phil see-sawed that piece of pie back and forth over the river was a sin and shame. He could have slacked off his mainsail and headed dead for the buoy, but no, he jiggled around like an old woman crossing the road ahead of a funeral.

Cap'n Jonadab was on edge. Racing was where he lived, as you might say, and he fidgeted like he was setting on a pin-cushion. By and by he snaps out:

"Keep her off! Keep her off afore the wind! Can't you see where you're going?"

Phil looked at him as if he was a graven image, and all the answer he made was: "Be calm, Barnacles, be calm!"

But pretty soon I couldn't stand it no longer, and I busts out with: "Keep her off, Mr. What's-your name! For the Lord's sake, keep her off! He'll beat the life out of you!"

And all the good that done was for me to get a stare that was colder than the wind, if such a thing's possible.

But Jonadab got fidgetyer every minute, and when we come out into the broadest part of the river, within a little ways of the buoy, he couldn't stand it no longer.

"You're spilling half the wind!" he yells. "Pint' her for the buoy or else you'll be licked to death! Jibe her so's she gits it full. Jibe her, you lubber! Don't you know how? Here! let me show you!"

And the next thing I knew he fetched a hop like a frog, shoved Phil out of the way, grabbed the tiller, and jammed it over.

She jibed—oh, yes, she jibed! If anybody says she didn't you send 'em to me. I give you my word that that flat-iron jibed twice—once for practice, I jedge, and then for business. She commenced by twisting and squirming like an eel. I jest had sense enough to clamp my mittens onto the little brass rail.

(To be Concluded)

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Horse Has Cough.—I recently purchased a 15-year-old horse that is troubled with a cough. He has fairly good appetite for corn and hay, but is not fond of other kinds of feed. G. S., Lederach, Pa.—Doubtless this horse has been kept mostly on corn and hay, that is why he is most fond of it. When hungry he will eat other kinds of foods and a change would benefit him. Apply equal parts tincture iodine and camphorated oil to throat three times a week. Give him ½ dram fluid extract lobelia, ½ dram fluid extract belladona at dose in feed, 3 times a day. Feed him no dusty or musty badly-cured hay. Also dampen his feed.

Chronic Scratches.—Thick Leg.—I have a valuable young farm horse that had scratches in one hind leg. He was treated for several months before the sores healed. The disease has left him with an enlarged leg, about twice normal size, but he is not lame. His leg has not been sore since October, 1917. What I would like to know is, can his leg be reduced in size, and if so, how. H. B., Newton, Pa.—The writer is quite certain that you would make a mistake in treating this horse, for the leg is incurable. No matter what you give or apply, the result of treatment will surely be disappointing to you. It will do him good to be exercised daily, also give him ½ ounce Fowler's solution of arsenic at dose in feed or drinking water, two or three times a day. His legs should be kept dry and clean.

Irritation of Bladder.—Indigestion.—Collar Gall.—Have mare 9 years old that has never had a colt. When working she passes urine every 20 minutes and when idle makes water every 2 or 3 hours. She is always hungry, but is gradually losing flesh. I had her teeth floated a few weeks ago, have often changed her food supply, but it fails to help her. When she first began to run down I was feeding her whole oats and corn and she was doing only light work. Now I feed her oat chop, wheat bran and hay. Lately she has been troubled with collar gall. I wish you would tell me how to treat her as I need her work. V. A. H., Patton, Pa.—Give her ½ dram fluid extract nux vomica, 1 ounce tincture gentian and ½ ounce Fowler's solution at dose in feed or drinking water, three times a day. Also give her 20 grains boric acid at dose in feed, once daily. You had better increase her feed. Perhaps grain and grass would do her most good. Dissolve 1 ounce acetate lead and 1 ounce tannic acid in 1 quart of water and apply to sore shoulder, 3 times a day.

RECENT BULLETINS

Disinfection of Stables.—Farmers' Bulletin 954, of the U. S. Department of Agriculture, discusses disinfecting of stables. It gives directions for the using of bichlorid of mercury, chlorid of lime, formaldehyde, carbolic acid, crude carbolic acid, cresol, and compound solution of cresol. It also gives details in the work, such as preparation of the building, selection of the disinfectant and method of application.

Disinfecting Seed Grains.—Farmers' Bulletin 939 discusses cereal smuts and the disinfection of seed grains. Specific directions are given for the treatment of corn smuts, smuts of wheat and rye, smuts of barley, smuts of oats, smuts of millet. It gives a complete discussion of materials, apparatus and formulas. The bulletin is free for the asking addressed to the U. S. Department of Agriculture, Washington, D. C.

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Milking Shorthorns Bull calves bred from the best milking strains. for sale; also few heifers. C.M. Kennedy & Sons, Ulster, Pa.

Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M. E. Basehoar, Crystal Spring Stock Farm, Littlestown, Pa.

REG. Ayrshires. 5 cows, 5 yearling heifers, 5 heifer calves. Good breeding. Inquire
LENT BROS. WYSOX, PA.

Reg. Jerseys From some of the most noted blood in the world.
Fred G. W. RUNK, Woodlawn Farm, Allentown, Pa.

Reg. Shorthorn Cattle Young bulls and heifers.
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Miscellaneous

HAY
W. D. POWER & CO. 601 W. 33 St. New York
are the largest handlers of commission hay in greater New York: if you have hay to dispose of communicate with them.
HAY

PIPE second hand. Large stock all sizes furnished with new threads & couplings. Prompt shipment.
J. F. Griffith, 416 Moyer St., Phila.

For Sale Cow Peas $3.00 and $3.50 bushel. Soy Beans $3.50 and $5.00 bushel. Crimson Clover Seed $15.00 bushel.
JOSEPH E. HOLLAND, MILFORD, DEL.

HAY Ship To The Old Reliable House
Daniel McCaffrey's Sons
623-625 Wabash Bldg., Pittsburgh, Pa

Binder Twine Granges, Farmers' Clubs get our price. Farmer agents wanted. Write us. Theo. Burt & Sons, Melrose, Ohio

TWO RECORDS AT JERSEY SALE

Two notable records were established at the sale of 60 head of Jerseys at the Edmond Butler sale, Westchester Co., N. Y., on May 2. The Jersey cow, Oxford's Briar Flower was sold to Wm. Ross Proctor, of Sullivan Co., N. Y., for $10,000. The former record price for a Jersey cow was $7,000 paid for Lady Viola. The other record was in the average of the 60 head sold, the average for the entire sale being $1,001. The best previous average at a Jersey sale was $952, made at the T. S. Cooper sale, in 1883. Nineteen head at the Butler sale brought $1,000 each or over.

TIMELY BULLETINS

Poison Cutworms.—If cutworms bother, try feeding them a poison bait. Mix one pound of bran, one ounce of paris green, three ounces of syrup, one-half lemon and one and one-half pints of water. Mix the dry bran and paris green thoroly. Squeeze the juice of the lemon in and chop the remaining pulp fine and mix in the water. Dissolve the syrup in the water and wet the bran and poison with the mixture, stirring it to get all of the bran dampened down. Sow the damp mash broadcast on the infested area in the evening. If the cutworms are moving from one field to another, spread a strip of the mash along the edge of the field to which they are moving. For larger quantities, mix 20 lbs. of bran, one pound of paris green, two quarts of syrup, three oranges or lemons and three and a half gallons of water. The lemon or orange added insures the worms eating larger quantities of the bait.

Swat the Cat.—A Kansas zoologist says that tons of food are wasted by the feeding of worthless cats. Cats kill thousands of birds every year. These birds are important in holding insect pests in check. Cats carry germs of disease, such as anthrax and tuberculosis. They are of very little value as mousers, and they do a great harm in the two ways indicated.

Tuberculosis in Hogs.—Farmers' Bulletin 781, of the U. S. Department of Agriculture, discusses tuberculosis in hogs. Causes for the spread of tuberculosis in hogs include: Raw milk and slime from creameries, hand separated milk from tuberculous cattle, feeding after tuberculous cattle, feeding tuberculous carcasses of various animals including fowls, feeding slaughter house offal, feeding uncooked garbage. Methods of prevention and eradication are fully discussed. For copy of bulletin, address the above Department, Washington, D. C.

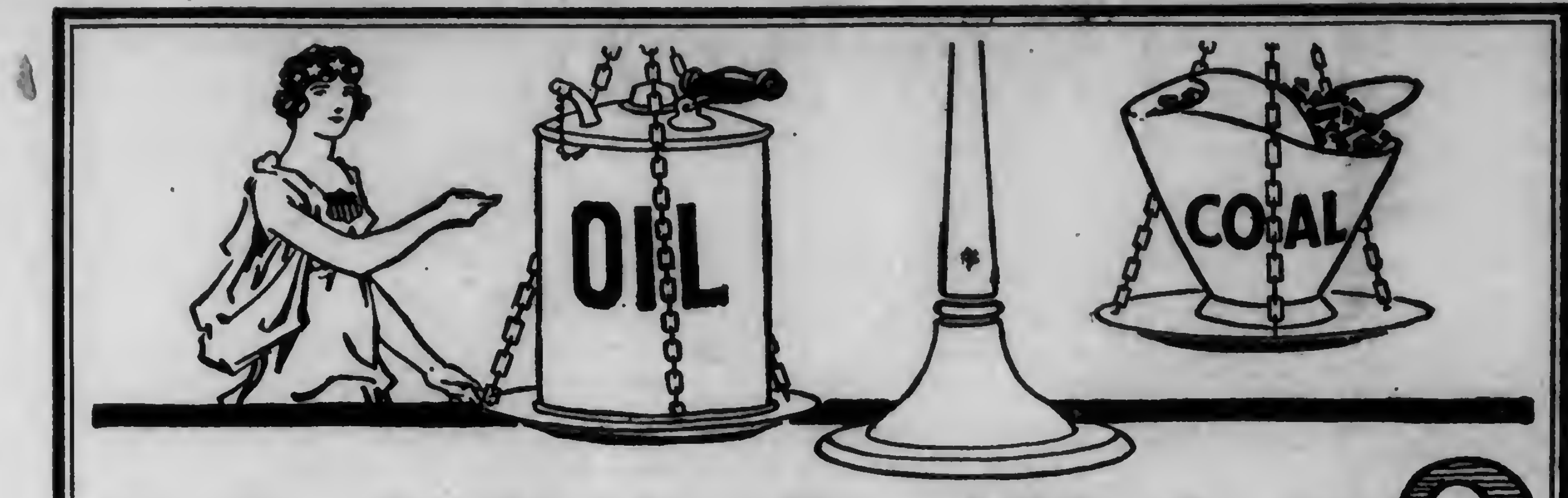
Co-operative Marketing.—Circular No. 738, of the U. S. Department of Agriculture, discusses co-operative marketing— where, when and how. The discussion covers where and when co-operative markets should be undertaken, how to organize a co-operative organization, principles of co-operation, Rochdale plan of organization, by-laws and incorporation. The circular is free upon request to the above Department, Washington, D. C.

Among the 75 honor cities in the purchasing of Liberty Bonds, New York state was not represented except by the metropolis, just over a hundred percent. Yet the state as a whole went well over the top. Somebody was buying bonds—must have been the farmers.

Barley has come into its own because of war needs. Formerly considered as good only for malting purposes and stock feed, it is now taking its place by the side of wheat and rye for milling into flour.

Common barberry is a potent ally of the kaiser. It spreads wheat rust. Don't sacrifice bread to barberries. The Japanese barberry, commonly used for hedges, is not harmful.

If any farmer wishes to have a soldier furloughed for agricultural work he should make application to his local board for the Provost Marshal General's Office, form 1035.



WHICH?

Coal or kerosene? The government needs the coal. The less coal used this summer the more there will be for winter when it's needed most. Every housewife can help by using an oil cook stove in her kitchen instead of a coal range. Will you?

NEW PERFECTION
OIL COOK-STOVES

not only save coal for war purposes and home heating but they mean less work for the women who have them. They're less trouble to operate than a coal range. Nothing hard to understand. Simply strike a match, light the wick and regulate the heat as easily as you turn a lamp up or down. Isn't that easier than carrying wood or coal and bothering with the ashes every day?

Also, the results are better, for you have the heat at one place, right under the pots and pans—not over the whole stove and *over the whole kitchen.*

But for *perfect* results always use Atlantic Rayolight Oil. Ask for it. Don't buy unbranded kerosenes. They look the same but they're not. Atlantic Rayolight Oil is so highly refined that it gives the most heat and all without smoke, sputter or smell. Go to your dealer now and ask to see New Perfection Oil Cook Stoves. And then be sure to use Atlantic Rayolight Oil.

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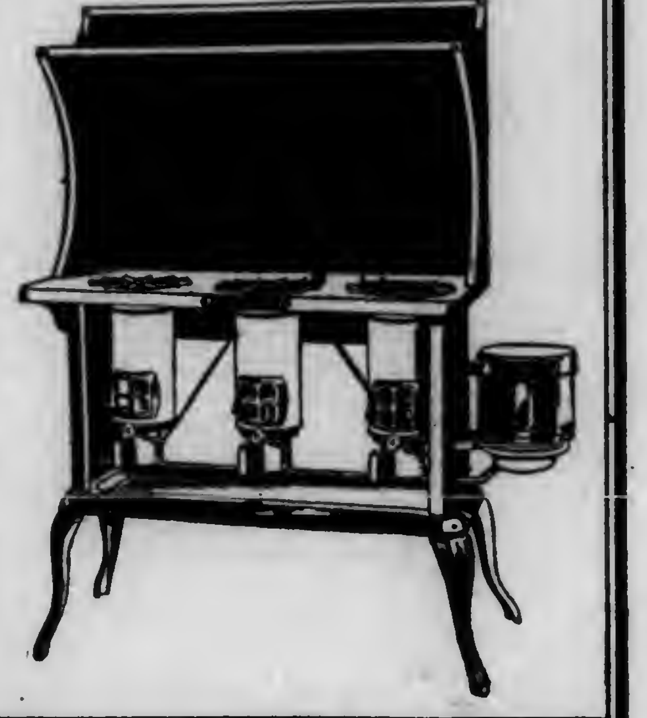

DR. HESS
Instant Louse Killer

Don't let your hens and chicks be pestered to death. Remember, lousy hens soon quit laying —and lice actually kill millions of chicks. You can rid fowls and chicks of lice by using Instant Louse Killer. Dr. Hess authorizes every one of his 28,000 dealers in the United States and Canada to sell it on a money-back guarantee. Sprinkle on roosts, in coops, sift in the feathers, put it in the dust bath. It kills lice on animals as well. Stroke the hair the wrong way and sift in the Louse Killer. Excellent to use right now for killing bugs and worms on roses and vines.

1 lb. 25c 2½ lbs. 50c
(except in Canada)
Dr. HESS & CLARK
Ashland,
Ohio

Kills Lice on Poultry and Stock

This "FEDERAL" Paid for Itself Quickly

J. E. Yeagle & Sons used to haul their produce by team from Bensalem, Pa., to Philadelphia, a distance of twenty miles. The trip which was made several times a week consumed the whole time of two horses and two men. A 3½ ton Federal truck was bought. Today they load about ⅓ more and make twice as many trips in just half the time. It is easy to figure how this Federal Truck, in the saving of two men's time and the labor of two horses, paid for itself in jig time. Any farmer can apply a Federal to his farm and make it pay too.

FEDERAL
MOTOR TRUCKS

are distinctly built for the farmer; are standard throughout and made from one to five tons, built especially for heavy hauling, over all kinds of roads. Their efficiency and low up keep cost has been demonstrated by hundreds of farmers. Before buying any truck see the Federal. It will pay you to do so. Write nearest office for booklet giving full details and prices.

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Millions of them. Leading varieties of Tomato, Cabbage, Cauliflower, Pepper, Egg Plant, Sweet Potato, Lettuce, Beet, and Celery. Get my price on plants sent by Parcel Post, prepaid, and special price on large orders
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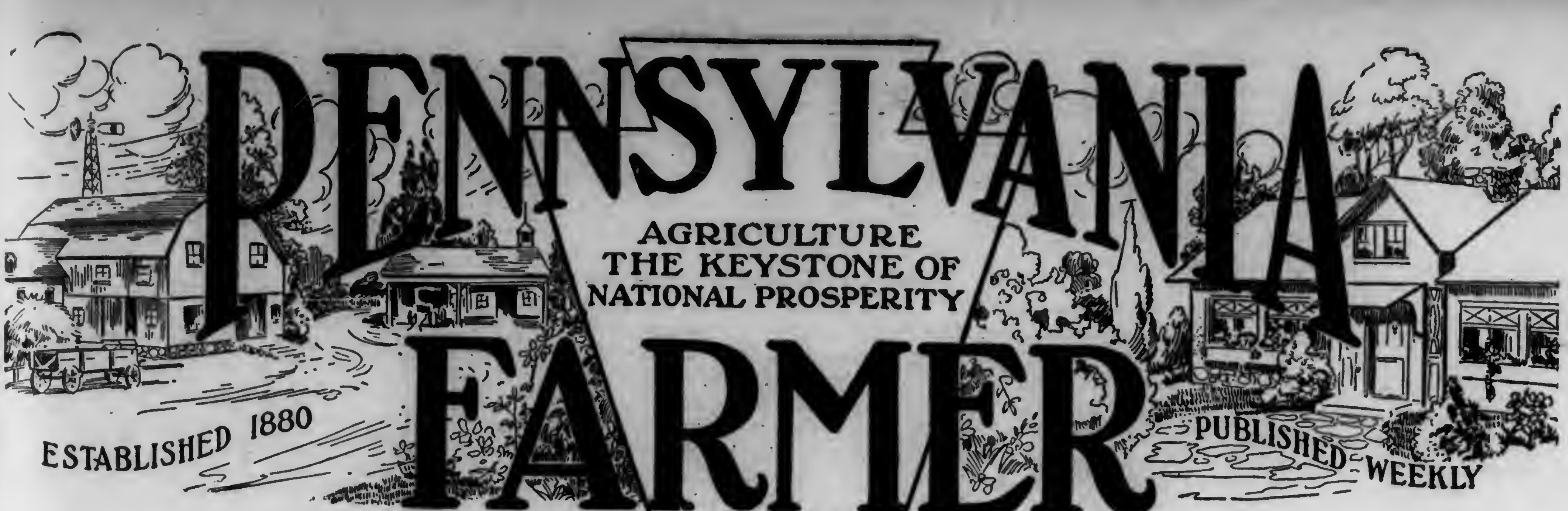


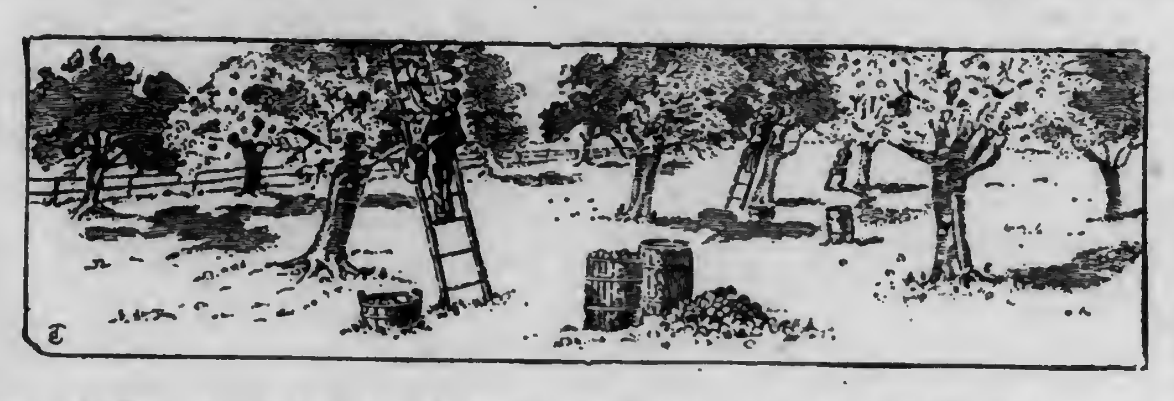
PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880
PUBLISHED WEEKLY

Vol. 43—No. 24. PHILADELPHIA, PA., SATURDAY, JUNE 15, 75 Cents per Year

Library Agri College Experiment Station

Care and Marketing of Ear[illegible] Apples

Profit From a Much Neglected Crop---Wm. H. Wolff, N. H. Exp. Sta.



Have you ever appreciated the commercial value of early summer apples? Most farmers and fruit growers have not. If you have, you are fortunate and probably the richer because of it.

When the average man asks for advice on apple planting, he is likely to receive a reply about as follows: "I suggest that you plant a few trees of early varieties." This is the usual answer whether the prospective planter lives in Maine, Pennsylvania, Arkansas or Oregon.

The above answer is the best, too, that can be given to the vast majority of growers. It is best because most orchard locations are a considerable distance from market and only the firmer-fleshed, longer-keeping fall and winter varieties will stand up under long distance shipments. Again, long-keeping apples are in demand by buyers for storage and for speculation. Further, most prospective orchardists want to pack apples in the way apples usually are packed and in which we are accustomed to think they ought to be packed—either in the old fashioned barrel or, in case one has ambitions to produce the fancy grades, in the Western standard boxes. Thus, the majority of growers plant the late varieties and the result is that most towns are well supplied with apples in the fall and winter, but very poorly supplied when the country boy is hunting his first ripe Red Astrachans and the country housekeeper is making her first batch of apple sauce of the Early Harvests and Yellow Transparents.

Summer apples are today, tho, coming to the front and are beginning to assume commercial importance in many widely scattered sections. One of these sections centers about Moorestown, N. J., where the culture of summer apples has within the past few years been progressing steadily until now it presents a well-established industry. Many fine orchards comprising such varieties as Red Astrachan, Yellow Transparent, Duchess of Oldenburg, and William's Early are found here. The fruit is handled much like peaches; it is packed in the 16-quart Jersey peach baskets and is mostly hauled by large two-horse wagons, or trucks, to Camden and ferried to Philadelphia.

Kent Co., Delaware, is another section where early apples are grown extensively. The fruit is packed in 16-quart or 24-quart peach baskets or hampers with covers, and is shipped by rail in carload lots to New York, Boston, Pittsburgh and even more distant cities. The William's Early is the favorite variety. Other scattered commercial orchards of summer apples are found in New Jersey and Delaware and in this same coastal plain country in Maryland, in Virginia and as far south as North Carolina. This entire section possesses many advantages for the culture of summer apples, since it has plenty of moisture, an early spring, hot weather in early summer, light easily tilled soils and fair immunity from frosts which might damage the blossoms. Early apples are here brought to maturity very early in the season; they are produced and marketed economically; hence, the industry is sure to grow.

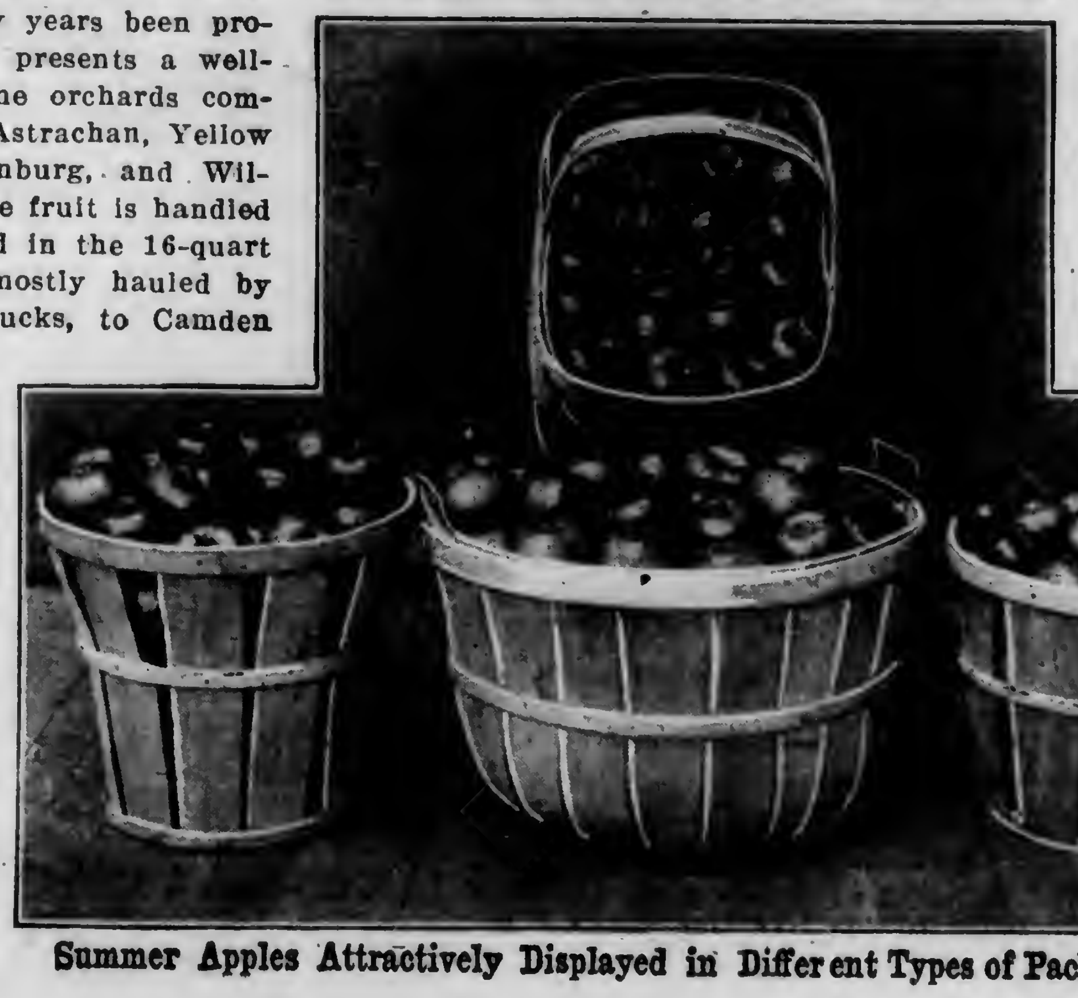
The coastal plain country of the Middle Atlantic States is, however, not the only section where the culture of summer apples is a commercial success. While extreme earliness, as afforded by this section, is perhaps desirable, it is not absolutely essential. The writer believes that summer apples when properly handled will pay when grown in any location near to, or quickly accessible to, a town or city market.

This past season the writer visited the farm of Mr. C. C. Pettigrew, of New Hampshire, and found he was marketing large quantities of early apples. The question was asked, "Can you market these apples profitably?" The answer was: "A few years ago when I bought this farm I was told that winter apples like Baldwin and Spy were good property, but the early fruit did not amount to much commercially, and that the trees had better be removed or top grafted to Baldwin. My previous training had given me the consumer's standpoint on the purchase and use of apples. I believed the average person liked apples as well in summer as in winter and would buy them in summer if only placed before them attractively in a convenient package. I found that, owing to other interests, the former owner had made little attempt to sell the early fruit. A little usually too green or over-ripe had been carried into town on Saturday afternoons but that was all.

"I have managed to change that. I give these summer apples intensive culture, develop them to as high a degree of perfection as possible, pick them when just in the prime of condition, and pack them attractively in baskets like peaches. Every day while this early fruit is in season I load our small truck with the packed baskets and send it into market, nine miles away. The fruit makes a wonderful display and the people, being hungry for apples, cannot help buying. I can't begin to supply the market and the price is so good I often wish I had more of the earlier kinds in place of some of my Baldwin trees."

Another large fruit growing concern, The Hittinger Fruit Co., of Massachusetts, has been growing the William's Favorite successfully for many years. Their trees are mostly old and very large; they are sprayed thoroly and given intensive soil tillage until the fruit is almost ripe, then a deep mulch of cheap marsh hay is spread under the trees and the fruit which naturally drops badly is allowed to fall on this. They bruise very little. The apples are picked up from under the trees every morning and are packed into the square Boston Vegetable Gardener's boxes and hauled into Boston on wagons. Other methods of marketing may eventually have to be used, but the owner states that for the present the one now in use fits in well with their vegetable marketing, is economical and gives excellent paying returns.

Another successful grower of early apples is Mr. Geo. A. Welsh, of Delaware Co., Pa. Mr. Welsh has among his several hundred trees a group of nine old trees of the uncommon variety, Ohio Red Stripe, a good bearer, but poor quality apple. The fruit from these trees is sold from the wagon in peach baskets and the sales from this group of nine trees have been over $125 a year for each of the past six years. Mr. Welsh has also six trees of Wealthy—an August apple in his section—which bore their first crop of importance this past year when five years old, and which sold for $35. Two years hence, it is expected that the crop from this group of little Wealthy trees will sell for at least $50. Summer Rambo is



Summer Apples Attractively Displayed in Different Types of Packages also a good paying variety with Mr. Welsh.

Mr. Geo. A. Yeaton, of Maine, President of the State Pomological Society last year, is another grower of early apples. Mr. Yeaton produces, besides other varieties, about 75 to 80 barrels a year on the average of William's Early apples. He says of the picking and marketing, "I use the cheap splint ½ bushel peach baskets and mostly pick directly into them from the trees. With a little care none but fancy fruit is picked until the last picking and we usually go over the trees three or four times, as this variety ripens unevenly. The baskets cost $6.75 a hundred and I give them away with the fruit, which pleases the customers greatly."

These are only a few of the many people who are making a success of early apples. In every case their success may be attributed to the fact that they produce good, clean, bright colored fruit, pack it attractively in baskets and get it to market quickly. To sum up, the culture of early apples is worth considering and paying much more attention to for the following reasons:

1. Early apples are hardier in tree and bud than peaches and may well take their place in neighborhoods and on farms to which peaches are not well adapted or where peach culture in the past has been attended with only partial success.

2. Early apples ripen between raspberries and standard varieties of peaches, and so enable a better distribution of labor by adding another crop. They also make it more practicable for one who desires to specialize in fruit farming.

3. The majority of towns and medium-sized cities are now poorly supplied with early apples and these markets are open to development by first comers.

4. The risk of loss of crop by wind or hail in the case of summer apples is about one-half as compared with the risk of loss in the case of the fall and winter varieties.

5. The cost for packages is low. The six half-bushel baskets needed to contain three bushels (one barrel) of apples cost usually less than a new barrel.

6. There is little expense in packing and no expert help is required. The fruit is simply placed in the baskets, often directly from the trees, and this work is done quickly.

7. As a War-Food production measure, this year at least, early apples ought be carefully sprayed, brought to perfection and all marketed. If this is done, in all probability the returns will be such an "eye opener" that the practice will be continued.

Fundamentals in Corn Growing

Cultivating With Reference To Heat and Moisture

Corn should be cultivated only when one or more objects will be accomplished by the cultivation and when the total effects will be more beneficial than injurious. Some beneficial effects are: (1) Preventing weeds from robbing the corn of soil moisture and fertility; (2) putting the surface in condition to take in rainfall, thus preventing run-off and erosion—losses of water and soil fertility; (3) warming the soil by drying its surface quickly; and (4) saving moisture by checking its capillary rise to the soil surface.

Some injurious effects are: (1) Breaking corn roots, which otherwise would use some of the moisture of light showers before it evaporates; and (2) forming large clods and holes, thus permitting dry air to enter and dry the soil. In droughty regions corn cultivation is more essential and requires more good judgment than in most other sections.

The primary object of cultivation is to prevent loss of moisture. Moisture losses are caused by run-off, evaporation and, most of all, weed growth. The one most important object of corn cultivation is the keeping out of weeds. It takes but little stirring of the soil to kill weeds immediately after they germinate and before they have used much soil moisture, but to destroy weeds that are well rooted the soil must be worked deeply and thoroly. This requires much labor and can not be accomplished without breaking and destroying many corn roots. In many sections, or in seasons when the seed germinates slowly, it is advisable to harrow once or to cultivate after planting before the corn comes up.

Deep cultivation should never be done close to the plants after they are a foot tall, as much harm would be done by breaking the corn roots.

Aside from destroying weeds, timely cultivation is beneficial in preventing the loss of moisture by evaporation and also in hastening the warming of the soil. The loss of soil moisture by evaporation continues much longer from a compact, damp surface than from a loose, dry surface, and the evaporation tends to keep the soil cold.

In northern localities and at high altitudes the conservation of heat is frequently as important as the conservation of moisture. Luckily, both heat and moisture may be conserved by good timely cultivation. Heat is wasted in evaporating or wasting soil moisture. Making the surface loose and dry saves both soil heat and soil moisture.

Cultivating after heavy rains is a good practice. To be most effective the cultivating should be done as soon as the surface is dry enough to work well. If the soil is allowed to dry until it breaks up cloddy, much moisture will be lost, a good mulch cannot be obtained, and harm is more likely to be done to the corn roots. As long as rapid evaporation is taking place, the surface will remain cold and the growth of the corn will be slow. In order to cover large areas quickly, cultivators which work two or more rows are a great advantage.

The number of cultivations necessary and the best time for them depend upon weather and soil conditions. Weeds should not be allowed to grow; a mellow surface should be maintained. In some seasons this may be effectually accomplished with one or two cultivations; in other seasons from four to six cultivations may be necessary.

VALUE OF AN EAR OF SEED CORN

When one speaks of seed corn it is seldom that the individual ear is taken into consideration, but more often the entire lot of seed. The average person, instead of trying to find out whether every ear will grow, will more often be satisfied with an average composite test of from 80 percent to 95 percent, plant accordingly and get a very uneven stand.

Testing Every Ear.—J. J. Tressler and County Agent Olmstead, Centre Co., Pa.

I believe a price should be put on every ear in order to encourage the testing of each ear individually and get seed germinating 100 percent as nearly as possible. On the basis that it takes 12 to 15 ears to plant an acre, and with a yield of from 90 to 120 bushels per acre, every ear is worth from 6 to 10 bushels of corn. At the present prices we cannot be far wrong when we put a valuation of from $5 to $8 on every ear that goes into the ground. Does it not pay to test every ear in order to get a perfect stand?—R. H. Olmstead.

MANURE AND LIME RAISE WHEAT YIELD

Eight tons of manure on land limed once in a five-year rotation with two tons of finely ground limestone has produced 33 bushels of wheat per acre at the Ohio Experiment Station, while untreated land has yielded only 13 bushels as a 12-year average. Clover and timothy hay following the wheat on manured and limed land have yielded three tons per acre more than that harvested from untreated land. This hay at $10 a ton has more than paid all cost of producing the wheat, if manure costs only the expense of hauling and spreading on the field. The systematic manuring and liming have been paid for in other crops of the rotation, leaving the increase in wheat yield as clear gain.

CONTROL OF CORN EAR-WORM

The corn ear-worm does a vast amount of injury each year to valuable garden and field crops. It is practically the only insect which injures the ears of field corn, and it is decidedly the worst insect pest of sweet corn. This worm does considerable damage to tomatoes by boring into the green and ripening fruit and is known to the grower as the tomato fruit worm; it bores into the "bud" or unfolding leaves of tobacco and is known to the planter as the tobacco bud-worm; and it is also one of the serious pests of cotton in the South, where it is called the cotton boll-worm from its habit of boring into the cotton bolls.

The full-grown worms are variable in markings and color, but usually they are a dull greenish or brownish color, with indistinct stripes or spots, and are about 1½ inches long. Winter is passed in the pupa or resting stage in the soil. When the worm becomes full grown it burrows down in the soil about three inches and constructs a tube or gallery nearly to the surface of the ground for the use of the moth which will come out later. The worm retires to the bottom of the gallery and changes to the pupa or resting stage. It is in this stage and under such surroundings that the insect passes the winter.

One of the best means of control is fall plowing and harrowing or disking in order to break up the opening tubes or exit galleries of the soil. This also brings the resting stage (pupa) of the insect nearer the surface where the alternate freezing and thawing during the winter will have a greater effect in destroying it. Fall plowing and cultivation have been found almost 100 percent effective for the area covered.

The essential factors regarding soil fertility and plant feeding are simple and easily understood by every farmer who will give the subject attention. To restore and maintain the fertility of normal soil is a simple process and readily practiced by most farmers but it means the carrying out of a regular system of crop rotation and soil management and the application of the essential plant food substances, including the expenditure of labor, time and money, all of which will be amply paid for in larger yields and better quality of crops produced. Nevertheless much labor and some money expense must be associated with soil improvement and this seems to be the great stumbling block which hinders the progress of greater crop production and more profitable farming.

By the Way

By

Father Penn

Three years ago Hudson Maxim wrote a book, "Defenseless America", which made a great hit, however much we may differ from him. Recently, this inventor of war machines has written a magazine article which deserves the consideration of farmers; first, because of the prominence of the author, and secondly because similar views are held by other influential men and are being considered seriously in certain quarters. Following are some of Mr. Maxim's arguments:

"When we take into consideration the fact that at the present time there is a very stringent shortage of farm labor thruout the country, and again take into consideration the fact that one Chinese farmer will get many times as much off a given area of land as an American laborer, it is not an exaggeration to assume that American farms could, by the introduction of Chinese labor, be made to produce several times as much as they are now producing. There is land in the United States to raise food enough to fatten the world.

"The average American does not like farming. The sons of the prosperous farmers do not take kindly to the tilling of the soil with their own hands. They prefer the excitement and the diversions and stimulus of the life of city and town, and they leave the farm for the office and factory.

"The average American laborer also finds the occupations of the city and town more congenial than farm labor. Consequently the farms are denuded of labor, and there is no remedy in sight unless we shall be able to overcome prejudice, enlighten our minds with understanding, and introduce Chinese labor to work our land.

"The same reasons that have denuded the farm of labor have denuded the household of servants. The servant question is an ever-present, harassing problem, which is finding its answer at the present time in forcing the family into the hotel, the boarding-house, and the co-operative apartment-house, from which children are barred. Lack of household servants is forcing race suicide upon the American people.

"The individual, independent family entity is rapidly going out of existence. The abandonment of the separate household for quarters in the co-operative apartment-house is an atavic return to the troglodytism of the cliff-dwellers—worse, for children were not barred from the cliff-dwellings.

"Chinese, imported as agricultural laborers and household servants, would solve the agricultural labor problem and the servant problem, and we should have the best agricultural workers in the world and the best household servants in the world, in unlimited numbers. They would not compete with American farm and household labor, because there are no laborers left in those two fields worth considering, and the few there are would, with the new opportunities and lower cost of living resulting from the introduction of Chinese labor in those two capacities, be able very readily to find more profitable and more congenial employment in other pursuits; while the hard-worked farmers' sons and daughters who do stay on the farms would find the larger part of their burdens lifted. With less labor of their own hands they would have very much more recreation and greater profit.

"A million Chinamen should be imported with all possible speed. This measure should not be opposed by labor unions, because Chinese imported as agricultural laborers and household servants would not compete with union-labor in any way, while the Chinese would be producers of wealth which would greatly reduce the cost of living and consequently give to every dollar a greatly increased purchasing value.

"If a million Chinamen were to be imported, as I have suggested, their labor could be restricted to agriculture and the household. A million such laborers distributed thruout the country would so increase the food-supply and so lower the cost of the necessaries of life that the laborer who now earns $3 a day would then be able to buy for $3 more food than he can get for $5. The artisan would be able to buy twice as much for his weekly wage to feed his family as he is now able to buy. . . . . The only way to prevent multitudes of our people from dying of actual starvation in the near future is to import Chinese laborers."

Has he who wrote so strong a book on "Defenseless America" no ideas on a defenseless agriculture? Can he propose nothing which will make that business secure from the attacks and plunderings of the hoard of speculators and profiteers? Is the case so impossible that our own people must give up the business and it be turned over to the Asiatics who might be more easily exploited?

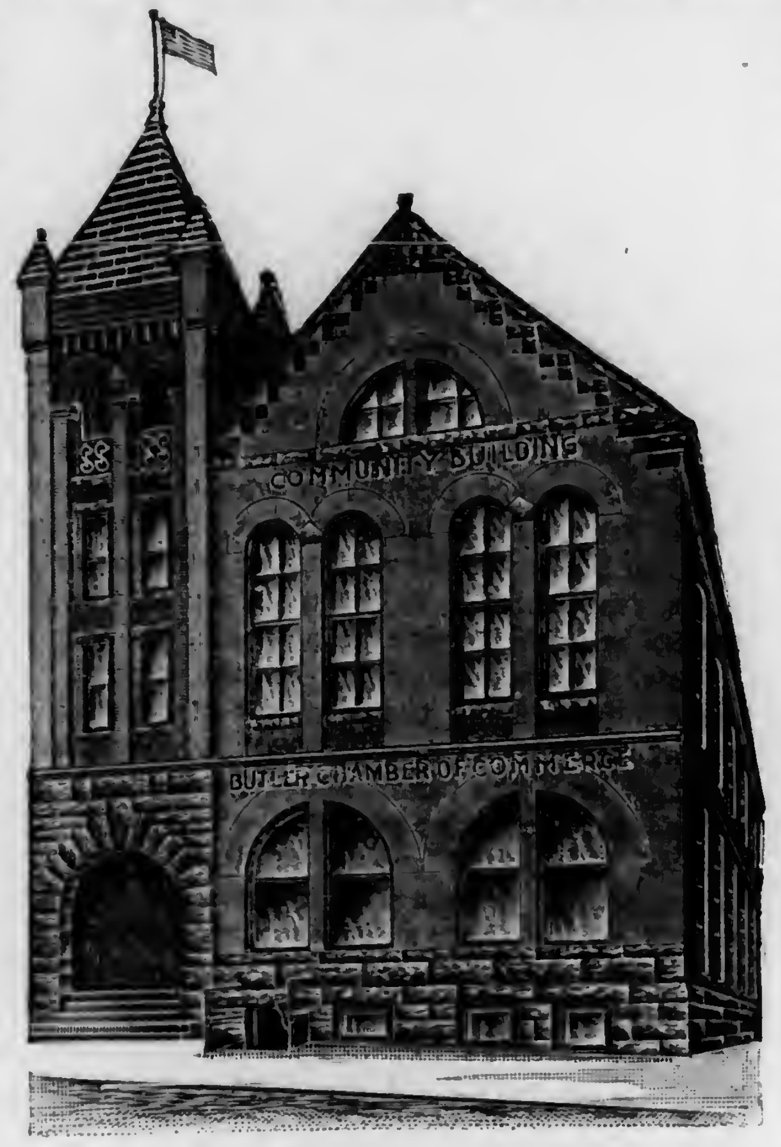
Compare the above reasonings with the statements of Herbert Hoover and see which is the more logical reason as to why agriculture has been so unprofitable and unattractive that the young men and women forsake it for business and professional life. Unless the conditions mentioned by Mr. Hoover are corrected, is it any more likely that the consuming public would get its food cheaper from cheap Coolie labor than now? When will people learn that the biggest element in the high cost of living is the tolls exacted by those who toil and spin not but who take big tribute. Mr. Hoover says:

"In our commercial distribution we are confronted daily and hourly with evidence of a large amount of rank speculation at every link of the distributing chain by persons not engaged in actual commerce of distribution. Thousands of men in this country who never owned a commodity in their life have bought canned goods, flour, wheat and every food commodity to speculate for a rise, and these speculations have been prompted to a great degree by the increased field of forward contracts. . . . We face the amazing situation of the country producing a surplus of foodstuffs and paying the highest prices known in history.

"There can be no more vivid evidence of the desirability of food control in this situation than a comparison between our prices and the prices of foodstuffs in countries where there is some measure of food administration. . . . Practically the entire wheat supply of Belgium is imported from the United States, and despite the cost of transportation, the cost of bread there is but 60 percent of the cost in New York City. In France it is 40 percent lower and in England, 30 percent below."—From testimony before Senate Committee, June 17, 1917.

City Community Building

The Butler Chamber of Commerce, of Butler County, Pa., has opened what is claimed to be the best Community Building in any city under 50,000 of the United States. The citizens of Butler are taking a special interest and pride in the new Community Building and every effort is being brought forth to bring the farmers of Butler County into closer relationship with the business men. The building is located in the center of the city. It is not only headquarters for local organizations but it is natural headquarters for the farmers and their family, and farmers' organizations.



Butler Co., Pa., Community Building

Accommodations For the Farmer

The farmers' room, 36x50 feet in size, is furnished with substantial tables, comfortable chairs and benches, and the County Farm Bureau maintains an elaborate exhibition. Here are found the latest farm papers and agricultural literature. Adjoining the farmers' club room is a check room where farmers may check bundles free, and have their packages sent from local stores, merely receiving a duplicate check from the merchant, he then delivering the package to the Community Building. On the same floor is a toilet and wash room for men and one for women. In addition, there is a women's rest room, comfortably furnished with couches and little beds for the children.

Provide Place to Eat

The shoppers from the country often wish to bring their own lunch to town and instead of dining at a local restaurant or hotel, eat it in the club room with their farmer friends. This has proved a big feature in other places. After checking their lunch at the Community Building, the farmer and his wife go their respective ways, transact their business and make their purchases. Instead of laboring thru the street with an armful of bundles they are burdened only with a duplicate check on the check room. At noon they meet again at this convenient place. They eat their lunch with their friends from all parts of the county in the big club room, and after receiving their packages from the check room, depart with good will in their hearts for the local business men. This, by the way, is a very effective antidote for the mail order catalogue.

Other organizations located in the building are Chamber of Commerce, Butler County Farm Bureau, Business Men's Association, Justice of the Peace, Red Cross Headquarters. It also contains two large auditoriums, one of which is used by the Gospel Mission and the other by the Agricultural Bureau.

High Yields and High Profits

Almost every farmer agrees that he could raise more corn or oats or hay or potatoes on a given acre of land if he set out to do so, and generally concludes his remarks by saying that to do so would cost him more than the increase would bring on the market. In order to throw some light on this subject, Professor Frank App, of the New Jersey Experiment Station, collected data on 192 farms in Monmouth County, New Jersey. The average crop yield of the county was rated at 100 percent. The income of the farm was compared with the average acre yield. The results are illuminating. On farms where the yield was 15 percent or less than the average, the farmer worked for nothing and paid for the privilege in addition, and the lower the yield the greater was the net loss on the farm. On the other hand, the net gain increased steadily with the gain in acre production, even after all expenses of growing the crop were deducted. The man who grew crops one-third larger than the average received three times as much money for his effort after his expenses were deducted. Professor App sums up his findings as follows: "Expenses per crop acre increase with the increased production but not nearly so rapidly as receipts."

Acid Phosphate and Acidity

Soil acidity has not been increased by the addition of acid phosphate to land on the farm of the Ohio Experiment Station at Wooster if clover is taken as an index. Farmers are urged to use this material for increasing yields of all crops, and not to believe that it makes the soil "acid".

Land without any treatment in a five-year rotation of corn, oats, wheat, clover and timothy has yielded 1.214 pounds of clover per acre as an average for the last 15 years. Two tons of limestone has raised this yield 603 pounds, while 160 pounds of acid phosphate has increased the hay crop 398 pounds.

One plot of land fertilized with nitrate of soda, dried blood and acid phosphate yielded 802 pounds more hay per acre than an adjoining plot treated with only nitrate of soda and dried blood. Still another plot fertilized with nitrate of soda, dried blood, muriate of potash, and acid phosphate yielded 1.088 pounds more hay per acre than a nearby plot similarly treated except that no acid phosphate was applied.

Acid phosphate has increased the yield of clover hay in a three-year rotation of corn, oats and clover by 277 pounds per acre. Unfertilized land in this rotation for the last 12 years has produced 3,459 pounds of hay to the acre

Pennsylvania Farmer

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PHILADELPHIA, PA., JUNE 15, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

Comparison of Price Increases

Many farmers will be surprised to know that an acre of wheat, corn, potatoes, oats or other crop now will purchase more of any article bought for use on the farm or in the home than would the products from an acre in 1914. This is on the basis of the market value of the crop raised, not on the basis of profit per acre made by the farmer. The Department of Agriculture gathered data from all parts of the country and computed the advance in prices of 110 things which farmers buy. The advance varies from 17 percent on coal oil to 110 percent on rope, hemp and brooms—the average increase on all articles being 45 percent. Putting it in another way and using the prices prevailing in 1909 as 100, both for crops sold and things purchased, and comparing these with prices obtaining on January 1, 1918, we find that the advance in farm products has been 100 percent, and the advance in things farmers buy 163 percent.

Of course, this does not include the increased overhead expenses of running a farm and producing crops. No figures are available to show how much greater the net income of the farmer was in 1917 than in 1909. While it is well for farmers to realize that the things they sell have increased as much or more than the things they buy, it is also important for city people to know that the net profits of farming are not in proportion to the increased gross returns.

* * *

Freight Rates

The 25 percent increase in practically all freight rates, to take effect June 15, means a new burden to farmers. Regardless of theory to the contrary, it is a safe assumption that on practically all of the products shipped from the farms, the local dealers and shippers will take the increase in rates out of the prices that they pay to farmers. The wholesale price on most products is set in the big market centers and represents the price on the product delivered at point of destination. The country dealers buy at a price that will enable them to ship to these centers and make a profit over cost, plus freight and other expenses. As freight or other expenses increase, the dealers "cover up" by depressing the buying price. This is and has always been the "system," and the method will not be greatly changed even under the present abnormal conditions

In normal times the city retailer might also seek to advance prices to the consumer, under the pretext of covering freight increases. But such increase would merely increase the margin already existing between the producer and consumer, because the actual increase will have already been paid—by the farmer. The city retailers may make such effort now, but if they do they are likely to meet the opposition of the Food Administration officials. These officials have the power to curb undue price advances in the cities, but their influence on country prices is less direct. The Food Administration of Pennsylvania has set for itself the task of assisting the farmers to get back a part at least of the loss thru increased freights. It can do this only indirectly thru curtailing the spread between wholesale and retail prices in the cities and educating the city consumers to buy most heavily of those products that are most plentiful on the market. These things accomplished, a larger volume of the farmers' produce will be moved and there will be a tendency to prevent market gluts. These activities can give only a partial relief from a certain burden and farmers must seek means in their own management of the business of marketing to overcome the greater part of the loss.

* * *

Shall We Stop Making Beer?

The National Dry Federation is waging a war in favor of immediate prohibition for the duration of the war, this campaign to culminate by a flood of telegrams to be sent to Congressmen before July 4 demanding such action. This Federation is composed of churches, businessmen's leagues and other bodies with a total membership of over 25,000,000. The immediate concern is the stoppage of the use of grain and other materials used in the manufacture of beer.

In view of the great need of grain and coal, and the strict regulations and urgent recommendations to people in all other lines of business, we are unable to understand why those in apthority shun the responsibility of stopping the biggest single waste in the country—the manufacture and use of beer. In a statement by Mr. Hoover, as reported in the daily papers, it appears that about 4,500,000 bushels of grain are used each month in the brewing of beers. This would make a total of 54,000,000 bushels in a year. During the past year we exported to the Allies 143,000,000 bushels of wheat. Of course, little wheat is made into beer but the grain used is of the kinds which we must substitute for the wheat sent abroad, and the prices of the substitutes are now higher than wheat.

Mr. Hoover, according to the report, refuses to recommend the stopping of brewing for fear of an "orgy of drunkenness" which is likely to follow from the use of whisky, brandy and gin if beer were made unavailable, since there is at least a two years' supply of these drinks on hands, altho the manufacture of them has been stopped. Mr. Hoover stoutly asserts his sympathy with total prohibition and his detestation of the liquor business. We appreciate the injustice of compelling a single public official to arbitrarily suppress an industry that should be suppressed by the public, but no interests should be permitted to misuse valuable food and fuel in a time like the present. The organized brewer should be made to conform to as strict standards of conservation as are imposed for the individual.

* * *

Farm Machinery Regulation

The federal authorities are showing commendable activity in seeking to insure a necessary supply of farm machinery and hold prices as low as possible to the farmers. Supply of materials is a serious matter in these days of exhorbitant demands for all metals. Farm machinery is classed among the essentials and some preference is given to the manufacturers in securing raw materials. This is to be supplemented by an elimination of unnecessary varieties and styles of farm implements and concentration upon the standard lines. It is scarcely possible to eliminate any entire line of machinery as each has its particular use, but classes within lines may readily be simplified. Every make of cultivator has its admirers but it is possible to standardize the number of teeth, curve and slant of teeth and shank for certain uses and eliminate a large number of makes that have but small variations and these in non-essential features. It is possible to eliminate certain sizes of mowers, harrows, plows, etc., if by such elimination the cost of the accepted standards can be cheapened and a plentiful supply be insured. This work is being undertaken by the War Industries Board, and most farmers will gladly adapt themselves to a more narrow range of implements if it means a proportionate saving in cost. The order putting all implement manufacturers and dealers under license and regulating the margin of profit of each should greatly assist in controlling retail prices.

It will be noted that none of these plans look to the standardization of farm machinery. They will not do away with apparently unnecessary differences in similar parts, such as plow points, cutter sections for mowers, binders, etc., or cultivator teeth. Farmers are looking forward to the time when such parts may be interchangeable and thus effect large savings in repair bills. It is objected that the changes in manufacturing necessary to cut out interchangeable parts would cost too much in time and money to be undertaken now. Time is an important factor, but if the present work in elimination of unnecessary classes is directed toward lasting standardization it will be a big advance step.

* * *

Vital Milk

On page 6 of this issue is a summarized statement of Dr. E. V. McCollum's recent discoveries of the vital food elements in milk and green, leafy vegetables. These discoveries are held by leading authorities to be among the most important food facts developed in the present century. They make plain the cause of mal-nutrition in large areas of the world and explain how and why certain diseases spread or may be controlled. More pointedly, they explain why milk is the perfect food. They allso explain the vital importance of the dairy industry. Green vegetation is available the year around in only comparatively small areas of the world, and even in those areas milk and its products have been shown to have superior qualities in the all-round development of the race.

It is important to note that the experiments tend to show that the vital element in milk is not impaired by any of the processes of manufacture into the commercial dairy products. The feeding of butter to the rats in the experiments gave the same results as the feeding of milk. In the same way it appears that the vital element is carried in any of the other dairy products, as cheese, cottage cheese, ice cream, powdered and condensed milk, etc. And it is definitely shown that the same or similar vital elements are not carried by fats or oils from other sources. Fats from animal tissue, oils from grains, nuts or plant stalks, as used in many grades of oleomargarine do not contain this vital element, however much the product may resemble butter in chemical or physical characteristics. The only way that oleo can carry even a degree of the vital food value of butter is by the addition of milk or butter fat, and it can compare in value with butter only in the proportion of the butter fat that it carries. The same applies to the newer nut butters and other dairy substitutes coming on the market.

The value of these discoveries to the dairy industry cannot be over-estimated. They will mean wider appreciation of the food value of all dairy products. They mean that eventually, dairy products will be given a regular place in the diet of an ever-increasing proportion of the human race. The importance of the discoveries is partially indicated by the ready and enthusiastic reception of them by the general public. Under the popular term of "vitamines" the essential features of the new facts have been heralded by the press of all classes, and those facts are of as great dietary value to farmers as to any other class; and of greater financial value. Every farm women's club, grange and farm community organization should familiarize its members with the full facts of the discoveries. It will give added appreciation of the food value of milk in the farm homes and help extend that appreciation to an increased circle of town and city consumers.

HARRISBURG NOTES

Farm Labor Plans.—The fact that if the people of Pennsylvania want to be well fed next winter and at the same time do their part toward provisioning of the men who are fighting the nation's battles they must get out into the fields and help the farmers is becoming pretty generally realized according to the statements of men connected with various agencies of the state who have been here the last week. The State Defense Commission heard reports at the meeting here a few days ago that more people were appearing at offices of the employment system asking where they could go to help, that the number of boys willing to work on farms had trebled in number and that women were going to the fields in numbers which had not been expected. To be sure, the reports did not indicate any great movement but it was declared to be a sign of the times and the fact that so many people are planning to stay home during the summer is taken to mean that more help can be expected from the cities. While Capitol Hill has given a considerable amount of talk to the subject but little has been done here to crystallize the movement to the farm and it looks as tho the people of the state were going to do it themselves.

Discussing Reorganization.—From a few things heard about Capitol corridors after the rout of the Governor and his faction at the primary it would seem that the subject of reorganization of the Department of Agriculture is already being given some consideration. Whether this is being done with the idea of starting something in the hope it may make trouble remains to be seen. It is known that Senator William C. Sproul, the candidate of the Republicans, has some thoughts of his own in regard to what part the Department should play in the state government and that at the proper time he intends to consult with men familiar with such matters, holding that in war time this branch of the Government should make every effort to be in touch with the farmers and food producers and not think so much about the voters. However, some of the restless spirits in organizations that are exploited by leaders in politics instead of devoting themselves to their designated objects are understood to be framing up a few plans of their own to give out to the public as the only means of saving the commonwealth and nation.

Rates Go Up.—It seems to be pretty generally realized that rates of every public utility will be going up this summer. The telephone and electric companies filing tariffs at the Public Service Commission offices indicate advances from ten to thirty percent. Even rural telephone companies have been advancing their rates. Over forty notices of advances were filed in the last month.

Want State to Help.—The State Board of Education has taken a preliminary step in the movement to get more state money for school districts by naming a committee to prepare legislation to increase the state allowance for education so that one-fourth of the salaries of the teachers should be cared for by the commonwealth. For years there has been agitation for the payment of the minimum salary for the minimum term by the state because it was realized that under the present system of distribution of state money for education the cities are and will get the bulk of it; that many rural districts have only real estate to tax and that it is bearing about all it can stand. This is only one of the big problems confronting education in Pennsylvania at present, but as it is either a case of pay teachers enough or lose them the next general assembly will have to do something even if pet hospitals do suffer.

Spring Wheat Tried.—The trial of spring wheat where the crop proved a failure after the winter is reported from Lancaster and a number of eastern counties. The experiments are being closely followed by state experts and by men from Washington as Pennsylvania has always been noted for adherence to winter wheat. —Hamilton, Harrisburg, Pa., June 10, 1918.

NEW YORK LETTER

Small Notes of Interest.—Ogdensburg is to build a new public market and a call is out for bids on the work. A Shelby farmer has dumped 900 bushels of fine Danish turnips in his orchard because there was absolutely no sale for them. A company has been organized at Lyons to build concrete canal barges. A 50-foot barge can be built in three days after the forms are completed. Erie County Agricultural Society has bought and placed 150 sheep to graze on the Hamburg fair grounds. Over 700,000 chicks and 50,000 ducklings will be shipped by one Ransomville firm this season. Owing to the scarcity of labor, 30 women are employed by the Borden milk plant at Walton. Governor Whitman by proclamation names June 14 as flag day. All individuals and business firms are asked to display their flags then in honor of the 141st anniversary of the adoption of the American flag.

Anti-Loafing Proclamation.—On June 1 the Governor issued a proclamation to compel idlers or men between 18 and 50 years of age, regardless of income, to engage in some useful employment for 36 hours of every week. Sheriffs and others are urged to diligently seek out all unemployed and see that they go to work. Persons also classed under the act are those now in domestic service, if of the age designated, or as clerks in stores and other mercantile establishments, waiters in hotels and social clubs, passenger elevator operators and other attendants, doormen, footmen and other attendants of clubs, hotels, stores, apartment houses, office buildings and bathhouses; ushers and other attendants at games, sports and amusements, excepting actual performers in legitimate concerts, operas and theatrical performances. Men will not evade the new law by saying they have been placed in class I, III or IV. It is expected that the list of non-useful occupations will be added to from time to time.

New Menace.—Farmers near Kirkwood, Broome County, report a new pest that is destroying their pastures. Experts who have examined it report it to be the grass webworm. It feeds at the roots of the grasses, leaving large areas devastated and brown. A similar outbreak occurred in Albany, Columbia and Rensselaer Counties in 1905, and in the northern counties in 1881. The caterpillars stop feeding in early June, when the ground should be plowed and sowed or planted to some late crop; early planting will result in the eating up of the crop. Little can be done to destroy the pest.

Milk Announcement.—The much-discussed June milk price is finally fixed at $1.75 for 3 percent milk in the 150-mile zone—with the usual increase for higher testing butterfat content, and other changes due to transportation. This is just about half the January price, yet the retail price of milk remains very close to retail prices in January, a condition calculated to decrease milk consumption, yet not giving the consumer the benefit of the decreased price to the farmer. The great object now desired by farmers is a more generous use of milk and they are willing to make all concessions possible so that their business be not driven out entirely—but they demand that the public be allowed to purchase milk at a price in reasonable proportion to the price they receive for it. The low June price to farmers and the high June price to consumers is looked upon as a condition to stir both as never before—and already plans are under way to arouse the public to the situation.—F.

NEW JERSEY FARM NOTES

Loans to Farmers.—Under the auspices of the State Chamber of Commerce the New Jersey Patriotic Farmers' Fund has just been established with about $80,000 at its disposal for small loans to deserving and capable farmers who find they cannot obtain money or credit thru regular conservative business channels. A borrower from this fund will not receive more than $200. The notes will bear interest at six percent and mature in six months, subject to renewal only in exceptional cases. The food produced with the money advanced will be pledged as security for the repayment of the obligation. Assistance will be given from this fund solely for the production of staple foods which are so imperatively needed in the present national crisis. The contributors to the Farmers' Fund are public-spirited New Jersey citizens, who feel that they can best express their patriotism by making possible the production of staple foods which could not or would not otherwise be raised. The promoters of the idea hope to increase the amount contributed to $100,000 or more.

College Girl Farmers.—A score of New York college girls have arrived in Burlington County to do farm work as members of the Woman's Land Army of America. They are to have headquarters at Mount Holly and will work on farms that are easily within reach of that place by automobile, trolley or other transportation service. A chaperon and dietician accompany the party and strict rules about rising and retiring are observed. Farmers of the community are arranging to employ the young women.

Animal Vaccination.—Supervised by Dr. J. B. McNeill, Chief of the Bureau of Animal Industry, the State Department of Agriculture has been vaccinating all the cattle in South Jersey which graze on meadows where there is danger of infection from the dreaded animal disease, anthrax. Last year there were serious losses because of an outbreak of this kind, and the state agricultural authorities had reason to expect a recurrence of the disease this year and hence took precautionary moves to prevent it.

Prospects Satisfactory. — Alva Agee, Secretary of the State Department of Agriculture, believes that the acreage of food crops in the state will be above normal. He stated that an unusual effort has been made by the farmers of the state to secure good seed corn, and this has prevented any danger of failure to obtain good growth of corn plants. For awhile the situation in regard to corn was serious and the crop was menaced, but the situation has materially improved. The labor situation remains very unsatisfactory, and the agricultural interests of the state, together with the Department of Labor and the State Department of Public Instruction, are all co-operating to provide as much help as possible during the harvesting season.

Object to Potato Grading.—Several largely attended meetings of potato growers have been held in different parts of the state to discuss the Federal grading order. At a meeting of Monmouth and Mercer Counties farmers to consider the rules which require giant potatoes to be graded the suggestion of growing round stock did not meet with approval because of scab and other difficulties and because they do not produce within sixty percent of the quantity produced by giants. It is said that only one hand was raised at one of these meetings when the growers were asked to show their approval of the grading plan. At a meeting of some several hundred South Jersey growers Louis D. Miller, of Chicago, a Food Administration representative, explained that every potato dug in this region which is to be placed on the market must be carefully graded. The growers were advised that the standard for cobbler potatoes, which are the variety mostly grown in this region, is from 1⅞ inches up, measured across the short way, for the first grade stock, while Giants must measure from 1¾ inches up.

The South Jersey Farmers' Exchange representing 900 members, thru its representatives, had declared that it does not advocate the use of machine potato graders and will urge its growers to have the sorting done by hand. The dealers, it is understood, will be held responsible by the Government for the honest grading of the potatoes. Where violations are discovered and the potatoes do not measure up to standard, the dealer will be fined, and for a second offense the Government license will be revoked.—Lanning, Trenton, N. J., June 10.

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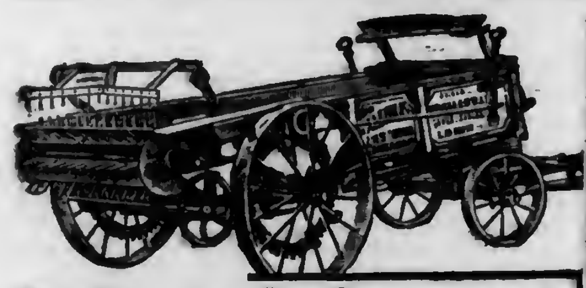

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Milk an Essential Food

Human Race Dependent on the Dairy Cow

Milk has long been recognized as one of our most valuable foods. It remained for Dr. E. V. McCollum, of the Johns Hopkins University, to discover that milk contains one of the two groups of elements absolutely essential to the maintenance and growth of human life. This discovery is characterized by Herbert Hoover as the most important contribution to the world's knowledge of foods made in the last one hundred years. Dr. McCollum was one of the principal speakers at the Food Administration meeting held at Philadelphia, May 31, and the following notes are given as a summary of his discussion:

Test of Rations

Up until about ten years ago, protein, carbohydrates, mineral elements and fats were considered the only essential elements in a food ration. Dr. Babcock, inventor of the Babcock milk tester, was one of the few men doubting the completeness of the above list. He questioned the ability of a chemical analysis to show the biological value of a ration. In other words, he did not believe that it would be possible to show by chemical analysis alone whether a feed mixture contained all of the essentials of life. To test his doubts be started a series of experiments with young heifers. The experiment was laid out in three groups. The first group of animals was fed exclusively on the products of the corn plant, including the grain, the stalk and the leaves. The second group was fed on the products of the wheat plant and the third on the products of the oat plant, in every case including the grain and fodder. The combinations of grain and fodder in each case were made up in such way that each ration showed the same nutritive value by chemical test.

At two years of age the corn-fed animals were in fine condition; the oat-fed lot was termed as satisfactory and the wheat-fed lot was a miserable looking lot. The heifers in each lot were bred when of proper age. The corn-fed lot gave very satisfactory appearing calves. The oat-fed lot dropped calves somewhat undersize, but all of the calves were born dead. The wheat-fed lot dropped calves very much undersize and immature, and all were born dead. The cows went into milk and the results at the pail were very much the same as the relative appearance of each lot. That is, the corn-fed lot gave good returns, the oat-fed lot only satisfactory and the wheat-fed lot very unsatisfactory results.

The results of this experiment led to two general conclusions: First, that it is impossible to make up any mixture consisting solely of seeds, tubers or root stalks that will promote growth and maintain life. Second, that it is impossible to make up such a mixture with the addition of animal tissue that will promote growth and maintain life.

Green Leaves or Milk

From this point, Dr. McCollum started with his experiments in the feeding of animals to test the correctness of this theory as applied to human beings. The results of his tests have led to the important discoveries that in order to promote growth and maintain life, seeds, stalks and tubers must be supplemented either with the green leaves of plants or with milk or some constituent of milk. The biological differences between ripened seeds and the growing leaves are plain. Seeds, ripened stalks or the matured tubers of plants are made up of matured, or dead, cells. They are designed by nature as food for the growing germ of the plant. They are not complete food for growing animals. The green leaves, on the other hand, are the living laboratory of the plant. They are made up of growing cells, and tests show that they are essential to the growth of animals. In the same way the muscle tissue of animals corresponds to the matured cells of seeds, and is not sufficient for the maintenance of animal life. Milk corresponds to the leaf cells and does contain the elements necessary to the growth of animals.

Famous Rat Experiments

This theory is repeatedly proven in tests with young animals. A series of pens of rats fed under this test was shown at the recent Dairy Farm Exposition, at New York City. There were six pens of rats on exhibit. The rats were all of the same age and had all been handled in the same way except in the matter of feeding. Lot 1 had been fed on seeds of corn, wheat, peas, beans, oats and rice. The rats were small, rough and unthrifty, showing that rats cannot be maintained on seeds alone. Lot 2 was fed on steak, wheat, corn, peas, beans, oats and rice and were but little better than Lot 1, showing that rats cannot live on meat and seeds alone. Lot 3 was fed on wheat, corn, peas, beans, oats, rice and powdered milk and were fat and fully matured and in splendid condition, showing that seeds and milk make rats grow normally. Lot 4 was fed on wheat, casein, milk powder, salts, dextrin, and butter fat, and were the best of the group, showing that excellent growth is made on a good feed mixture. Lot 5 was fed on corn, peas and green alfalfa and appeared much like the rats in Lot 3, showing that leaves combined with seeds make rats grow Lot 6 had been fed on oats, flaxseed, oil meal, salts and dextrin and the rats were small, rough and had developed sore eyes, showing that immaturity and sore eyes in rats result from the feeding of a wrong mixture. The sore eyes were readily cured by the addition of green leaves and more readily cured by the addition of milk or milk fat to the ration. The attendant told us that in these experiments the rats fed as in Lots 1 and 6 would not reproduce and died before their normal time. Rats fed as in Lot 2 never raised the second generation, and only when fed as in Lot 3, 4 and 5 did they reproduce and show normal development of young.

The Essentials of Life

From a multiplicity of such tests, Dr. McCollum has drawn two general conclusions: First that milk or milk products contain an essential food element which the Doctor has characterized as Fat Soluable A; second that leaves of plants contain another essential of life which he has characterized as Water Soluable B. These two classes of foods are protective foods that must be sup-

plied to promote growth and maintain life. Either one alone will serve, but at least one must be fed.

Some interesting applications of these facts were given. For example, the people of the Orient are essentially leaf eaters. They eat five times as much of the leafy portions of plants as we do. They draw the essential elements primarily from the leaves of plants, and while it maintains life it shows its influence on growth of the small, stocky statures of the Chinese and Japanese. The people of America and northern Europe are milk eaters, drawing from 15 to 20 percent of their sustenance from milk and its products, and these people have shown the best all-around development of any people of the world.

Again, in a small section of New York City there live about 9,000 people, nearly all colored. They use practically no milk and eat very few leafy vegetables. Nearly 100 percent of the children of the community are suffering from the disease known as rickets. Pellagra is an infectious disease that always spreads when and in sections where people eat few leafy vegetables and little milk. In sections where most prevalent it is noticed that the disease disappears in spring when new green vegetables come in, and is never prevalent where the people use milk freely. In this case these two groups of foods act as protective foods, building the system up to where it can throw off the disease germs.

These facts form the soundest basis for the dairy industry. The race cannot exist without the dairy cow.

DAIRYMEN'S LEAGUE PRICES FOR JUNE

Following is the official announcement by the Dairymen's League of the June milk price:

"The contract which the Dairymen's League signed with the dealers April 1st provided that the schedule of prices would be based upon the prices fixed and determined by the Federal Milk Commission for the Middle States, and should such Federal Milk Commission, for any reason, fail to fix prices, the contract should terminate at the expiration of the last month for which such Commission so fixed prices. As the Milk Commission refused to set the price for the month of June, it has become necessary for the directors to set the same price ($1.80) for that month for those dealers who had not served notice upon the Federal Milk Commission that they would not be bound by the prices fixed by the Commission.

"The following dealers withdrew from the jurisdiction of the Milk Commission May 1st: Borden's Condensed Milk Co., Borden's Farm Products Co., Nestle's Food Co., John Wildi Evaporated Milk Co., Hires Condensed Milk Co., Ithaca Condensed Milk Co., Hudson Condensed Milk Co., Shefford Cheese Co., Wisconsin Condensed Milk Co., Phoenix Cheese Co., International Milk Products Co.

"Therefore, it became necessary May 1st for the League to set a price at which League milk would be sold to those dealers, and an agreement was made with the above dealers for the sale of League milk for the month of May at $2.46 and for the month of June at $1.80 per hundred for 3 percent milk at the 150-160 mile zone."

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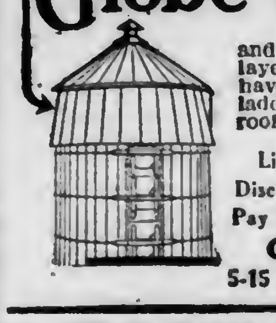

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Garden and Truck Crops

Save Sweet Corn Seed Early

Sweet corn seed that is grown early in the season may be left on the stalks until it is thoroly ripe and hard. That which is grown late in the summer will have to complete its growth in the fall when the dews are heavy, the days short and the nights cold. Consequently that seed will never have the opportunity to perfect itself as the earlier corn has.

Sometimes the birds will force the grower to gather the seed ears earlier than he otherwise would. In that case the seed corn will be a little soft. If it is stored in bulk, it may mold; therefore, it is well to spread it out in a very warm, dry place until it is thoroly dry. In this way the grower will have a dependable supply of seed that will come up strong even under adverse conditions.

Crates and Hampers Scarce

Strawberries were much earlier this season than usual and they sold at a good price as a rule. It is well that they did, because the container had to be paid for out of the selling price. Crates which hold 32 quarts cost 55 cents and the gift 24-quart crates cost 35 cents. Asparagus growers find it quite impossible to obtain asparagus crates and are forced to use strawberry crates; in fact, many growers are forced to use Georgia peach carriers which they may happen to have on hand. Green peas and hampers are going to market in large quantities. Those growers who have their hampers on hand may thank their lucky stars and their own good foresight and judgment as well. Hampers are selling at 16 cents each and it is almost impossible to get them. In war times nothing gets cheaper; the only thing that depreciates in value is money. Packages are terribly high priced but the selling prices are as a rule high enough to make up for it. The grower who is a good business man will try his very best to be prepared for the emergency so that he will not have to chop wood when he should be tending his crops.

Farmers Are Getting Rich?

I have just read a wonderful account about an early tomato grower who cleared nearly $3,000 last year on less than 5 acres of tomatoes. What is more, that was after all expenses for production and selling were paid. The writer said that it was a common thing for the grower to make that fine profit.

Of course, I believe it but I would sooner see it done. City folks believe it and believe that they can do it. The result of printing such stories is that the city folks believe that the farmers are getting rich, when most of them are actually too poor to have a supply of water in their homes. The farmer who reads such a misleading story is inclined to condemn all the good papers as well as the poor ones. Perhaps after all the optimistic farmer himself is to blame. One of the joys of a farmer's life is to blow about a certain particularly profitable crop he had a few years ago. Wouldn't the farmers and the agricultural writers have a better reputation if they tried to tell the truth in a very accurate and encouraging manner rather than stretching the truth until it disgusts the farmers and excites the city people?

Home Grown Seed Potatoes

A few years ago northern grown seed potatoes were supposed to be the only thing to plant, because they actually produced a better yield than our home grown seed. It just happens that the earlier we get our potatoes planted the larger the yield will be. Consequently many farmers got into the habit of planting northern grown seed as early as possible each spring. Much of the crop growing within the jurisdiction of the Pennsylvania Farmer is sold early in the summer. That which is saved for winter sales, home use and perhaps for seed purposes has completed its growth by mid-summer and the crop of potatoes has to lay in the hot soil until it is dug early in the fall. During that time the potatoes become dead ripe and old and if they are planted the next spring they do not seem to be able to produce as well as northern-grown seed.

Surely there is some very good reason for this. Northern grown potatoes grow where the season is cool and short with the result that the potatoes are still growing when frost kills the vines. The potatoes are green, vigorous and when planted the next spring they are very productive. One drawback to the northern grown seed is that it carries considerable more disease, as a rule. Our growers are learning to produce their own "green" seed by planting late in the summer; any time in August seems to be early enough. It is planted a little closer than the regular crop and if the grower will wait 2 or 3 weeks after the vines are killed by frost, he will find a heavy set of medium sized potatoes that will outyield most anything he can buy, when planted the next spring. Seed which is to be planted late in the summer is grown the season before and it is better if it can be held in cold storage from April until about 2 weeks before it is to be planted. However, it may be kept spread out in a cool dry place provided the sprouts are removed occasionally.—R. W. DeBaun.

Timely Fruit Notes

By Dr. J. P. Stewart

Soybeans in an Orchard

"Having removed the peach trees from among the apple trees in my orchard preparatory to sewing in alfalfa, I wish to sow soybeans for a humus crop. As this is a new crop to me I am writing to you for information. How many soybeans shall I sow per acre and when? Where can I procure the culture for inoculation? How much of this per acre? How expensive is it?

"Which is better for an acid soil, lump lime or ground rock?"—H. W. A., Cumberland County, Pa.

Soybeans used as an orchard cover crop are generally sown about the last of June or the first of July, at the rate of 40 to 50 pounds of seed to the acre.

The commercial materials for inoculating soybeans are obtainable from firms which manufacture the cultures and the directions needed are obtainable from them.

At present, however, we believe that the glue method of inoculating is preferable. Dissolve about 6 ounces of glue in a gallon of hot water; allow the water to cool and then moisten the bean seed with it and immediately sift over the moist seed a little fresh soil from a soybean field. Two quarts of this soil will be ample to cover 2 bushels of the soybean seed, and the sifting should simply be continued until the seed gets plainly dirty. Both soil and seed should be kept out of the light so far as possible and should be planted as soon as possible after the sifting. This method is proving very satisfactory in the work here, and if you are unable to secure a sufficient quantity of soil from soybean fields near your place, it is possible that some could be obtained from the station when you need it, simply for the cost of securing it.

There is very little difference in final effect on the soil between applications of lump lime properly slaked and applications of pulverized limestone. It takes nearly two tons of the latter to equal one ton of the former, however, so that the relative cost of the two operations should be the determining factor.

FROZEN PEACH TREES

The peach growers of northen and some parts of western Pennsylvania face a serious situation due to the extreme low temperatures the past winter. The wood froze to the trunks in many cases, while in virtually all cases buds and small twigs froze

Heroic measures are necessary to save trees so damaged. The best treatment is "dehorning," according to Mr. Mason of State College, Pa. The frozen wood may be cut back as far as the damage extends, even to the trunks, although in such extreme cases it is more practical to remove the injured tree and plant a new one.

Where the injury extends only to the larger limbs, the dehorned trees will put out a heavy new growth and form a new head in a year. On this new wood there will be fruit-buds, so that in many cases the crop the following year is not much reduced. Dehorning should be done early in May, when the buds are beginning to push out. At that time the ends of the limbs will not dry out, and the large cuts will heal quickly.

Intensive cultivation is essential after dehorning. Cultivate the ground thoroly every ten or fifteen days, so as to maintain a good dust mulch until July 15. Then sow the best cover-crop for the locality, preferably one of the clovers.

Unless the trees are cultivated they will put out a very short growth and most likely succumb the following winter. Do not cultivate after July 15.

Prof. Watts says: "We can smile all we want to about girl and women farmers, but one thing is certain; they will be used in large numbers for food production work if the war continues much longer. They are anxious to do their bit and they are becoming better organized every day for real farm and garden work. We should plan to use them as much as possible in order that men may be available for the army and kinds of work which women can not do."

Poultry

BELGIAN HARE MANAGEMENT

On the farm there is a chance to make the Belgian hare profitable as well as a source of pleasure and a pleasing variation in the home food supply. We keep the hares mainly for two reasons. They furnish an inexpensive source of meat supply at home which is always ready for use. The cost of feeding the hares is much less than the cost of feeding poultry.

What do Belgian hares need to keep them in a healthful condition? Almost anything that a cow will eat is relished by a hare. In the summer the hares like fresh clover, the trimmings from vegetables and such waste material which is of no value worth mentioning. A few extra rows of vegetables in the garden will raise a bountiful supply of food for storing for winter feed. The hare will enjoy carrots, mangels, cabbages or turnips and it takes a surprisingly small amount of cheap feed to keep a few hares for home use. Skim milk is relished by the hares. When the does are feeding their young it pays to give them milk and also oats. The amount of oats necessary will not be large and the improvement in the quality and growth of the young will be more than worth the extra expense. In the winter the clover chaff which falls on the barn floor around the mangers can be scraped up and saved for feeding the hares.

The large item in managing the hares is the labor. While they do not take much time it must be remembered that regular attention is necessary for success. Twice a day the feeding work should be carefully followed out. Of course this takes time on a stock farm but if the Belgian hare business can be turned over to the children it will pay. They will enjoy the care of the hares and it will teach them some of the rules of managing animals. If they do the work they can also receive the profits from the business and this will be a stimulation.

The hare is a healthful animal and much easier to raise than poultry. The diseases that trouble them can largely be avoided by furnishing hutches that are clean and reached by the sunlight. A hutch six feet long, three feet deep and a foot high will be about right for one breeding doe. There should be a closed nest in one end for the young. It pays to keep the hutches clean as there is little satisfaction in raising the animals unless they are maintained in the healthful condition which means vigorous young that grow rapidly and find a ready sale.

Several years ago the Belgian hare business was a sort of craze and many men lost money by considering it a get-rich-quick scheme. It is much like any other business and yields only a fair profit for the amount of time and money expended. However, as meat products are increasing in value it seems only logical that many city buyers will become interested in Belgian hare meat as a means of cutting down their cost of living. In our community some farmers prefer the hare to poultry meat and they raise hares just for their own use without making any effort to sell much of the stock. As the demand grows many farmers will have a chance to sell breeding stock to city buyers and other farmers who wish to raise the animals on a small scale. With one pair a fair supply of rabbit meat is assured as the doe can safely be bred about four times each year. The economy in feeding hares is their strongest point, in our opinion. With all grain crops high in price the poultryman has a much more serious problem than the producer of hares and rabbits.—R. G. Kirby, Michigan.

JUNE POULTRY POINTERS

When the summer sun becomes hot the little chicks in the brood coops need protection. If the coops are allowed no shade and the chicks cannot range in the shade they will suffer and their growth will be retarded. About the finest shade that we have been able to supply for chicks are long rows of Cuthbert raspberries. These canes grow a dense mass of foliage and the small chicks can hide among the green leaves and range along the shaded rows. The coops should be placed close enough to the berry rows so that they will receive some of the shade and in that way the mother hen is better able to stand the long hot days.

We have heard the use of shallow pans advised for watering flocks of poultry. In our experience the hens walk in the pans and the water is soon unfit for use. By giving the water in a galvanized iron pail it keeps fresh and clean for a longer time. Place the pail in the shade and change the water twice each day during hot weather. Do not place deep pails of water in yards where young chicks are ranging or some of them will fly up on the edge of the pail and then possibly tumble in and drown.

In feeding sour milk to chicks it it necessary to use sanitary feeders or clean the dishes very often. It might be mentioned that a sanitary feeder is not always sanitary. They must also be frequently scrubbed and scalded to keep them in fit condition for use. Many small chicks are lost every year from careless feeding in dirty dishes. It often leads to cases of bowel trouble during hot weather which might be easily avoided.

The best method of keeping down red mites is prevention. Every week it pays to paint the roosts with kerosene oil. Do not wait until clusters of the red mites hang beneath the roosts, all filled full of the red blood which it has taken good poultry feed to produce. When they are well established in every crevice in the poultry house it means a lot of work to eradicate them.

Young chicks can run in the vegetable garden to the advantage of the growing crops. They will gather many bugs and the amount of scratching that they do in the rows will not harm the vegetables. We raise chicks with the potatoes, mangels, beets, carrots and radishes without any losses. They will sometimes pick the young onions and they will injure cabbages and ripe tomatoes.—R. G. Kirby, Michigan.

Turn under the straw, leaves, and litter; don't burn them. Humus is not made of smoke.

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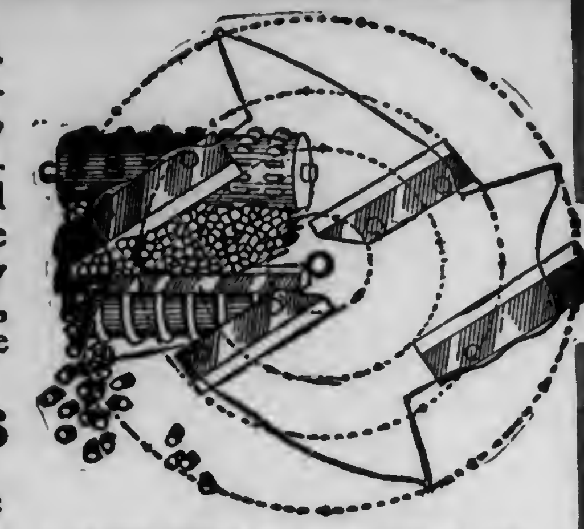

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Farm Products Prices and Prospects

GETTING THE FOOD ACROSS

A Few Sidelights on Results of International Food Sharing

The United States Food Administration is a war institution whose principal concern is feeding the people whose armies are arrayed against the common enemy. Below are summarized some of the more important conditions prevailing now as compared with a year ago when the Food Administration was being organized.

Emphasis is placed on the fact that these results were possible only thru the whole-hearted support of the nation to the general food program. And because of the efforts the American people have made they should be interested in what has been accomplished.

Pork Exports

Exports of pork products for March, 1918, were over 50 percent larger than for any previous month in the past seven years and almost three times as great as the highest amount exported in any month in the four years before 1915.

Beef Exports

Exports of beef products for March, 1918, were more than 20 percent higher than for any previous month in the past seven years and more than twice as great as the highest amount exported in any month in the four years before 1915.

Wheat and Flour Exports

From July 1, 1917, to March 31, 1918, we exported to the Allies 80,000,000 bushels of wheat and wheat flour, or 124 percent of the amount available for export on July 1. This was possible thru conservation at home. A year ago we exported to the Allies only 51 percent of the amount available for export on July 1.

Exports of Other Cereals

Exports of rye and rye flour from July 1, 1917, thru March, 1918, were 32 percent larger than last year; of barley 55 percent larger; of oats and oatmeal 34 percent larger.

EUROPEAN LIVESTOCK LOSSES

Comparative losses in livestock by the warring and neutral nations of Europe and the general effect on their meat supply may be judged from figures announced by the U. S. Food Administration.

As regards meat, the Central Powers were much better prepared for the war than the Allies. Altho the Allies possessed a greater total number of meat animals, the Central Powers had 42 percent more per capita. This advantage amounted to 33 animals of all classes per 100 population.

Due apparently to acquisition of animals by conquest, Germany has not slaughtered her home supply of live stock as rapidly as otherwise would have been necessary. There is now a practical exhaustion of animals in Belgium, Serbia and Rumania as a result of invasion, according to information from very reliable sources. In total animals the Allies have decreased their herds and flocks 45,787,000 head while Germany has reduced hers about 18,000,000 head—only slightly more than a third as many. The figures include cattle, sheep and hogs. Neutral nations show a total net reduction amounting to 1,412,000 of these animals. The European loss thus exceeds 65,000,000 head without taking into consideration Austria, Turkey and Russia which would, undoubtedly, bring the total to over 100,000,000.

The total number of cattle, sheep and hogs now in the United States is about 187,000,000, according to best estimates, which makes a striking comparison with the European depletion of 100,000,000 animals. Briefly, it appears that Europe has already lost considerably over half as many meat animals as there are in the United States today.

NEW FARM LOAN ISSUE

In popularity and usefulness the federal land bank system has exceeded all expectations. There are now outstanding approximately $160,000,000 of farm loan bonds secured by mortgages approved by the twelve land banks located in different sections of the country, and applications for loans to farmers are said to be increasing steadily. A new issue of farm loan bonds has just been authorized for an indefinite amount, the total depending upon the operations of the federal land banks. There is an understanding, however, that $30,000,000 of these securities will be ready by July 1, and a banking syndicate has been formed to take and place $15,000,000 thereof, with an option upon the remaining $15,000,000. The rato of interest on this new issue has been fixed at 5 percent per annum, as against a 4½ percent rate upon the last preceding farm loan bonds, the increase having been decided upon in order to meet existing money and investment market conditions. The new bonds, offered to the public at 101 and interest, yielding 4¾ percent, have, it is announced, been already largely absorbed by investors. The desirability of the farm loan bonds is increased by the fact that they are exempt from federal or state taxation, and are also acceptable as security for government deposits, including postal savings banks, in the banks of the country.

THE GOVERNMENT NEEDS BLACK WALNUT TIMBER

Black walnut is practically indispensable in the manufacture of gun stocks and airplane propellers. There is no wood in this country which is yet known to be a practical substitute. The production of rifles at the arsenals is seriously handicapped by an inadequate supply of this wood.

Ohio woodlands contain good walnut trees which would assist materially in supplying the Government needs. There are two very good reasons why woodland owners should dispose of their trees at this time. It is obviously a patriotic duty to contribute to a need which is so urgent; a need which affects the first rank of the fighting strength of the nation, namely rifle production. The prices which can be obtained for walnut logs have increased probably by 100 percent since the European war started. It is probable that they will not continue as high after the war. Owners will therefore be making no financial sacrifice in selling at this time. Moreover many of the walnut trees in the woodlands have reached maturity, and are gradually deteriorating Thus their value and usefulness would be decreasing year after year, Trees which are growing in the woods afford the best material, especially for gun stocks, for the reason that they contain a greater percent of dark heartwood. Sapwood cannot be used in gun stocks but is no defect for airplane propellers. Many trees growing in the open, however, can be used and if the owner desires to sell them, they should be put on the market. Shade trees about houses and buildings should not be cut, neither should young trees too small for practical purposes be taken.

The Government has made special request to mill men and other users that walnut lumber be used for no other than war munition purposes. It is the duty of parties selling this material to make sure that it eventually gets into the Government's hands. Certain mill firms have contracts with the Government and handle all material purchased either in the tree, log, or as lumber.

NEW YORK STATE BEAN GROWERS MEET

Fourteen bean growing counties were represented at a meeting of New York State growers held in Rochester, Wednesday, May 29. At this meeting it was decided that a State Bean Growers' Association be formed. The meeting was called to order by Mr. Silas L. Strivings, representative of the Bean Growers of New York state on the Federal Food Administration Bean Advisory Committee.

A committee made the following recommendations which were adopted:

We recommend that the bean growers of the state form a State Bean Growers' Association. The objects of the Association shall be:

1. To formulate plans that will increase the consumption of beans. (This recommendation is made in view of the fact that there are thousands of bushels of beans now in the hands of growers for which there is no market).

2. To use every effort possible to secure a uniform system of weighing, picking and marketing.

3. To stimulate the improvement of the bean crops by selection, and better methods of controlling bean diseases and insect troubles.

The officers and directiors elected are as follows: Fitch M. Davis, Livonia, N. Y., president; Charles G. Porter, Albion, N. Y., vice-president; H. E. Cox, N. Rush, N. Y., secretary-treasurer.

The following resolution was unanimously adopted:

Whereas, the bean producers of New York state have large quantities of beans on hand that they are unable to market, and

Whereas, it is reported that there is a great shortage of food in this country, therefore be it

Resolved, that it is the desire of this meeting that Mr. Strivings be asked to present the situation to the state and Federal Food Administrations and ask them to do all in their power to stimulate the consumption of beans and thereby help out our food that is already scarce.

The conference voted further that there should be an inspection of bean fields for seed proposed later in the season by representatives of the U. S. Department of Agriculture.

Dr. M. F. Barrus of the Department of Plant Pathology of Cornell, outlined what the department is doing in striving to control bean diseases. Professor John Barron of the Department of Farm Crops was present and outlined the general bean situation in the state.

It was suggested that the Food Administration advise the use of beans as a substitute for the foods that are now scarce.—E. C. W.

COMPARATIVE SUGAR PRICES

During the first year of the war, the United States consumed more than four million tons of sugar. The wholesale price of refined sugar in this country at the present time is $7.30 per hundred pounds, as compared with $9.15 last August. The regulated wholesale price of sugar in various foreign countries makes an interesting comparison:

United Kingdom, $12.59 per hundred pounds; France, $12.28; Italy, $26.30; Canada, $8.07; United States, $7.30.

An increase of one cent per pound in the price of sugar in the United States would take at least $82,185,820 out of the pockets of American consumers in one year.

FOOD FACTS OF FOREIGN LANDS

Moderate shipments of wheat and flour are being made for Australia to the Pacific coast of the United States.

—

In spite of scarcity of implements and shortage of farm labor, England, Scotland and Wales have all increased their acreage of wheat.

—

Horse flesh is included among the meats now rationed in England under the card system.

—

The maximum price at which farmers may sell cattle for slaughter in Switzerland has been fixed at 23 cents per pound on the farm. Maximum prices for meats have also been established.

—

All private stocks of olive oil in Italy in excess of actual family needs have been requisitioned by the Government.

Live Stock

MORE PORK A NECESSITY

The country needs more meat to win the war. Hogs supply meat more quickly than any other farm animal; therefore the demand must be met by raising more hogs on the farms. The U. S. Department of Agriculture is making a call for an increase of 25 to 50 percent in the number of hogs raised and fattened in this country. Most of this increase is asked for in the corn-belt states, but there is need of more hogs in every state. The demand is certain to remain heavy, and prices will be good. Just how high pork will sell for in the next two or three years, no one knows, but it is certain that the demand will hold, and all of the sows bred now will produce pigs for an urgent market.

In addition to the immediate needs, there is an abundant supply of grains, particularly corn, oats and barley. Prices on these grains are also high and many will be tempted to sell in the form of grain rather than feed out to stock on the farm. But a little figuring will show that even with ordinary feeding the grain may be made to bring more if sold in the form of pork. It is good farming to raise all of the live stock that the farm will support.

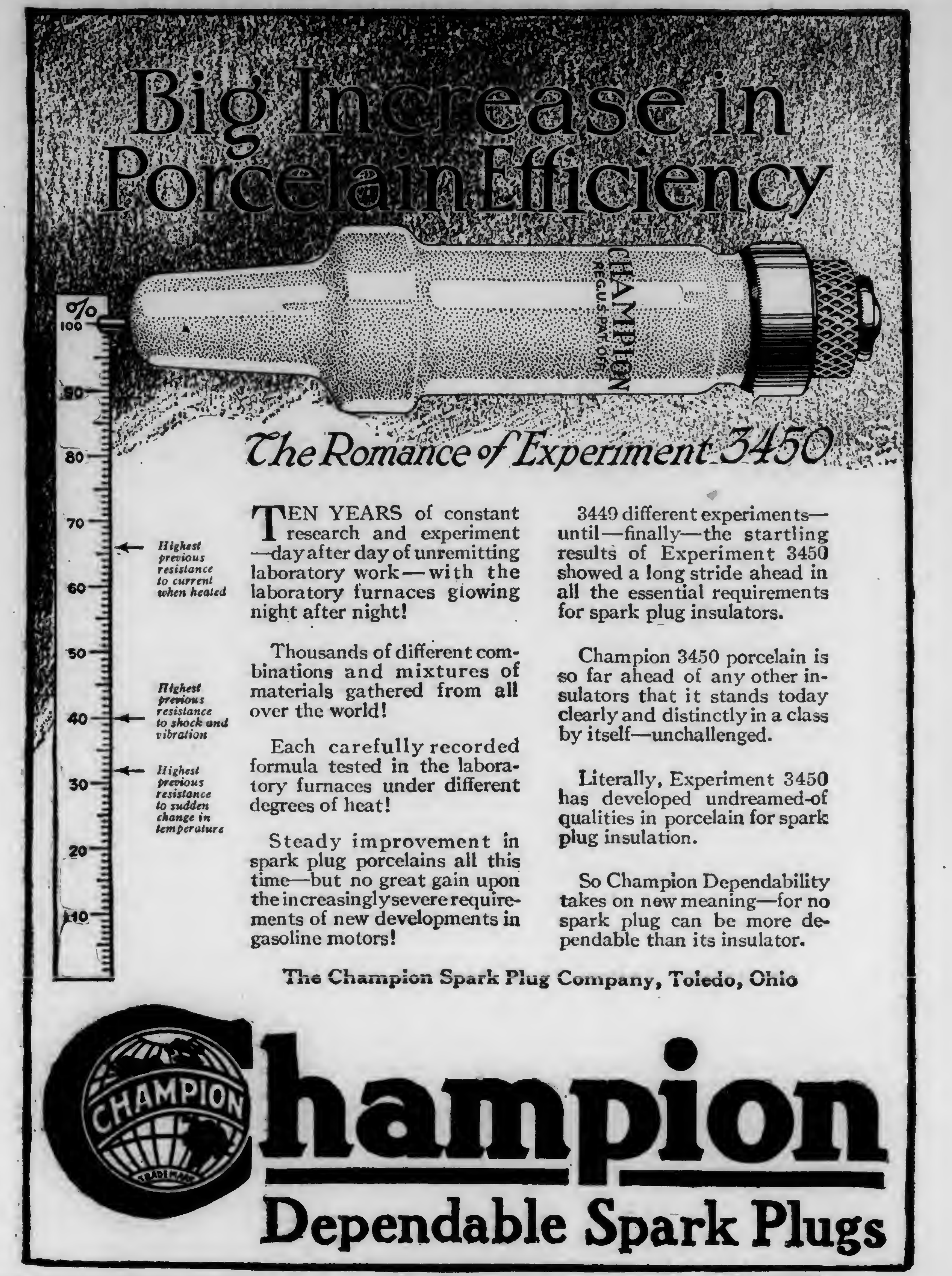
WOOL VALUES

Following is a schedule of wool valuations as of July 30, 1917, which has been made the base price for this year's clip. Figures are for wools on the clean scoured basis and on grades of Ohio and similar, including New England states, New York, Pennsylvania, West Virginia, Kentucky, Virginia, Michigan, New Jersey, Delaware and Maryland. The figures are as put out in special circular by the Wool Division of the Federal War Industries Board:

Grade	Clean Scoured Basis
Fine delaine	$1.85
Fine clothing	1.70@1.75
Half-blood staple	1.68
Half-blood clothing	1.60@1.62
Three-eighths staple	1.45
Three-eighths clothing	1.42
Quarter-blood staple	1.32
Quarter-blood clothing	1.30
Low quarter-blood	1.17
Common and braid	1.07

According to regulations, as previously given in these columns, the growers shall receive a price for wool based on the above valuations less the profit to the dealer (not to exceed 1½ cents per pound on total season's business), and less freight to seaboard, moisture shrinkage and interest. Growers knowing the average shrinkage of their wools can calculate pretty closely from these regulations just about what they should be offered for their wool in their local markets. Tabulations showing the average shrinkage for different sections will be published as soon as available.

While growers may sell to licensed dealers in their local markets, the officials suggest that those who desire to do so may pool their clips in quantities of not less than minimum carloads of 16,000 pounds and consign the wools so pooled as one account to any approved dealer in any approved distributing center. This may be done thru county agents or others, thus eliminating the profits of one middleman.



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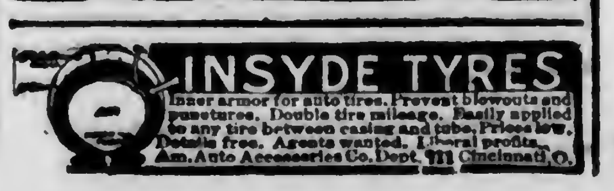

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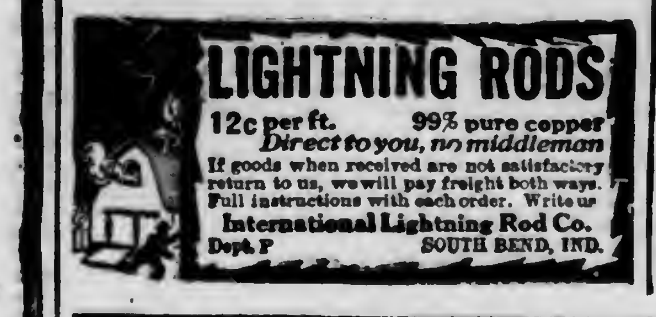

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 10, 1918.

The new potato market opened the week with the heaviest supplies of the season here. There were over 80 cars of potatoes from Florida, North Carolina, South Carolina, Georgia, Norfolk and Eastern Shore The greater bulk of these heavy supplies, however, were more or less heated and in bad order, with some practically worthless. While prices are quite a little lower than those prevailing a week ago, the market was active on good sound stock at the decline. Best from all sections is selling up to $4.50 per barrel. The range generally on No. 1 is from $3@4.50; No. 2's, $1.50 @2.75. Badly defective stock from all sections sold all the way from 80c@$2.50 as to condition. Best sacked potatoes brought $2.75@3; No. 2's, $1.75@2. Old potatoes are also lower than last week, but the decline is not so marked as with the new stock. The range is $1.25@1.65 per cwt. which is only from 5@10c lower than last week.

Very few sweet potatoes are now on the market and prices are ruling high. No. 1's are selling generally from $2.75@3 per hamper; No. 2's $1.50@2.

Vegetables

There is very little change to be noted in asparagus, with the possible exception that extra fancy or colossal is somewhat firmer. Culls are selling from 7@12c; prime, 10@17c; fancy, 15@22c; Colossal, 22@28c. Strictly fancy green beans have been rather scarce and bringing good prices. Norfolk green beans are selling from $3@3.50 per hamper and wax beans from $3@3.50. The first New Jersey beans have made their appearance since our last report; green selling at $1.75 per ⅝ bushel basket and wax from $1.75@2. Beans from points further south are not neglected by the trade. Dried beans continue in ample supply and the market ruled dull and unchanged. Marrows are selling from $13.50@14 per cwt; pea and medium, $12@13; Red Kidneys, $12@13.50. While prices on new beets are lower than last week, the market is firm and active, especially on New Jersey and Pennsylvania beets, which are selling readily at 4@6c per bunch. Best Norfolk beets bring 4c, but some arriving in poor condition sells down as low as 1c per bunch. Old carrots are in light supply and firm, with nearby washed stock selling from $3@4 per barrel, New carrots are a little more plentifull, but active at 2@4c per bunch as to quality.

The sharp advance in the cabbage market reported in these columns last week was of short duration and prices have declined to about their former level. Norfolk crates are selling generally from $1@1.75; barrels, $1@1.50; Eastern Shore, $1@2.25 per crate. Some cabbage arrived in very poor condition and sold at low as 30c per barrel. Some Southern sweet corn was here early this week and sold from $6@6.50 per barrel. Cucumbers are mostly poor in quality, selling mostly from $1@1.50 per hamper, with some better selling from $1.75@2.25. Egg plants, after ranging very high all season, are at last selling at reasonable prices. Supplies are now more liberal and sales are being made from $1.25@2.25 per crate as to size and quality. Nearby kale is in lighter supply, selling from $1@1.25 per barrel. There have been no lima beans on the market this week. Lettuce is meeting a fair demand when fancy, best Pennsylvania barrels selling at $1.50@2, and New Jersey boxes from $1@1.50. New York state lettuce has made its appearance on the market this week and is selling at $1.75@2 per box and $1.50 per hamper. Mushrooms are very scarce and high, ranging all the way from 50@75c per pound. The onion market is showing a little more activity; best selling from $1.25@1.35 per crate, with other sales being made from 75c@$1, except on extremely poor stock which is selling as low as 25@50c. Practically the only peas on the market at this time are New Jerseys which are meeting a good demand. Large peas are selling from 85c@$1.25 per basket and small from 60@75c. Nearby parsley is in good demand at $1.50 @2 per hamper, with Southern $3.50@4 50 per barrel. The high prices that has been prevailing on peppers all season seems to be over. The same grade of peppers that sold early last week for $3.25 are selling this week at $1.75 per crate, with poorer selling as low as $1.25. Radishes, from Pennsylvania and New Jersey points are active at 1½@2½c per bunch. Nearby scallions are also higher, selling from $1@1.50 per 100. Rhubarb has also advanced and is meeting ready sale a $2.50@4 per 100 bunch. Spinach is scarce and when on the market has sold promptly from $1.25@2.50 per barrel. Squash is in light supply but selling slowly at $1@1.50 per hamper. A little New Jersey squash made its appearance on the market but not in sufficient quantity as yet to quote. Strictly fancy tomatoes are in good demand and are bringing good prices. Several cars of Texas tomatoes here this week were being sold at $1.50@1.75 per crate. Floridas have sold all the way from $2@4.50 per crate, as to quality and condition.

Fruits

There has been an active demand for strawberries, supplies of which have been very light for this season of the year. New Jersey berries have been selling all the way from 10@22c per quart, while Pennsylvania berries have been bringing the fine prices of 25@35c per quart. Southern blackberries are in good demand when fancy, and readily bring 20c per quart, with poor and weak selling from 14@17c as to quality. A few southern huckleberries are selling promptly at 15@20c per quart. New Jersey raspberries have made their appearance since our last report. The first sold around 25c per pint, and now bringing 15@18c per pint. There is a good demand for nearby sour cherries, which have sold from 8@10c per pound. Sweet cherries are very scarce and have sold generally from $1@1.50 per basket, with some poor at 75c. California cantaloupes are now arriving daily, and meeting a good demand. At this writing standard crates are selling around $7.50; pony crates, $6 and flat crates $2.50. Southern cantaloupes are mostly poor, both in condition and quality and are selling low, ranging generally from $1.50@3.50 per crate. Watermelons while a little more plentiful, are still in light supply and bringing the fine prices of 50@75c each with extra fancy large higher. A few Willow Twig barreled apples have sold around $10 per barrel, with best Winesaps at $8@9. No new southern apples have been on the market yet this season, but are expected very soon.

Poultry

The market on live fowl is a little lower than a week ago, but cleaning up promptly every day at the decline. Supplies are moderate. Fowls are selling from 32c@35c per pound. Spring chickens are also lower than last week, but the market is ruling firm and active at the decline. Spring chickens, not Leghorns, are selling from 48@55c per pound. Leghorn are bringing from 42@46c, as to size, those weighing from 1½@2 pounds each being the most desirable. Roosters are unchanged and selling generally from 26@30c per pound.

Eggs

The egg market is showing another advance over that reported in these columns last week. Strictly fine eggs continue scarce and such, when here, sell promptly at 36½c per dozen for current receipts. Firsts sell at 38c per dozen; Western firsts, 36½c; Western extra firsts, are 38c. Some of the offerings of eggs are showing more or less hot weather defects and these are selling at lower and irregular prices, as to quality and loss shown.

BALTIMORE PRODUCE

Baltimore, Md., June 10, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1@1.20 cwt; do., New York, $1@1.20. Sweet potatoes, yellow, $6@6.50 bbl; $2@2.25 hamper. Asparagus, $1.50@2.25 doz. Beans, green, $1.50@2 basket; do., wax, $1.50@2 basket. Beets, 3@5c bch. Cabbage, new, $1@1.50 crate. Cucumbers, $1.50@2.25 crate. Lettuce, 30@50c basket. Onions, yellow, $1.50@1.75 cwt; spring, $1@1.25 per 100 bchs. Peas, $1.25@1.60 basket. Radishes, $1@1.25 basket. Tomatoes, $2.50@4 crate. Rhubarb, $2 per 100.

Fruit.—Strawberries, 8@12c qt; Eastern Shore, 9@14c. Cherries, nearby red, 10@12c lb; do white, 9@10c lb. Peaches, $1.50 @2 carrier.

Butter.—Creamery, western, fancy, 43@44c; choice, 42@43c; pound prints, 45@46c; do., firsts, 44@45c. Nearby creamery 40@41c; do., firsts, 38@39c. Dairy prints, 31@32c; do., firsts, 31@32c.

Eggs.—State, Pennsylvania and nearby, 34c; Eastern Shore and Virginia, 34c; Southerns, 33c.

Live Poultry.—Chickens, 30@33c; do., springers, 50@55c; old roosters, 18@20c; old hens, 33@34c lb; ducks, 25@28c; pigeons, 35@40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $30.50, standard timothy, $29.50; No. 2 timothy, $28 @29; No. 1 light clover mixed, $27@28; No. 2 light clover, $25@27. No. 1 clover mixed, $26@27; No. 2 $25@27. No. 1 straight rye straw, $16.50@17. No. 1 tangled, $15.50@16; wheat straw, $14@15; oats straw, $12@15.

Grains.—Wheat, bag lots, $2.05@2.12 bu. Corn, bag lots, white, $1.25 bu; yellow ear corn, $1.58 bu. Standard white oats, 81@81½c; No. 3 white, 80½@81c. Rye, No. 2 western, $2; bag lots, $1.50@1.65 bu.

PITTSBURGH PRODUCE

Pittsburgh, Pa., June 10, 1918.

Country produce is moving out in large volume. Strawberries and apples are moderately active. In the vegetable section there is a large distribution of potatoes, onions, tomatoes, cabbage, lettuce, beans, celery and other lines.

Asparagus, southern, $2@3 box; do., home grown, 70@80c per bundle. Beans, green, $1.50@2 hamper. Beets, $1@1.25 hamper. Cabbage, $1.50@2.25 crate. Carrots, new, 90c@$1 basket. Cucumbers, $3.50@4 hamper. Horseradish, $5.50@6 bbl. Lettuce, southern, $1.25@1.75 hamper; do. leaf, 10@20c bkt. Onions, $1@1.25 sack; yellow, 85c@$1. Peas, $2@2.25 hamper. Potatoes, old, $1.50@1.75 sack; do., new, $3.50@6.50 bbl., sweet, $1.90@2 hamper. Radishes, 20@30c doz. Rhubarb, 20@25c bundle. Spinach, 30@35c bu. Tomatoes, $2@2.15 flat.

Apples, $5@7.50 bbl. Strawberries, $6@7.25 crate; do. 23@25c qt. Cherries, $3.75 @4.50 crate

The demand for poultry holds up well and there seems little danger of accumulation. Receipts are not heavy and fancy stocks are easily handled at the high prices prevailing. The bulk of supplies is shipped from distant points in the South and West.

Live Poultry.—Hens, 27@28c lb; springers, 32@35c; roosters, 20@22c; turkeys, 25@28c; ducks, 28@30c; geese, 20@22c; guinea hens, $1 pr.

Dressed Poultry.—Hens, 33@35c lb; springers, 35@40c; turkeys, 38@40c; ducks, 35@36c; fowls, 38@40c.

At Chicago Saturday the price of creamery butter was advanced 1 cent a pound and a like advance was made here, effective this morning. Production is increasing, but as the Government is a free buyer prices do not relax materially. The egg market is quiet and steady on best grades. Inferior stock can be secured at concessions. Receipts of eggs are not as heavy as they were.

Elgin prints, 45½@46c; Elgin tubs, 45 @45½c; New York cheese, 28@30c; do., Swiss, 33@38c. Selected eggs, 36@37c; eggs at mark, 33@35c.

Grain and Hay.—No. 2 yellow ear corn, $1.75@1.80 bu; No. 3 yellow shelled, $1.70 @1.75; No. 2 white oats, 80@81c; No. 3 do., 79@79½c bu; standard oats, 79½@80c bu; No. 1 timothy hay, $18.50@19 ton; No. 2 do., $16.50@17.50. No. 1 light mixed, $16.50@17. Rye straw, $11@11.50. Oat straw, $9.50@10. Wheat straw, $11@11.50.

LANCASTER PRODUCE

Lancaster, Pa., June 10, 1918.

The annual rush of housewives for strawberries for preserving occurred on the markets this morning, and despite an extraordinary supply, stalls were cleared of the berries early in the morning at prices ranging from fifteen to twenty cents a box. There was a brisk demand for all kinds of produce and prices were firmly held.

Butter and Eggs.—Creamery butter, 55c per lb; country butter, 50@55c per lb; fresh eggs, 37@38c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25; live chickens, $1.75@2 per pair; old live chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 7@8c per bunch; spinach, 20c per ½ pk; potatoes, 8@12c per ½ pk; do., 40@75c per bu; new potatoes, 20@30c per ½ pk; sweet potatoes, 25@30c ½ pk; cabbage, 5@10c head; lettuce, 5@12c head; new peas, 30c ½ pk; new beans, 25@30c ½ pk; apples, 35@40c ½ pk; strawberries, 15@20c box.

Grain Market.—No. 1 timothy hay, $20 per ton; mixed hay, $18; milling wheat, $2.06 bu; rye, $1.90; oats, 80c; shelled corn, $1.40.

YORK PRODUCE MARKET

York, Pa., June 10, 1918.

There was a large supply of berries at the city markets this week. The supply exceeded the demand. Prices fell accordingly. Some of the very nicest berries could be had as low as 6@8c a box. Peas were also plenty and dropped to 12@15c ¼ pk. Other prices were normal.

Eggs.—30@32c per dozen.

Butter.—Country, 40@45c lb; separator, 45@48c lb. Milk, 10c quart.

Poultry.—Hens, 25c lb; springers, 35c lb; dressed, 65@$1.75 each.

Vegetables.—Potatoes, 5@12c ½ pk; 40 @65c per bu; lettuce, 5c hd; beets, 6c bch; radishes, 5c bch; onions, 2@3c bch; cabbage, 3@12c hd; lima beans, 18c pt; soup beans, 15c pt; corn meal, 10@12c qt; turnips, 20c ½ pk; peas, 12@15c ½ pk.

Fruit.—Apples, 20@40c ½ pk; strawberries, 5@12c; cherries, 10@15c bx; currants, 10c bx.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.15; rye, $2.25; bran, $2.75 cwt; middlings, $3 cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.60; oats, $1; rye, $1.90; bran, cannot be had; middlings, $60 per ton.

NEW YORK PRODUCE

New York City, June 10, 1918.

Butter receipts are lighter than a week ago, and tone is firm. Demand is active for fresh eggs of good quality. Trading in live poultry is fairly active.

Butter firm; receipts, 6,600 tubs; creamery, higher than extras, 44@44½c; extras (92 score), 43½c; firsts, 41½@43c; packing stock, current make, No. 2, 30@30½c.

Cheese firm; receipts, 6,042 boxes; state, whole-milk flats, fresh, special, 23½@23¾c; do. average run, 23@23¼c.

Poultry.—Live firm; chickens, broilers, 50@60c; other prices not settled. Dressed firm; fowls, 30@36c; turkeys, 25@39c.

Eggs.—Irregular; receipts, 14,894 cases; fresh-gathered extras, 38@39c; fresh-gathered, storage-packed firsts. 36½@37½c. fresh-gathered, regular-packed extra firsts, 36½@37½c; do, firsts, 33½@36; state, Pennsylvania and nearby Western hennery white, fine to fancy, 43@45c; state, Pennsylvaania and nearby hennery browns, 38@41c; do. gathered brown and mixed colors, 30@37c.

Vegetables.—Asparagus, fancy, $2.25@3; prime, $1.50@2; Beets, per 100 bchs, $2@4; cabbage, per crate, 50@$3; lettuce, per crate, 75c@$1.50; peas, large, per basket, $1.75@2.75; radishes, per 100 bchs, 50c@$1; scallions, per 100 bchs, $1; spinach, fer bbl, 75c@$1.25.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 10, 1918.

Beef Cattle.—The market for steers, bulls and cows ruled firm and higher under moderate offerings and a fairly active demand. Calves were in good request, and some kinds were a shade stronger under light offerings.

Steers, good to choice, $17@18; fair to good, $15.50@17; common to fair, $13@15.50; bulls, fair to good, $12@14; common to fair, $9@12; cows, fat, per lb., choice, 10½@12½c; fair to good, per lb., 8@10c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $16.50@17; fair to good, $14 @15; common, $10@12; Tennessee, choice, $15@16; other southern, $9@14.

Sheep and Lambs.—Demand for sheep was only moderate and the market ruled a shade easier, offerings being moderate, but ample. Spring lambs ruled a shade firmer under light offerings, but demand was only moderate.

Sheep, sheared, wethers, extras, $13.50@14; good to choiice, $12.50@13; medium, $10@11; common, $6@8; ewes, heavy, fat, $11@12; lambs, spring, $21@22.

Hogs.—Demand was fairly active and the market ruled firm, but without quotable change. Offerings were only moderate and there was still complaint of stock being delayed in transit. Quotations for best western, $19.

City Dressed Stock.—The market for steers, heifers and cows ruled firm under a good demand and moderate offerings Calves sold fairly and ruled a shade firmer with supplies well under control. There was little trading in other descriptions and prices were without important change.

Steers, 24@29c; heifers, 22@25c; cows, 18@24c; calves, 26@27c; southern and barnyards, 16@20c; country dressed, 21@23c; sheep, choice, 27@28c; lambs, winter, 32@33c; do. spring, 36@37c; hogs, 25¼c.

LIVE STOCK MARKETS

New York City, June 10.—Beeves.—Receipts, 2,380; irregular; steers, $13@17.90; bulls, $9@14.25; cows, $5.50@14.

Calves.—Receipts, 6,880; higher; veals, $15@17.75; culls, $12@14.

Sheep and Lambs.—Receipts, 5,820; steady; sheep, $10@14; yearlings, $14.50@15.35; lambs, $20@22.

Hogs.—Receipts, 4,840; lower; prime hogs, $18.

Pittsburgh, Pa., June 10.—Cattle steady, supply, 70 loads; prime, $17.25@17.60.

Sheep.—Steady; supply, 10 double decks; prime wethers, $13.25@14; culls and common, $5@8; lambs, $10@17.50; veal calves, $16@16.50.

Hogs.—Lower; receipts, 50 double decks; prime heavy, $17@17.10; mediums, heavy yorkers, light yorkers and pigs, $17.75@17.80; roughs, $14@15.

Lancaster, Pa., June 10.—Receipts, 1,215 head, against 663 last Monday; market dull; prices a shade lower; good to prime fat steers, $14.10@15.65; medium to good steers, $13.50@14.50; common to medium steers, $11.25@12.85; good to prime fat bulls, $11.25@13; medium to good bulls, $11.15@12.40; common to medium bulls, $9.80@10.80; good to prime fat cows, $9.15 @10.40; medium to good cows, $8.40@9; common to medium cows, $7.15@8; medium to good bologna bulls, $5.40@6.15; common grade bologna bulls, $5.15@6; best grade calves, 14@15c per lb.; plain grade calves, 10@12c per lb.

Hogs.—Receipts, 169 head; market draggy; prices lower; best grades, $17@17.50; roughs, $14.75@15.75.

NEW YORK HAY AND GRAIN

New York City, June 10, 1918.

Feed.—The usual Saturday market was featured with no change either in regard to prices or underlying conditions. The demand for some time now has been flat, but this is not unusual for this season of the year. Consumers seem to be confident of their position and are unwilling to enter the market, except when actual requirements make it necessary. There is a fair supply in transit and these deliveries will be taken on contract. New crop conditions are highly favorable, the Government report indicating a wheat yield of nearly 1,000,000,000 ushels, while oats and other cereals are also in big supply. The natural tendency on the part of consumers is to hold off and wait for new crop offerings, for in view of these reports no shortage of feed such as occurred last season is possible. Quotations (prompt Western shipment): Rye middlings, $53; oat feed, $18 per ton; barley feed, $43; linseed meal, per ton, $50; corn feed meal, $51 per ton.

Hay and Straw.—Market is easy thruout. Offerings at all harbor points are very light but demand is exceedingly dull and the situation has turned in buyers' favor even on top qualities of timothy hay; our outside quotations at this writing are quite extreme. Hardly any clover or mixed hay available, but there is practically no call for it. Rye straw about steady, values varying somewhat from day to day according to the quantity available.

Hay.—No. 1, prime, $28@31; No. 2, $24 @27; fancy clover mixed, $25@27.

Straw.—No. 1 rye, $16@17.

Corn.—No. 3, $1.63¼.

Oats.—No. 2, white, 81½@82.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., June 10, 1918.

Baled Hay and Straw.—Receipts, 108 tons of hay. Hay of desirable quality was well cleaned up and ruled firm. Straw was in small supply, but there was little trading and prices favored buyers.

Timothy hay, according to location—No. 1 large bales, $30; No. 1, small bales, $30; No. 2, $27@28; No. 3, $22@24; sample, $15@18; no grade, $10@15; clover-mixed hay, light mixed, $27@28; No. 1 do., $25.50@26.50; No. 2, do., $18@20.

Straw.—No. 1 straight rye, $19@19.50; No. 2 do., $18@18.50; No. 1 tangled rye, $17@17.50; No. 2 do., $16@16.50; No. 1 wheat straw, $17; No. 2 do., $16; No. 1 oat straw, $17; No. 2 do., $16.

Loose Hay and Straw.—Average price prime timothy, $1.45@1.55 per 100 lbs.; mixed, $1.35@1.45 per 100 lbs.; straw, 85@95c per 100 lbs.

Corn.—No. 2 yellow, $1.60.

Oats.—No. 2 white, 82@82½c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., June 10, 1918.

Butter.—The market was nominally unchanged, as the Produce Exchange was closeced on Saturday and there was little wholeale trading.

Western, fresh, solid-packed creamery, extras, 44c; high-scoring goods, 45@46c; extra firsts, 43c; firsts, 41@42c; seconds, 38 @40c; sweet creamery, extra, 45c; under grades, 40@44c; nearby prints, extra, 48c; jobbing sales of fancy brands, 49@51c; fair to good, 41@46c; garlicky, 35@38c.

Receipts, as compiled by the Bureau of Markets, 3,483 tubs of butter and 7,126 cases of eggs.

NEW YORK MILK MARKET

New York City, N. Y., June 10, 1918.

The drop in temperature has been followed by an unsatisfactory manufacturing condition. The surplus is large. Rates are not satisfactory. The rates to the producer of Grade B in the first district are $1.80 a hundred for 3 percent milk; $2.04, or approximately 4.33 cents a quart for 3.6 percent; and $2.20 for 4 percent.

Receipts of milk and cream in 40-quart cans for the week ending June 6 were as follows:

Railroad	Milk	Cream
Erie	41,290	3,790
Susquehanna	5,975	33
West Shore	11,787	1,325
Lackawanna	70,965	2,572
N. Y. Central (long haul)	133,761	4,346
Ontario	46,618	5,968
Lehigh Valley	53,579	3,244
New Haven	5,821	73
Pennsylvania	11,790	320
Other sources	8,170	275
Totals	389,950	21,846
Same week last year	399,753	23,720

CHEESE MARKETS

At the June 10 session of the Utica Dairy Board of Trade cheese offerings were 2,900 boxes and the price was 22¼ cents. Creamery butter sold at 42½ cents. Last week's cheese price was 21⅝ cents. At Watertown June 8. cheese sales amounted to 9,000 boxes at 22¼ cents.

Household

TIMELY SUGGESTIONS FOR CANNING

This is the year of all years for the thrifty housewife to see that her family is well supplied with home canned vegetables and fruits, and now is the time to make preparations for this work. A good supply of canned goods will go a long way toward reducing the consumption of meats, wheat and other foods, which can then be released for the nation's military needs at this critical time. Furthermore, the housewife who has a variety of canned vegetables and fruits on her shelves has an easy answer to that universal question, "What shall I have for dinner today?" All surplus vegetables and fruits from the farm garden can be easily and successfully canned by the housewife who will make up her mind to follow a good set of canning rules exactly. First of all, to can successfully, it is essential to get together the simple equipment. Following is a list of suggestions:

Gather together into one place every available jar which can be made air-tight. Count the jars, and if more will be needed, purchase the number required at once. This will assure you of your supply and avoid buying when the demand for jars is greatest. Many women were compelled last year to get along without a full supply because they waited until they actually needed them, and then found the supply which the merchant had for the season exhausted. This was especially true in small communities. Buying early gives the merchant an opportunity to order more jars if there is a demand for them.

Buy from a local dealer or some reliable rubber company enough good jar rings for each jar. Poor rubbers cause considerable loss in canning. The long cooking required to can vegetables causes a poor rubber to disintegrate, and then it lets air into the cans. Test a rubber before buying by gently stretching it between the thumb and forefinger of both hands. When it is released, it should spring back to its original size. If it will not stretch, or if it breaks or shows cracks when stretched it should not be used. Never use rubbers which have been used before unless they show all the elasticity of good rings; and even these would better be used only for pickle jars, etc., which do not necessarily have to be air-tight.

Place tops of all screw-top jars in a large vessel and boil for three hours to kill any bacteria which may have gathered back of the plate in the lid. This also removes pulp of food canned the previous year which has worked its way back of the plate of the lid and has spoiled. When food is removed from jars the lids are usually exposed to dust, and thus bacteria get back of the plates during the period when the jars are not in use. These bacteria are usually very tenacious of life and require long and high heat to kill them.

Have This Equipment Ready

One large vessel like a wash boiler, a lard can or a new garbage pail, in which to sterilize the jars of vegetables and fruits. A preserving kettle or any vessel large enough to hold three to five pints or quarts will answer for canning a few cans at a time.

Have a rack to fit the bottom of the vessel used in sterilizing. A wooden rack is sometimes used, but it requires a great deal of care, because it absorbs odors easily. A cheap and very satisfactory rack can be cut by every housewife from galvanized cellar-window screening, having either one-fourth inch or one-half inch mesh. This rack lies flat on the bottom of the vessel, but allows enough space for circulation of boiling water beneath the cans. This type of rack has been used by thousands of women during the past few years with great success. The only care which it needs is to be kept from rusting when not in use.

Provide several large vessels for blanching vegetables and fruits. Provide several sharp paring knives and a wooden spoon; also a board on which to cut vegetables. Provide at least three blanching cloths—cheesecloth squares a yard wide will be very satisfactory. A square cloth can be used more easily than a bag. Also have heavy cloths for handling jars.—Mrs. W. L. Kellogg, Center Co., Pa.

(Editor's Note.—We like also a good pair of can tongs that will grip the cans securely under the shoulders, so that we can lower them carefully into hot water, and lift them out as soon as the proper cooking period has ended.)

MARKETING HOME CANNED GOODS

Secure orders for canned products before putting them up, advises the Bureau of Markets, U. S. Department of Agriculture. It also advises housewives and club members to study their markets at the beginning of the season and pack according to the local demands for different products.

Small lots of non-standardized products are difficult to sell except among local buyers and are not purchased by the army, navy, commercial dealers or any department of the Government. Many appeals to the Department of Agriculture to find a market for home-canned goods were made the past year, and often the canners believed that the Government was in the market for such goods. Subject to whatever regulations may be made by the Federal Government, the marketing of food products will proceed in the usual manner, and the Bureau of Markets points out that proper grading, standardizing, and careful preparation for market are especially necessary in handling canned goods, jams, jellies and preserves.

While the Bureau of Markets is giving aid to producers on marketing problems, it says that it is difficult to place producers of small quantities of different kinds of products in touch with buyers, and urges home and club canners to learn the marketing end of their business just the same as producers in other lines of industry. Information on marketing canning club products may be found in Markets Document 5, published by the U. S. Department of Agriculture, Washington, D. C.

NEW USES FOR CHERRIES

If it is desired to make some cherries into butter, an improvement over the old method is to put the pitted, uncooked cherries thru the food grinder, using the coarse knife in the operation. This makes the texture of the finished product smooth and fine. To each cup of fruit pulp add a cup of sugar, and cook until of the proper consistency.

It has been discovered that sweet cherries make good raisins when dried thus: Prepare a rich syrup and pour hot over the pitted, uncooked cherries. Lift the fruit out to drain thoroly, then re-heat that syrup in which again immerse the fruit, then lift and drain as before. Repeat the process until every cherry is thoroly candied, after which dry on plates in the oven. In sections of the country where the cherry crop never fails, some house-keepers annually get their supply of raisins off their cherry trees and never need to buy a commercial raisin. After sampling both, one does not wonder at their preference.—Glentworth Rubens.

Aunt Peggy's Talks

Look to Yourself

Any kind of routine work has a tendency to make one narrow, and as we become narrow we are likely to develop a scolding, fault-finding habit. Some people think a woman's life on the farm is necessarily a hard one, but we must not forget that our lives are what we make them, regardless of the place we live. Hard work of itself does not make our lot hard. A woman who continually grumbles and complains on the farm would probably do the same anywhere, because we can never find a place entirely to our liking. One of our jobs is to fit ourselves to our work and that is done by adjusting our minds to our circumstances. It is well to turn the X-ray on ourselves some time and see whether the trouble is there or in our surroundings. We can usually adjust either if we honestly try.

There is hard work on the farm and lots of it. So there is every place. But fatigue is more frequently fatigue of mind than of body. If the mind dwells upon nothing but the daily work—work which becomes automatic and requires no exercise of our mental faculties—it stagnates and becomes disgusting. The remedy lies in having some other interest in life, altho it may be related to it. Do we have an appreciation of what is about us? Are we so acquainted with the things of nature on every hand that we unconsciously exclaim when we look up, "Oh, the joy of living". How many farm women can name the different kinds of trees they can see from their home; or name the wild flowers that grow by the wayside? How many know the different birds which annually nest nearby? Can you take a bird book, a flower book or a tree book and help your child in recognizing them?

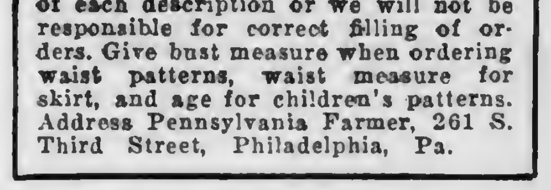
Do you fully realize the many other duties of a farm home other than feeding and clothing the family and making them physically comfortable? A hired woman could do all these things and they are the things which tend to narrow one if our attention is not directed to the higher, spiritual side of life. It is harmful as well as foolish to sit and dream of unattainable and perhaps undesirable things. There is enough close at hand in everyone's life to claim her earnest attention and enable her to forget the little worries and disappointments. By taking advantage of our opportunities we fill our minds with better things and thus are enabled to live them as God intended we should live them.

Then, there is the neighborhood. Very few women make full use of their neighborhoods for mutual betterment. No woman can do the best for herself or her family unless she takes an interest in the activities of the neighborhood. It was probably a crabbed man who first said, "A woman's place is at home." That's one of her places, but not the only one. Of course, the highest enjoyment should be experienced within the home with one's own family. The family meals, the evening hours may be made happy times, provided they are not taken as opportunities for nagging and fault-finding. Of which kind do you think John Howard Payne was thinking when he wrote "Home Sweet Home"?

DANDELION TONIC

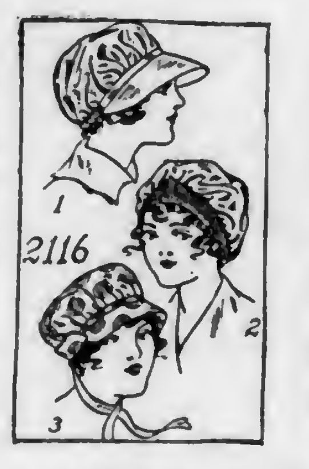
Dandelion tonic, made from the flowers of dandelion, is a kidney and blood tonic. The tonic will increase in efficiency with age. Every year I make a few gallons of it. Select the flowers when in full bloom. Take 4 quarts of flowers and wash them carefully. Put in a large bowl and cover with 4 quarts of boiling water and let stand 24 hours. Strain and add the juice and rind of 3 lemons and 3 oranges, 4 pounds granulated sugar and ½ yeast cake, dissolved in water. Permit this mixture to stand one week, then strain thru cheese cloth and store to age. A wineglass taken before retiring has a beneficial effect upon the kidneys and induces sleep.—A. L. Roat.

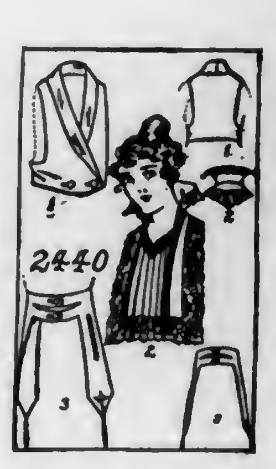
PENNSYLVANIA FARMER PATTERNS



Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

2116.—Set of Serviceable Caps.—Nice for silk, satin, poplin, cravenette and other rubberized cloth. Ideal for motoring and traveling. Pattern includes the three styles portrayed, in 2 sizes: Medium and large. No. 1 will require 1 yard, No. 2 will require ⅞ yard, No. 3 will require ⅞ yard of 27-inch material for the medium size. Price, 10 cents.





2440.—Smart Dress Decorations.—A smart vest or "waist coat" for wear under tailored suit, a pretty plastron collar, and a stylish girdle. For the vest satin, linen or silk are attractive; for the girdle, the same materials may be used. The collar may be of organdy, lawn, batiste, or crepe, with lace or embroidery and ribbon for trimming. Pattern is in 3 sizes: Small, medium and large. No. 1 will require 1⅜ yards of 36-inch material; No. 2, 1 yard of 36-inch material; No. 3, 1⅞ yards of 22-inch material for a medium size. Price, 10 cents.

The Master Mechanic's Story

By Frank H. Spearman

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DELAROO

"You tell it. I can't tell it," growled Neighbor.

"Oh, no. No. That's your story, "I ain't no story-teller—"

"Just an able-jawed liar," suggested Callahan thru a benevolent bluish haze.

"Delaroo's story wasn't any lie, tho," muttered Neighbor. "But a fellow would think it was to hear it; now he would, for a fact, wouldn't he?"

I

If you want him, quick and short, it would be: whiskers, secret societies, statistics and plug tobacco—the latter mostly worked up. That was Maje Sampson.

Bluntly, a wind-bag; two hundred and seventy pounds of atmosphere. Up on benevolent fraternities, up on politics, up on the money question, up on everything. The Seven Financial Conspiracies engaged Maje Sampson's attention pretty continually, and had for him a practical application; there were never less than seven conspiracies afoot in Medicine Bend to make Maje Sampson pay up.

The children—they were brickbats. Tow-headed, putty-faced, youngsters of all sizes and conditions. About Maje Sampson's children there was but one distinguishing characteristic, they were all boys, nothing but boys, and they spread all over town. Was there a baby run over? It was Maje Sampson's. Was there a child lost? Maje Sampson's. Was there a violently large-headed, coarse-featured, hang-dog, clattering sort of a chap anywhere around? In the street, station, roundhouse, yards, stock pens? It was a brickbat, sure, one of Maje Sampson's brickbat boys.

The Sampsons were at the end of the street, and the end of the street was up the mountain. Maje Sampson's lot, "raired," as Neighbor put it—stood on its hind legs. His house had a startling tumble-over aspect as you approached it. The back end of his lot ran up into the sheer, but he marked the line sharply by a kind of a horizontal fence, because the cliff just above belonged to the corporation that owned everything else on earth around Medicine Bend.

Maje Sampson did not propose to let any grasping corporation encroach on his lines, so he built, and added to from time to time, a cluster of things on the hind end of his lot—an eruption of small buildings like pimples on a boy's nose, running down in size from the barn to the last drygoods box the boys had heaved up the slope for a dog house. To add to the variety, some one of the structures was always getting away in the wind, and if anything smaller than a hotel was seen careening across-lots in a Medicine Bend breeze it was spotted without further investigation as Maje Sampson's. When the gale abated, Joe McBracken, who conducted the local dray line, was pretty sure to be seen with a henhouse or a woodshed, or something likewise, loaded on his trucks for Maje Sampson's. Once the whole lean-to of the house blew off, but Joe McBracken stood ready for any emergency. He met the maverick addition at the foot of the grade, loaded it on his house-moving truck, hitched on four bronchos, crawled inside the structure, and, getting the lines thru the front window, drove up Main street before the wind had gone down. Joe was photographed in the act, and afterward used the exhibit in getting judgment against Maje Sampson for his bill.

Now a man like Maje wouldn't be likely to have very much of a run nor very much of an engine. He had the 264; an old pop bottle with a stack like a tepee turned upside down. For a run he had always trains Number Twenty-nine and Thirty, the local freights, with an accommodation coach east of Anderson. There were times of stress frequently on the West End, times when everybody ran first in first out; except Maje Sampson; he always ran Twenty-nine and Thirty west to Silver River and back. A pettifogging, cheap, jerk-water run with no rights to speak of, not even against respectable hand-cars. The only things Maje Sampson did not have to dodge were tramps, blanket Indians and telegraph poles; everything else side-tracked Twenty-nine and Thirty and Maje Sampson. Almost everybody on thru trains must at some time have seen Maje Sampson puffing on a siding as Moore or Mullen shot by on Number One or Number Two. Maje was so big and his cab so little that when he got his head thru the window you couldn't see very much of the cab for shoulders, and whiskers and things. From the cab window he looked like a fourteen-year-old boy springing out of a ten-year-old jacket. Three things only, made Maje tolerable. First, the number of benevolent orders he belonged to; second, Delaroo; third, Martle.

Maje Sampson was a joiner and a sitter up. He would join anything on the West End that had a ritual, a grip and a password, and he would sit up night after night with anybody that had a broken leg or a fever; and if nothing better offered, Maje, rather than go to bed, would tackle a man with the stomachache. This kind of took the cuss off; but he was that peculiar he would sit up all night with a sick man and next day make everybody sick talking the money question—at least everybody but Delaroo. If Delaroo was bored he never showed it. As long as Maje would talk Delaroo would listen. That single word was in fact the key to Delaroo; Delaroo was a listener; for that reason nobody knew much about him.

He wasn't a railroad man by birth, but by adoption. Delaroo came from the mountains; he was just a plain mountain man. Some said his father was a trapper; if, so, it explained everything—the quiet, the head bent inquiringly forward, the modest unobtrusiveness of a man deaf. Of a size and shape nothing remarkable Delaroo—but a greater listener, for tho he looked like a deaf man he heard like a despatcher, and saw marvellously from out the end of his silent eyes. Delaroo for all the world was a trapper.

(To be continued)

Two Pairs of Shoes

(Concluded from last week)

I got hold when she jibed the second time. She stood up on two legs, the boom come over with a slat that pretty nigh took the mast with it, and the whole shebang whirled around as if it had forgot something. I have a foggy kind of remembrance of locking my mitten clamps fast onto that rail while the rest of me streamed out in the air like a burgee. Next thing I knew we was scooting back towards Dillaway's, with the sail catching every ounce that was blowing. Jonadab was braced across the tiller, and there, behind us, was the Honorable Philip Catesby-Stuart, flat on his back, with his blanket legs looking like a pair of compasses, and skimming in whirligigs over the slick ice towards Albany. He hadn't had nothing to hold onto, you understand. Well, if I hadn't seen it, I wouldn't have b'lieved that a human being could spin so long or travel so fast on his back. His legs made a kind of smoky circle in the air over him, and he'd got such a start I thought he'd never stop a-going. He come to a place where some snow had melted in the sun and there was a pond, as you might say, on the ice, and he went thru that, heaving spray like one of them circular lawn sprinklers the summer folks have. He'd have been as pretty as a fountain, if we'd had time to stop and look at him.

"For the land sakes, heave to!" I yelled, soon's I could get my breath. "You've spilled the skipper!"

"Skipper be durned!" howls Jonadab, squeezing the tiller and keeping on the course, "we'll come back for him by and by. Its our business to win this race."

And, by ginger! we did win it. The way Jonadab coaxed that cocked hat on runners over the ice was pretty —yes, sir, pretty! He nipped her close enough to the wind'ard, and he took advantage of every single chance. He always could sail; I'll say that for him. We walked up on Archie like he'd set down to rest, and passed him afore he was within a half mile of home. We run up abreast of Dillaway's, putting on all the fancy frills of a liner coming into port, and there was Ebenezer and a whole crowd of wedding company down by the landing.

"Gosh!' says Jonadab, tugging at his whiskers; "'Twas Cape Cod against New York that time, and you can't beat the Cape when it comes to getting over water, not even if the water's froze. Hey, Barzilla?"

Ebenezer came hopping over the ice towards us. He looked some surprised.

"Where's Phil?" he says.

Now, I'd clean forgot Phil and I guess Jonadab had, by the way he colored up.

"Phil?" says he, "Phil? Oh, yes! We left him up the road a piece. Maybe we'd better go after him now."

But old Dillaway had something to say.

"Cap'n," he says, looking around to make sure none of the comp'ny was follering him out to the ice-boat. "I've wanted to speak to you afore, but I haven't had the chance. You mustn't b'lieve too much of what Mr. Catesby-Stuart says, nor you mustn't always do just what he suggests. You see," he says, "he's a dreadful practical joker."

"Yes," says Jonadab, beginning to look sick. I didn't say nothing, but I guess I looked the same way.

"Yes," said Ebenezer, kind of uneasy like; "Now, in that matter of Mrs. Granby. I s'pose Phil put you up to asking her about her son's laundry. Yes? Well, I thought so. You see, the fact is, her boy is a broker down in Wall Street, and he's been caught making some of what they call 'wash sales' of stock. Its against the rules of the Exchange to do that, and the papers have been full of the row. You can see," says Dillaway, "how the laundry question kind of stirred the old lady up. But, Lord! it must have been funny," and he commenced to grin.

I looked at Jonadab, and he looked at me. I thought of Marm Granby, and her being "dying to know us," and I thought of the lies about the "hod of change" and all the rest, and I give you my word I didn't grin, not enough to show my wisdom teeth anyhow. A crack in the ice an inch wide would have held me, with room to spare; I know that.

"Hum!" grunts Jonadab, kind of dry and bitter, as if he'd been taking wormwood tea; "I see. He's been having a good time and making durn fools out of us."

"Well," says Ebenezer, "not exactly that, p'raps, but——"

And then along comes Archie and his crowd in the other ice-boat.

"Hi!" he yells. "Who sailed that boat of yours? He knew his business all right. I never saw anything better. Phil—why, where is Phil?"

I answered him. "Phil got out when we jibed," I says.

"Was that Phil?" he hollers, and then the three of 'em just roared.

"Oh, by Jove, you know!" says Archie, "that's the funniest thing I ever saw. And on Phil, too! He'll never hear the last of it at the club —hey, boys?" And then they just bellered and laughed again.

When they'd gone, Jonadab turned to Ebenezer and he says: "That taking us out on this boat was another case of having fun with the country men. Hey?"

"I guess so," says Dillaway. "I b'lieve he told one of the guests that he was going to put Cape Cod on ice this morning."

I looked away up the river where a little black speck was just getting to shore. And I thought of how chilly the wind was out there, and how that ice-water must have felt, and what a long ways 'twas from home. And then I smiled, slow and wide; there was a barge load of joy in every half inch of that smile.

"Its a cold day when Phil loses a chance for a joke," says Ebenezer.

"'Tain't exactly what you'd call summery just now," I says. And we hauled down sail, run the ice-boat up to the wharf, and went up to our room to pack our extension cases for the next train.

"You see," says Jonadab, putting in his other shirt, "its easy enough to get the best of Cape folks on wash sales and lying, but when it comes to boats that's a different pair of shoes."

"I guess Phil'll agree with you," I says.

Another good story of Jonadab and Barzilla will be published in an early issue.—The Editors.

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SPECIAL PRICES on chicks S. C. W. Leghorn $10; Barred Rocks $12.50; Reds $13 per 100. Live arrival and quality guaranteed. Shipment via Parcel Post.
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Baby Chicks For Sale, Buff Leghorn, White Wyandottes, Barred Rocks and Mixed. JOHN WARD, Buckeye Hatchery, Millerstown, Perry Co., Pa.

Eggs for hatching. White Turkeys, Moscovy, Mallard, Pekin Duck, Rocks, Wyandottes, Leghorns. Free Circular. B. F. Kahler, Hughesville, Pa.

White Leghorn Pullets and Yearling Hens
$1.25 each. FOREST FARM, Rockaway, N. J.

Barron White Leghorn Eggs. Selected breeders. Free range. Males dams 272 Egg record. $1 per 15, $6 per 100 prepaid. Wm. D. Seidel Strawberry Ridge, Pa.

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Indian Runner Ducks Fawn and White. Eggs 12 for $1.00. Breeders $1.50 each.
H. E. DEITZ, R. F. D. 6, Mechanicsburg, Pa.

WE BUY OR SELL ANYTHING ALIVE
Write what you have and price.
Philadelphia Pet Shop, 22 N. 9th St., Phila., Pa.

PLEASE cancel my ad in Pennsylvania Farmer. I have sold 27 bred sows thru your paper in 3 insertions. Please give me credit for balance due and I will be with you in the near future.
JAY MILUM,
Sycamore, Ohio. Jan. 16—1918.

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Nasal Gleat.—Diseased Tooth.—I have a mare that is affected with gleat. The whole discharge of mucus seems to come from one nostril, and it has a very offensive odor. I would like to know how to treat this case and know if the mare can be cured. E. G., Norristown, Pa.—The writer is inclined to believe that perhaps the fourth upper grinder tooth is diseased; this is doubtless causing the offensive nasal discharge. You had better secure the services of a competent veterinarian and have the tooth extracted. If the tooth has decayed and dropped out, then perhaps she will have to be trephined thru bone of face in order to irrigate nasal cavity and effect a cure. This is a case that requires the services of a veterinarian.

Enlarged Glands.—The glands of my five-year-old road horse are somewhat swollen, but not painful. Some two months ago I noticed a slight swelling in throat, but looked for bunch to go away; however, I can see that the bunch is gradually growing larger. What can be done to reduce the bunch? A. H. S., Meadville, Pa.—Give him one dram potassium iodide in either feed or water, three times a day and swelling will gradually reduce. If you are anxious to reduce bunch quickly, paint gland with tincture iodine, 3 times a week, but of course give the medicine as well.

Lumpy Jaw.—We have a two-year-old heifer with movable bunch on lower jaw which my neighbor calls lump jaw. If he is right, what can be done for her? A. F. D., Pikes Creek, Pa.—A small bunch such as you mention can easily be cut out and the wound will soon heal. If not cut out, apply one part red iodide mercury and four parts lard, every ten days; also give her one dram potassium iodide in feed or drinking water, twice a day for 15 days and a cure will perhaps be effected.

Wart on Neck.—One of my yearling Jersey calves has a wart on side of neck. Home remedies fail to take it off. D. K. B., Petersburg, Pa.—Such a wart as you speak of should be cut out. Then apply equal parts oxide zinc and boric acid, twice a day to heal the wound. If you prefer to apply medicine that will remove it, mix one ounce salicylic acid in two ounces of alcohol and apply this solution twice a week.

Nail Puncture.—One of my work horses stepped on a nail which penetrated thru sole of foot. This horse is quite lame. I might say the foot has been poulticed almost daily since he was injured. He is not very lame, but pus comes from wound. H. M., New Salem, Pa.—Dissolve one dram iodine chrystals in two ounces of sulphuric ether and apply to wound twice daily. Discontinue poulticing foot, but be sure and keep the foot clean.

Sore Shoulders.—Two of our farm horses are bothered with sore shoulders and home remedies seem to fail to heal them. We believe their collars fit properly, but the skin keeps raw. M. L. P., Bridgeville, Pa.—Mix one dram methylene blue in two ounces lanolin (wool fat) and apply to sores, twice a day, or apply equal parts oxide zinc and boric acid, three times a day.

Common White Grubs.—Farmers' Bulletin 940, of the U. S. Department of Agriculture, discusses the life history, habits and methods of control of the common white grub. Full directions are given for combatting these pests in field crops, garden and lawn. The bulletin is free upon request from the above department, Washington, D. C.

HILLCROFT FARMS DISPERSION SALE
George R. Hill, Owner, Towanda, Pa., July 1-2, 1918

150 Holsteins headed by Towanda Spring Farm Plum Copia, the records of whose dam and sire's dam average 38.72 lb. butter in 7 days.

50 Daughters of the famous Judge Hengerveld De Kol. They are all from A. R. O. dams and many of them have records themselves, They range as high as 34.21 at 4 years.

Special Notice
Hillcroft Farms which is one of the most fertile and best located farms in Bradford County will also be sold at auction at the time of the Cattle Sale.
More details next week.

The above have been bred to Towanda Spring Farm Plum Copia. The coming generation will have inherited extremely large production from both sides of their pedigrees.

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HAMPSHIRES Most any age, free circular just out. Also registered Guernsey Bulls, from tuberculous free herd.
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O. I. C. SWINE Big Type. Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants.
CRANDELL & SON. Box 53, Cass City. Mich.

Greystone Berkshires
Spring pigs either sex, pairs and trios not akin from large mature sows of best breeding. Twenty-five sows in our herd. Write for circular giving further description and prices. It's free.
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Reg. P. Chinas, Berkshires; C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry.
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All ages. Can furnish pair or trio. Not akin.
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Reg. Berkshires by Beauty's Masterpiece 3rd. Spring pigs, either sex, $10 each. R. S. GOOD. PEACH BOTTOM, PA.

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Large Berkshire Swine Registered High Grade. Prices reasonable. Write HOME FARM. CENTER VALLEY, PA.

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For Sale Choice Reg. Chester White Spring pigs, also an aged boar and sow.
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Reg. Chester Whites big type. Guernsey Calves. Write your wants. MOSES EABY, Landenberg, Pa.

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Sons of
SIR INKA PRILLY SEGIS 80912
who is a son of King Segis out of a 30-lb. granddaughter of the noted foundation cow Prilly. We have 70 of his young daughters born at Winterthur, the first of which will freshen in 1918.

No. 24—Born January 30, 1918. He is nearly all white with just a few black spots around head and shoulders. He has a good top line and barrel and is a beautiful individual. Dam: Woodcrest Aaggie Walker 254011 recently completed a 27.07-lb. (7 day) and 106.32-lb. (30 day) record at the age of 3 1-2 years. She will increase this record at her next freshening. She is now on yearly test. Her sire is out of a 30-lb. cow.

No. 4—Born November 24, 1917. He is a large, husky fellow with a back that carries straight to the base of his tail. He has a long, deep and well-rounded barrel. His dams average:

7 nearest dams	(7 days)	26.59
9 " "	"	31.76
14 " "	"	27.62

His sire is a son of Sir Inka Prilly Segis and Emeretta Korndyke De Kol (34.36-lbs.), who has twice made better than 32-lbs. and has produced over 100 lb. milk in a day. His dam is Betty Burke Pontiac 254206 (21.36-lb. three year old). Her dam is a 27-lb. cow.

We have other sons of Sir Inka Prilly Segis for sale. Full particulars including pedigree and photographs will be furnished on application to the

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in a recent test daughters of a purebred Holstein bull increased milk yield 94%; granddaughters 245% over scrub dams. Let us tell you about it.
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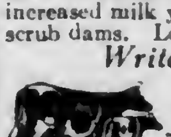

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7-8 Holstein calves, either sex, $5 to $20 each, express prepaid in lots of 5. 45 high grade 2-year-olds, close springers, $65 to $80 each, 40 yearlings not bred; 30 registered heifers ready to breed $125 each. 28 registered bulls. Registered and high grade cows at farmers' prices.
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"NO HORNS"
Naturally Polled Holstein-Friesian
bull calves, sired by a son of the World's Record senior 4 yr. old, 1294.7 lb. butter in 365 days, at $100 and up. Descriptive catalog for stamp.
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Holsteins we have been completely sold out for the last 8 months. Just now we have a few very nice registered bull calves sturdy and well marked. Our prices are always fair.
PLUMLYN FARMS FAIRVIEW VILLAGE, PENNA. (near Norristown)

Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees.
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Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd.
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Milking Shorthorns Bull calves bred from the best milking strains, for sale; also few heifers. C.M. Kennedy & Sons, Ulster, Pa.

Holstein Bulls from A. R. O. dams. Write your wants; they are priced to sell. M. E. Baseboar, Crystal Spring Stock Farm, Littlestown, Pa.

REG. Ayrshires. 5 cows, 5 yearling heifers, 5 heifer calves. Good breeding. Inquire
LENT BROS. WYSOX, PA.

Reg. Jerseys From some of the most noted blood in the world.
Fred G. W. RUNK, Woodlawn Farm, Allentown, Pa.

AYRSHIRE BULL CALVES Advance Registry ancestry. Priced to sell. They will improve your herd.
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For Sale Fine Reg. Guernsey heifers, Imp. & American bred. Some to freshen June. Some fine Imp. granddaughters of Gov. Chene; bull calves. J. S. Yoder, Wooster, O.

Registered Guernsey Bull Calves for sale. Two to six months of age. Very choice stock.
P. S. TRUMBOWER, Homestead Farm, Nazareth, Pa.

COOPER'S ANNUAL SALE

At the annual Linden Grove Jersey sale, at Coopersburg, Pa., May 30, ninety-six head of Jerseys were sold for a total of $60,555, or an average of $630.78 per head. While there was no sensational price paid for any one animal, the general average comes near being a record for young stock. Fifty-one head of cows sold for $40,175, or an average of $787.75. Thirty-two heifers brought $13,190, or an average of $412.19; and 12 bull calves were sold for $6,940, or an average of $579 per head.

RECORD GUERNSEY SALE

The combination sale closing the recent meeting of the American Guernsey Cattle Club at Chicago, May 15, made a new record in prices and general average. Sixty-seven Guernseys sold to breeders of 11 states for a total of $102,927, an average of $1,536.23—and $20,750 was donated by Guernsey breeders to the American Red Cross fund. The top price of the sale was $10,000 paid for Don Diavolo of Linda Vista 23565, a new record price for Guernsey breed. The highest price for a cow was $5,300 paid for Langwater Luxury 49484.

SIMPLE FLY PREVENTIVES

Any odor pleasing to man is offensive to the fly and vice versa, and will drive them away. Take five cents' worth of oil of lavender, mix it with the same quantity of water, put it in a common glass atomizer and spray it around the rooms where flies are. In the dining room spray it lavishly even on the table linen. The odor is very disagreeable to flies but refreshing to most people. Geranium, mignonette, heliotrope and white clover are offensive to flies. They especially dislike the odor of honeysuckle and hop blossoms. According to a French scientist flies have intense hatred for the color blue. Rooms decorated in blue will help to keep out the flies. Mix together one tablespoonful of cream, one of ground black pepper and one of brown sugar. This mixture is poisonous to flies. Put in a saucer, darken the room except one window and in that set the saucer. To clear the house of flies, burn pyrethrum powder. This stupefies the flies, but they must be swept up and burned.

Receips for Stables, Barns and Out-of-Doors.—Borax is especially valuable around farms and out of doors. One pound of borax to twelve bushels of manure will be found desirable as a poison without injuring its manurial qualities or farm stock. Scatter the borax over the manure and sprinkle with water. Lye, chloride of lime, or copperas (sulphate of iron) dissolved in water, crude carbolic acid, or any kind of disinfectant may be used in vaults.

AREA OF PASTURE LAND

Bulletin 626 of the U. S. Dept. of Agriculture says that of the total farm land at the time of the last census — 1910 — which comprised about 879,000,000 acres, somewhat more than one-third was in crops, one-third in pasture, and a little less than one-third in all other kinds of farm lands. Land in improved pasture represents nearly one-tenth of the total land in afrms, and is doubtless used for crops from one-half to three-fourths of the time, according to the crop rotation that is practiced. A large part of the pasture land is unimproved, about 99,000,000 acres being in "woodland pasture," and 108,000,000 acres "other unimproved pasture."

"Its a lot better for the whole of us to be eating American oats, or rice, or corn or barley, or Irish-American pertaties than to have the Kaiser feeding us German crow at the point of a sixteen-inch gun," says Mrs. O'Flaherty.

While labor is short farmers must fight shoulder to shoulder, neighbor by neighbor where the battle is thickest.

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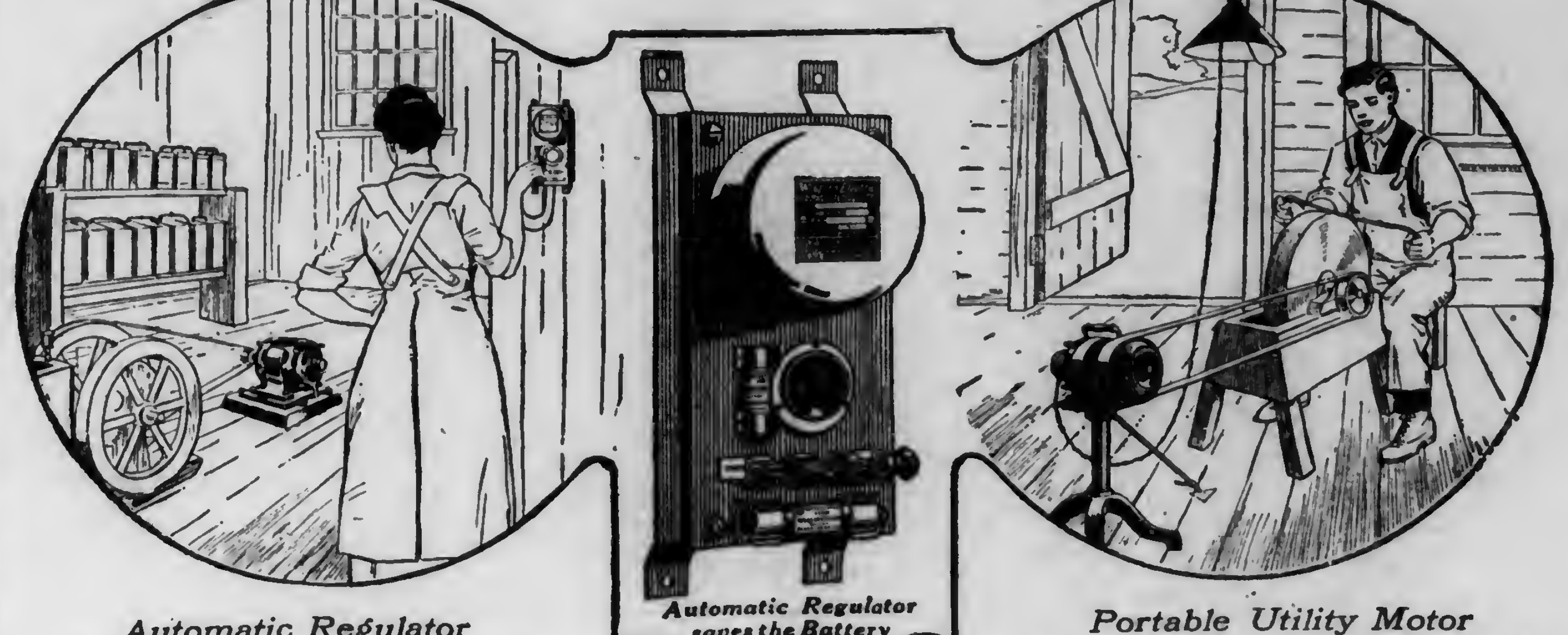
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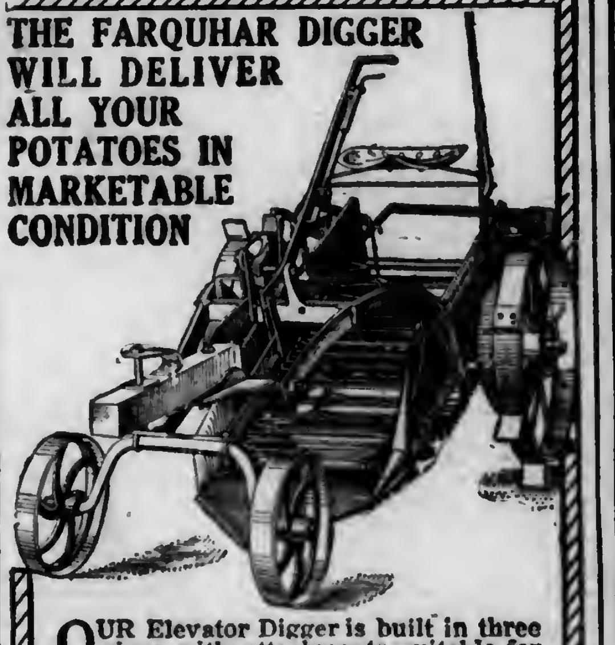

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Good Seed and Vegetable Growing

Taking Advantage of Variety Differences to Produce Better Seeds

By C. E. MYERS,
PENNA. STATE COLLEGE,

The correlation existing between good seed and the probability of producing a profitable crop is generally admitted, but whether or not the subject receives the consideration to which it is entitled, in the general practice of crop production, is another matter. Whether we recognize the fact or not, the mature crop is the result of the action of two forces,—environment and heredity. By environment we mean those factors which concern the plant with respect to its immediate surroundings as soil, with its available or unavailable plant food, air, moisture and culture, and, by heredity, we mean those things which have to do with the plant from the standpoint of its ancestry and the probability of transmitting their characters to its progeny.

In the past the securing of increased yields in our crops has been brought about chiefly by the modification of the environment of the plant, and much money, time and effort have been expended in the application of fertilizers, manures and cultural methods. Altho these are a necessary process in the successful growing of crops, the results obtained by them are not lasting and frequently the differences obtained by their use do not equal those due to heredity. On the other hand, improvement due to heredity is lasting and when once obtained acts without expense. Because of the intensified nature of the work of the vegetable gardener, the short season in which his crops must be matured, and the relatively high value of them as compared to the more general farm crops, the subject of good seeds is especially worthy of consideration.

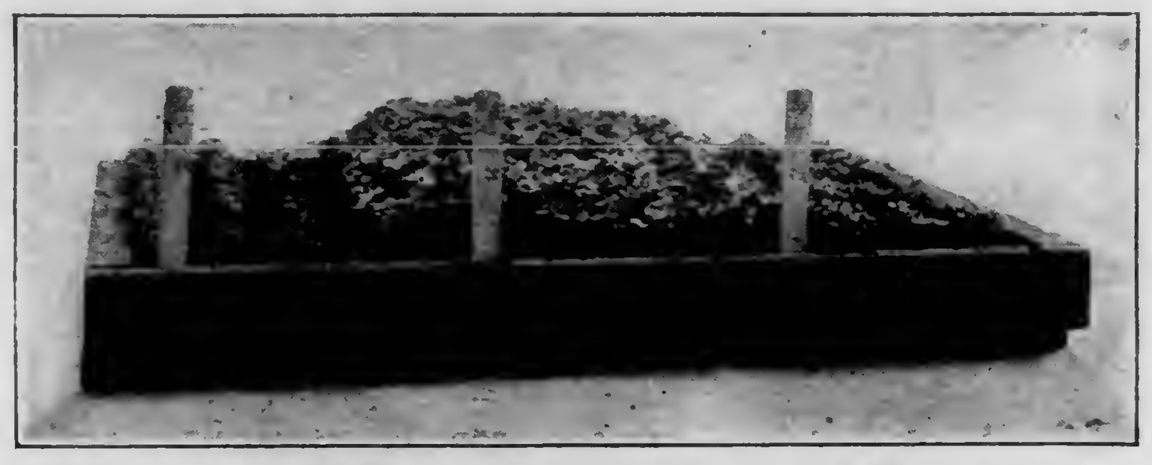


Figure 1.—Showing Variations in Germination of Different Lots of Cabbage Seed

Securing Seed

There are two ways in which good seeds may be secured. They may be obtained from others when practicable, or we may produce many of them ourselves. When practicable the securing from others, either seedsmen, specialists or neighbors, is perhaps accompanied with the least trouble. While it is true that some crops reach their highest degree of perfection in some localities and likewise produce seed most advantageously under these conditions, yet the limitations in this respect are not as great as are usually supposed. A more important factor which makes desirable the securing of seed from sources of this nature is that in growing seeds of some crops a definite knowledge is needed of some points which are not generally understood; thus where a person specializes on one, or at most a few crops, he should be able to produce a superior product.

When seeds are secured the first point to be determined concerning them is will they grow. Too frequently this is taken for granted, and as a result when the sowings have been made, and we are looking forward to having a definite number of seedlings for transplanting, we learn, when it is too late, that the vitality of the seed is poor and we do not get as many seedlings as we had expected. This trouble may be avoided by securing the seeds long enough in advance of the time of sowing as will permit of making a trial sowing or a germination test. A little time spent in this way will pay big returns and perhaps save serious disappointment.

Figure 1 shows the variation in vitality of seed of the same variety from different sources, purchased at the same time and sown under similar conditions.

Difference in Seed of Same Variety

The fact that differences exist between various lots of seed, altho of the same variety, has been definitely shown by experiments conducted with cabbage and tomatoes at the Pennsylvania State College for a number of years. These differences have to do with type, earliness and productiveness. The chart on next page shows these differences graphically. It will be noted that the difference in earliness varied from 0.22 to 3.93 tons per acre, while the total yield varied from 6.69 to 10.76 tons per acre. This difference in earliness of 3.71 tons and of productiveness of 3.83 tons would generally be looked upon as a desirable gain. Since these differences exist it is highly desirable that the seed be purchased a year in advance of the time it will be required for the general planting. Experiments have shown that in general the grade of seed secured from a particular source does not run uniform from year to year. Thus the stock may be desirable one year but less so the next, a fact which shows the importance of purchasing supplies a year in advance of the time they will be needed. A good plan is to purchase from several sources, make a small comparative trial, and the following year make the general planting on the basis of these results.

Home-Grown Seed

Some seeds may be produced at home with a high degree of success, regardless of the fact that the impression is more or less general that the work can be done only by specialists and in certain restricted localities. We need but reflect a moment to recall the time not many years ago when the majority of the seeds used by the vegetable gardener were produced by himself or by his neighbors, and the movement which has caused this to be delegated to special interests in due more largely to commercial than to biological reasons. However, we should not lose sight of the fact that the seedsman occupies a very important place in our present practice of agriculture, and has made possible the securing of new and improved varieties to an extent which was impossible before the seed in-

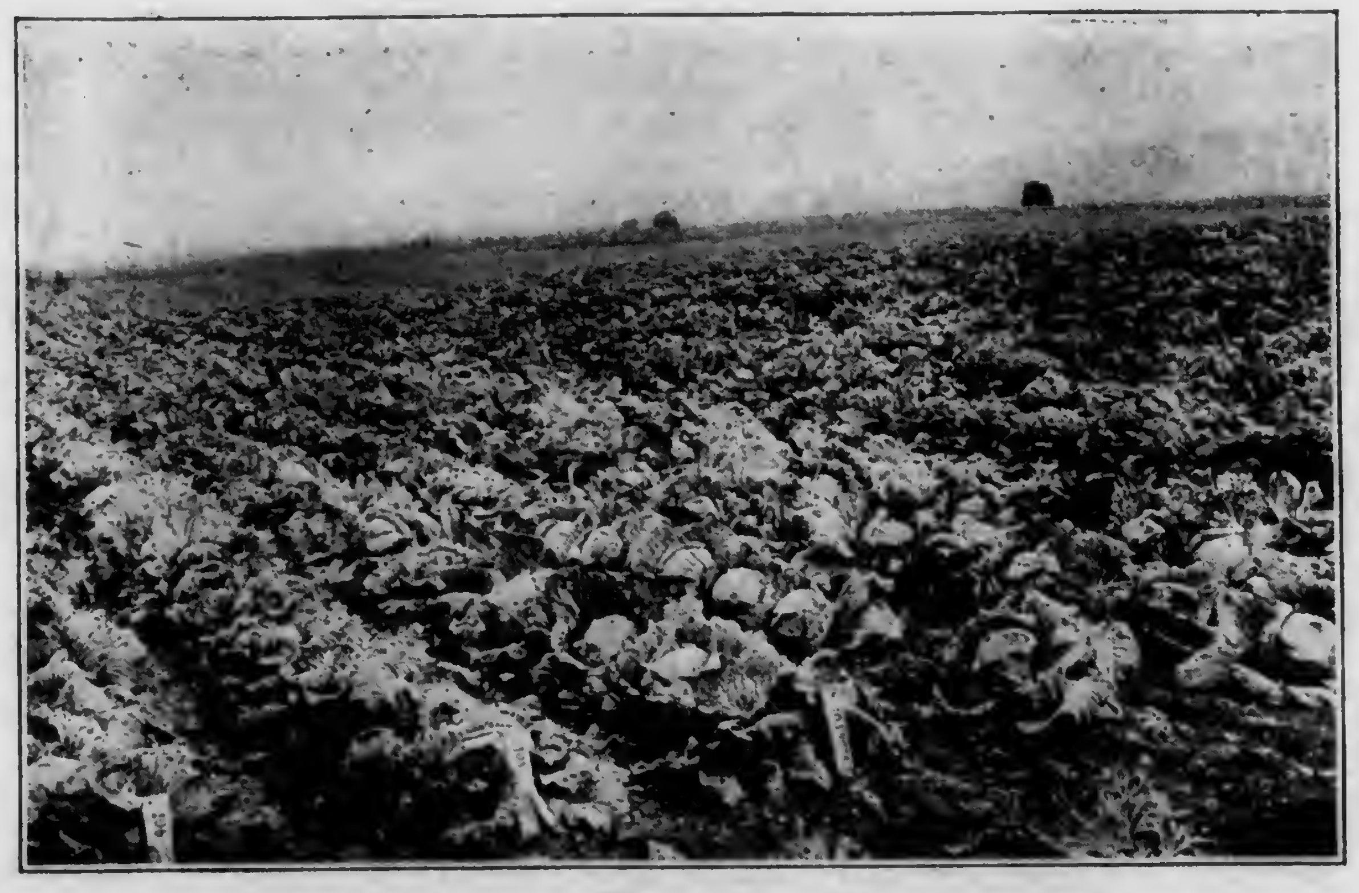


Figure 3.—Succession Cabbage From Home-Grown Seed

dustry reached its present proportions. Regardless of what may be said or written, the larger percentage of seed users will continue to depend on regularly established seed houses for their supplies.

In the business of vegetable growing, as in most other lines of activity, there are some persons who are not satisfied with the ordinary, but aim to secure and produce that which is superior to the average. They are not interested in securing that which is superior, merely because of the increased commercial value it may possess, which in itself is fully justified, but also because they secure real enjoyment in having accomplished something more than the ordinary, something which possesses real merit. It is this class of persons who will not be content to purchase a package of seeds simply because they conform in general to the requirements of the class or variety desired, but who aims to secure, and will be satisfied with none but the best. Persons of this type will find real pleasure in developing superior strains or varieties on their own farms, and they are the ones who will be mostly interested in applying the suggestions which follow.

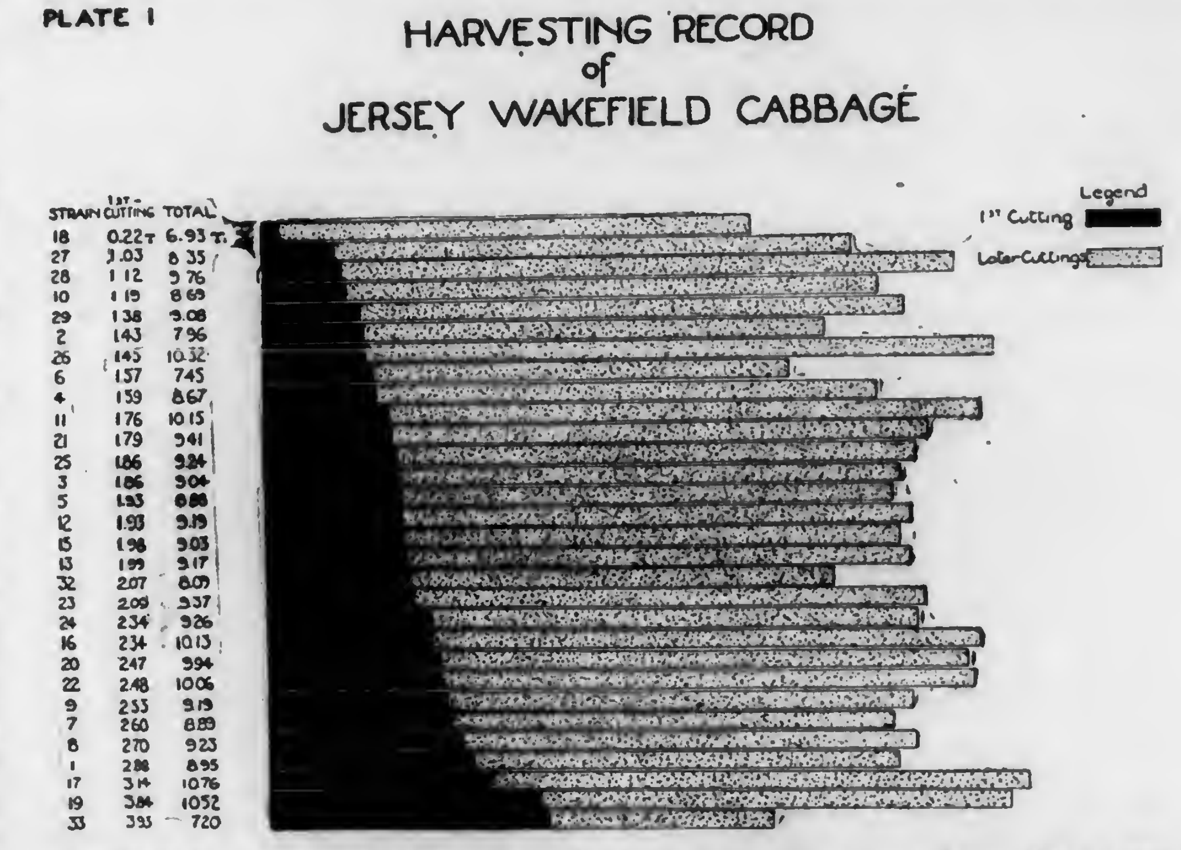
Seed Improvement

In improving any crop a point of primary consideration is that the plant is the unit of selection. For example, if we desire to develop an improved type of tomato, in selecting fruit from which to save seed we should consider the character of the plant from which the particular fruits were selected rather than the individual fruits, as the determining factor as to whether or not it should be used for propagation. In other words, it is important to select fruits from a plant which produces a large number of fruits closely approximating the ideal, rather than from a plant which may produce one or two specimens which may be considered ideal, but with the majority of fruits of an undesirable character and quality.

For the person contemplating the production of improved types the tomato offers a fertile field for development. The fact that the plant is close fertilized, and accidental crossing takes place infrequently, eliminates the trouble experienced when working with plants in which cross fertilization is the rule. Doubtless comparatively few growers of this crop have failed to observe in their fields plants which seemed to be superior from one or more standpoints. It is easy to select seed from these, marking the plant in some way to identify it and subsequently make a comparative test with a standard variety, to determine whether or not the supposed superiority is due to heredity or to environment. Not infrequently the superiority is due to the latter cause, but when the character in question is transmissible it may be considered as due to heredity.

Instances are known where progressive growers have made use of this method to improve their crops, and their friends having learned of their success secured seeds from them at a price considerably above that usually charged for seed. We are familiar with a party who some years ago began to select seed in this way for his own use, and who since has been so successful that he now produces a considerable amount for sale. For the best of this seed he receives a price several hundred percent in advance of the ordinary market price. That the seed is worth the increased price is shown by the fact that the supply does not equal the demand. Obviously, a different degree of care is exercised in the selection of the fruits from which the seed is obtained than is practiced where seed is produced in large quantities, where quantity rather than quality is the matter of first consideration. Likewise, the person who plants it and later harvests his crop, if in the one case he can call it a crop, realizes the difference, and it may represent a money difference of many times the cost of the seed.

PLATE I



Late Cabbage

Another kind of seed which the vegetable grower can raise with a considerable degree of satisfaction is late cabbage. There is a saying, more or less prevalent, to the effect that in order to produce good cabbage seed it should be grown near salt water where the denser atmosphere will have a favorable effect on the plant in making it produce thicker leaves. Whether or not this is true is unnecessary to discuss here, but the fact that seed of superior quality can be produced at least three hundred miles inland shows that the plant is not so sensitive in this respect as many have been led to believe. A much more important factor to be considered is the character of the plant reserved for seed production.

When cabbage seed is produced commercially, perhaps 95 percent of the plants grown are reserved for seed production, while where it is grown on a small scalle by the particular individual grower, the percentage is reversed. Of course at the present price of commercial seed we should not expect roguing to this extent, but the interested gardener can readily save the most superior heads of his crop for seed purposes.

The work of growing cabbage seed is not difficult, but because of the fact that cross fertilization predominates with this crop not more than one variety should be grown in a season, unless ample provision is made to eliminate crossing. In preparing the plants for seed production, they should be removed from the field when cold weather approaches. A large part of the outer leaves may be removed, and the plants stored in a protected place where they will be kept in a dormant condition but where they will not freeze severely. A good place to store them is in the woods. Rake away the leaves until the ground is reached and place the plants with heads one way and one layer deep. A second row of heads may be laid on the roots of the preceeding row. Cover with forest leaves sufficiently to prevent severe freezing, and throw on some brush to prevent the leaves being blown away.

The following spring, about the time for sowing oats, the plants may be removed and planted in the place where they will produce seed. At this time it is well to make a cross mark on the head with a knife in order that the seed stalk may push thru more readily. Care should be taken not to make the cut too deep or the seed stalk may be injured. If the plants are set about four feet apart, they will have ample space in which to develop. Cross fertilization will take place readily and a good set of seed will result. When the seed is ripe, which may be told by the somewhat yellowish color of the pods, the seed stalk should be cut off and hung in a cool, well-ventilated place to dry. Later the stalks may be threshed and the seed cleaned.

Because of the individuality of plants it is desirable to keep the seed from each plant separate, even tho we may know only the one parent, because of the fact of cross fertilization having taken place. Yet by making a comparative test of the seed from the various plants, important differences will doubtless be noted which will enable one to discard those lots which prove undesirable.

A number of growers pursuing the work in this manner have been well pleased with the results and because of it are able to produce superior crops. In case they have more seed than is required for their private use it finds a ready sale at a substantial increase in price above that of the commercial grades. But aside from any monetary consideration which may result because of the superior grade of seed, the fact that the person doing it has succeeded in accomplishing something worth while is ample remuneration.

Speeding Up Production

It is altogether true and logical that the winning of our armies is foremost in the minds of all true Americans and any sacrifices we must endure to gain this end should not be considered a hardship. But when the ration of wheat flour products is reduced to two ounces per man it seems altogether logical to frame some effective methods for increased production. I have observed with some degree of surprise the controversy in our chief legislative body relative to a fixed price for wheat.

At the present high cost of farm labor, plant food and farm machinery, any man of farm experience knows that the ruling price of wheat is not yet attracting labor and capital to any great extent. When you stop to think that the average yield is only about 16 bushels per acre, $2.25 per bushel is not commensurate to the increased cost of production. I have been farming for years but discontinued last April for various reasons. The rations now in vogue have long ago been predicted by agricultural authorities who know the exact situation far better than most members of our legislative bodies.

The slogan adopted by the U. S. Vegetable Growers' Association is, "Food will win the war—Produce it." The same theory may prove of some significance to wheat culture. Saving does not increase production. Speed up production is the cry on every side. What is the actual cost of growing a bushel of wheat? The best test I know is to grow it. The yield may be anywhere from 10 to 25 bushels per acre. Any yield above or below is not the ordinary. I have seen 45 bushels per acre in my native York County, Pa., but this is an exception. I have harvested wheat on my own farm that the Hessian fly had reduced to less than 10 bushels.

One or two thousand bushels at $2.15 per bushel looks good to the inexperienced agriculturist. The only way to get wise on this proposition is to put your own time, labor and capital into it. This game was tried out with cotton in the South, and goes to prove that the diversified interests of agriculture are the chief factors in maintaining farm equipment and expenses. A grain binder only a few years ago could be bought for $112, cash. Today they want about $145. A ton of pure ground bone was around $30. The last price I had was $58. The Government has furnished some nitrate at $75 per ton, and potash is so scarce that little is offered at any price. Add to these items a few good men at $2 per day and board, and then do your own reasoning.

It is an indisputable fact that our agricultural resources (the foundation of all wealth) have been and are still commandeered for the benefit of the consumer. Sixty-five percent of our entire population are vehemently averse to this undignified calling which George Washington classed as the most useful, most noble and most healthful employment of man.

We all know full well the cause of the existing conditions and our sacrifices are little compared with those facing the enemy for our safety and independence; but the singular idea of saving only is not the entire foundation for a continued supply. The source of production should be greatly encouraged. Just plain ordinary common sense will go a long way in accomplishing this. Dependable help is absolutely out of the question for the farmer. Allow him a fair price and he will adopt the tractor and labor-saving machinery and equip his farm for increased yield and acreage.

We have absolutely no certain assurance of an ample supply of cereals. Our exports are draining our supply while the production is decreasing. The farmer should have $2.50 for No. 1 wheat. If supply and demand would control the market he would be getting $3 and perhaps $3.50. The consumers seem to have the money to pay for what they want. Speed up production. Food will win the war—Produce it.—D. C. K.

Grow Sorghum

In these days of food scarcity, when conservation is the watchword, it would seem that we should produce as many of the things we eat and wear as possible; particularly those commodities which we suffer the greatest inconvenience in getting. We met strenuous conditions during and for several years after the Civil War, when we were almost entirely cut off from supplies from the South. There was a general scarcity of such commodities as sugar, coffee, molasses and the like. They were extremely costly, if at all obtainable. As substitutes for coffee we used scorched rye, bran or sweet potatoes cut into small pieces, dried and scorched. A little molasses was added to the potato pieces before they were scorched. We often used molasses for sweetening it. A low grade of dark brown sugar was almost the only kind available, and it was very expensive and not very inviting, either.

White sugar was a luxury in which very few families indulged. A great many farmers grew sorghum from which was made an excellent grade of syrup. They had it in plenty, stored in their cellars. In Chester County, Pa., it was the exception to find a farmer's cellar without a supply of good, wholesome sorghum molasses in it, either produced on his own farm or purchased from his neighbors. Now that hotels and restaurants are not allowed to place the sugar bowl on the table, and we are restricted to a very meager individual helping, is it not time that we were producing a portion of our sweets on the farm? We can do so and let the boys "over there" have the sugar. They need it and it is a good food for them.

Our soil and climate are well adapted to the sorghum plant. It will grow well where Indian corn will mature. A field properly prepared for corn is suitable for sorghum. It should be planted at about the same time as corn, or a few days later, in rows about 3½ to 4 feet apart so it can be conveniently thinned out to one stalk to about every 9 inches in the row. Sorghum does not make a very vigorous stand and should not be planted until all danger of frost is past. Like corn it makes a very rapid growth when nights are warm. Sorghum is inclined to throw out suckers near the root which, if not pulled or cut off, will detract from the size of the main stalk.

The sorghum should be harvested as late as is safe and still avoid frost. If killed by frost and allowed to stand a few days, the quality of the syrup will be injured both as to color and flavor. The harvesting process is first to pass along the row and stip off the blades from the stalks with the hands. Lay them in small piles or bunches; so they may be tied up and preserved for feed. They are very good for horses and other stock will eat them readily. Next cut the stalks off close to the ground and lay them in a rack similar to an old-style woodhorse but larger. The stalks can then be tied in bundles about 8 or 10 inches in diameter, with two bands about 3 feet apart. The tops are cut off with about 2 feet of the stalk. The seed has a food value and should be saved. The bundles should not be allowed to remain flat on the ground as it is liable to affect the flavor of the syrup.

When taken to the mill, the sorghum stalks are crushed and pressed between rolls. The juice is then evaporated down to the consistency of syrup. For the pressing and cooking, the manufacturers used to charge 25 cents per gallon. When granulated sugar became so cheap and the many by-products in the shape of syrup were put on the market at such low prices, there seemed to be no place in the market for sorghum molasses, even tho it was considered the purest and most wholesome syrup to be had.

The growing of sorghum was almost entirely discontinued, but the time is surely here for us to begin again. A good average crop will produce something over 100 gallons per acre of the finished product. I believe it is safe to calculate on 100 gallons of syrup per acre clear of the charges for making. If it is worth $1.50 per gallon in the market, and it should be, an acre of ground will produce $150 return for the season's crop with a supply of sweets in the cellar. I have helped my father make thousands of gallons of it. It was profitable to the producer and consumer, as well as to the manufacturer then and I am sure it would be so now; and we would be doing a patriotic duty by producing a much-needed food product right at home. It is too late to grow a crop this season, but I hope farmers will give this careful thought and be ready to take it up actively another season.—Dr. M. E. Conard, Chester Co., Pa.

A Well Established Alfalfa Plant

Boys Prefer This Method of Hoeing

Queries and Comments

Cover Crop

"What would be the most economical thing to sow as a cover crop this year?" T. H. M., Lycoming, Pa.

The most economical crop as to cost of seed would be rye, but in order to improve the soil most there should be a legume mixed with the rye. It is possible in some years to secure a stand of crimson clover even as far north as your place, but it is something of a chance. Rye and vetch make a surer crop, and a bushel of rye and a half bushel of vetch to the acre even at present prices will pay. Where the addition of nitrogen is not so important, a bushel and a half of rye to the acre is to be recommended. If sown in a corn field at the last working it is possible to pasture the rye in fall and it may be either grown for grain next year, or plowed down as desired.

Raising Clover Seed

"I have a six acre field of fine clover from which I would like to harvest a crop of seed. What is the process? I have never raised any and very little has been produced in my neighborhood. How much seed might I expect?" A. T. B., Lehigh Co., Pa.

Clover seed is produced from the second crop. The first crop should be cut early, about when the blossoms begin to turn brown. This gives the second crop an earlier and more vigorous start. The amount of seed per acre varies with the season. If the season is such as to produce a rank second growth, the yield is generally small, while a short stalk may produce heavily. If on a good even stand, 25 to 30 seeds are found in each head one to two bushels per acre may be expected. Less than this may not pay. If prices remain as at present, a yield of two to three bushels per acre would be a very profitable crop.

Hairy Vetch

The time has come when the practice of growing a cover crop must be more generally followed, and I am safe in saying that none can be grown in Camden County to better profit than hairy vetch. I say profit because when you grow vetch you are getting as much nitrogen into your land as with any crop you can grow, and you know you pay a big price for nitrogen.

My experience in vetch raising covers a period of eight years. I find that it is an excellent crop to feed both land and live stock. I remember that one year we had a strip in vetch and winter oats which was cut green for the cows; right after cutting the entire field was plowed and planted to corn so that the corn rows ran across the strip that had been in vetch and oats. You could see a big difference in the growth of corn that year and in other crops during succeeding years.

You can sow vetch from the latter part of June until the 10th of October. Our usual rate of seeding is twenty pounds of vetch and a half bushel of wheat to the acre. This year I expect to seed the greater part of my tomato field of thirty acres to vetch at the last working. If vetch is sown in the latter part of June or in July it will make a good cover for winter so that you can plow early in the spring and get a lot out of it; but if sown in August or later it is decidedly to your advantage to let it make some growth in the spring before turning under.

One year I set out tomatoes in a field where I had cut winter oats and vetch. Altho these tomatoes received no fertilizer they produced as good a crop and as early a crop as the land right beside it which received 600 pounds of fertilizer containing 7 percent of nitrogen which was planted ten days earlier. When sown with winter oats by September 15, vetch will make the finest kind of hay. Altho I use winter oats and wheat in our mixtures with vetch, I believe that in most sections of the county rye is a better grain to use in the mixture for cover crop purposes. If you have never raised any vetch try some this year and I believe that you will think as much of it as I do.—F. W. Shivers, Camden County, New Jersey.

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PHILADELPHIA, PA., JUNE 22, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

Rural School Problems

Rural school boards will in all probability find a shortage of teachers for the next year. This shortage is already felt in the towns and cities, and rural communities will be scoured for the best teachers to fill the vacancies. The result will be that many rural schools must be supplied with young, inexperienced and unqualified teachers. Every effort should be made to hold all successful teachers even if wages must be advanced. It is said that no other class has been more depleted by draft and the lure of high wages than has the teaching force of the nation. While we realize the financial condition of most rural school districts is not good, yet there is no justice in sacrificing the educational advantages of the children by trying to continue at the same annual outlay for school expenses. Nobody expects it in any other line. Certain improvements and outlays in other activities may well be deferred for a readjustment of prices without serious loss, but any delay or reduction in a child's education is just that much total loss to the child and the state since every day brings him that much nearer the end of his school days.

As in most other things, the necessities of the times will probably enforce certain changes in the direction of betterment. One of these is the abandonment of many little costly and unprofitable one-room schools and the centralization of several at one central point. This will be done in the interest of economy of operation and because of the scarcity of competent teachers. While the requirement of building suitable buildings at this time may be impossible, it is often possible to rent or convert other structures for temporary use. Anything and everything must be done to keep the rural schools from retrograding. War is a destructive institution, visiting its degenerating influence on all industry, commerce and many social ideals. The work of regeneracy lies with the coming generations. Don't neglect or slight their preparation.

* * *

The Stitch in Time

We continually receive inquiries out of season asking advice as to how to combat this or that pest or how to remedy some unfavorable condition. We say out of season, because the proper time for the right action is often long past—the preventive measures were not applied at the right time. For instance, some write: "My plums are dropping when half grown, and those which stick rot before ripening." Another writes: "The leaves on my grape vines are dying and the young grapes rot. What shall I do?" Others says: "My young chicks have the gapes." Or, "My chickens have the roup." Some farmers want to know what is the matter with the transportation system that they cannot get goods that were ordered ten days or two weeks ago.

We expect such queries and are always glad to give the best advice possible under every circumstances; yet we must continue to urge a greater regard for the old maxim, "A stitch in time saves nine." The suggestion of that stitch is one of the provinces of a farm paper. It is our endeavor to suggest the right thing at the right time so that the troubles and losses may be forestalled by prevention applied at the proper time. Unfortunately, too, many people neglect well-known duties in the hope that disastrous results will not follow. Once in a while they may guess right and come out successful, but the thrifty farmer takes no more chances than he must, and acts under the rule, "Hope for the best and prepare for the worst." It is too late for anything to bring best results after blight appears, or the seed corn fails to germinate, or the grapes and plums rot, or the apples are scabby and filled with worms, or the chickens are dying with roup and gapes, etc.

We repeat, however, the invitation to send us any query at any time and we will advice to the best of our ability even tho the most helpful advice was given at the right time. The needed remedy, impressed by this season's failure, will not be forgotten next year.

* * *

The Common Good

These are hard days for idlers. loafers pleasure seekers, profiteers, partisan politicians, and all that class whose ambition heretofore has been for selfish indulgence or advancement. The world has never passed thru an experience which has so effectively allayed the selfish and developed the social qualities of mankind. By this we mean that in the defense and advancement of the general welfare, men are voluntarily contributing their services and means, even to the point of sacrifice, for the common good, while relegating the purely selfish to a secondary place. Those who are slow to do this promptly receive the censure and condemnation of the public. The national slogan is: "work or fight," and this sentiment has been enacted into law in many places, while in nearly every locality public sentiment produces about the same result.

Aside from the immediate purpose, that of winning the war, the transformation of character is a good one. In the settlement of the first English colony in America, John Smith pronounced the decree, that he who will not work shall not eat. The social spirit is the dominant one in pioneer life; in fact, it was the foundation of our national development and is the basis of democracy. Unfortunately, great prosperity and rapid development gradually supplanted the social instinct with the selfish purpose, and in their greed and ambition, men again denied that they were their brother's keeper. The re-discovery of the individual's place and duty in the social order will make of the world a new place, aside from the results of the battlefield. Altho the Man of Galilee made this the basis of his teaching, it has taken the word's greatest calamity to bring it home to mankind.

For these reasons, those who desire to see the old order re-established after the war, either in business, politics or religion, are doomed to disappointment.

* * *

Organized Buying

Farmers' buying and selling organizations have had many jolts in the past. As a reminder of the possibilities, and as evidence of what is being done under good management, we quote the following from the manager of a farmers' exchange in New England. He writes: "We placed an order this morning for a car of oats of 40 to 42-pound grade at 87 cents per bushel, delivered. The farmers who purchased these oats are buying locally at the present time at $1.13 to $1.30 for oats of the 32-pound grade. Last week we sold a car of high quality in a nearby town at 86 cents a bushel. The local dealers have dropped their price 15 cents a bushel since we have begun buying direct, altho the open market has been on the advance during the intervening days.

"These savings will give courage to the farmers and answer the Nation's call for greater production more quickly than any national or patriotic plea. The farmers cannot produce on patriotism alone, regardless of how strong their desires and inclinations may be."

The prices quoted here represent a very comfortable return from co-operative or collective buying. They represent what may be saved by buying in wholesale lots instead of retail as is the custom with much of what the farmers buy. The Federal Government is now enforcing far-reaching market regulations which make collective buying less important than in normal times. But there will be marketing problems for farmers after the war is over, and no one can solve them better than the farmers themselves, thru their organizations. There have been many disappointments in the failure of marketing theories, but someday organized buying and selling will become the common practice in American agriculture.

* * *

Rural Express

Among the many emergency activities developed as a result of war conditions, some are certain to remain as permanent institutions Among these are likely to be the rural motor truck lines now being developed in so many eastern sections and lately being fostered by the Federal Government thru the Highways Transport Committee. The proof of the practicability of this service lies in the fact that such lines are rapidly coming into existence as the result of local demands, without promotion effort. In many cases the pioneer lines have started with the operations of a single farmer truck owner. In making the necessary trips in marketing his own goods, he has been induced to take on the goods of his neighbors or bring back purchases for them. This business has developed naturally until the farmer has found it profitable to establish a regular service. In other places individuals or hauling companies have recognized the need and have developed truck lines with definite time and rate schedules. Where a business experiences such a natural growth there is little need of experimental work. In many sections of the East the Highways Transport Committee will have little to do except to help locate the lines where they will be of greatest service and assist in the adjustment of charges, time schedules, etc.

The advantages of this service where properly located, are obvious. It enables one man and one vehicle to do work that is now done by many. It enables the small farmers to make frequent sales of small quantities of produce without taking them and their teams from the farms. It will enable these farmers to produce a wider variety of crops than is profitable where personal time and attention must be given to the marketing of each. It will cheapen the cost of getting goods to market as it will do away with most of the half and quarter-load hauling now so common. And it will apply most of these savings to hauling back the supplies that must be bought for use on the farm.

One of the early difficulties found in the full development of the service may eventually prove a lasting benefit. Farmers have been accustomed to making personal sale of every load of goods. The farmer that sells by motor express must arrange for sale of his goods upon receipt. This will eventually call for a more uniform standard of grades than has been required in individual selling. Farmers can readily arrange for acceptance of their goods in most markets and arrange for a satisfactory system of payment. But they will have to see that their goods conform to certain standards in quality, grading, etc. When this is done it is but another step to standardized goods for an entire community. With such standards, the producers should be in position to secure a better price on their products as well as a lower cost on transportation. In the same way they should be able to save money in the purchase of goods by combining their orders for staple requirements. These features are for future development. The rural motor express lines have enough instant advantages to insure their establishment in a great many rural communities.

NEW YORK LETTER

Farm Fuel Restrictions.—Farmers desirous of purchasing soft coal for engine use and to make maple products next spring are told by dealers that they have recently been notified that, while sales may be made, none may be used on farms after next April 1. This will cripple maple sugar making here. The state made enough the past spring, over 17,000,000 pounds, to warrant a special order exempting this industry, it would seem.

Low Spraying Costs.—Certain New York communities have proved that community spraying outfits are most practical. One community employed a man and team continuously and reports 65 cents per acre as costs of spraying for the season, or 13 cents per acre for one spraying.

State Fair to Feature County Exhibits.—The most attractive feature of last year's State Fair proved to be the eleven great county exhibits, with cash rewards for all and cups and $200 to $50 cash prizes for winners. Secretary of State Grange, W. N. Giles, the one man best acquainted with conditions all over the state, is again to have charge of this work this year, and is already spending much time in arranging for them. He has severed his connection with the new state Farms and Markets Council that he may devote all his time to the grange and this work.

Power Ditcher a Success.—The first power ditcher furnished by the State Food Commission is in use in Cayuga County. In a few days a county drainage day will be held when farmers generally will be invited to see the machine in operation. It is proving a success in every way, digging 7½ rods per hour, 3 to 5 feet deep, 15 inches wide. The cost to the farmer is 50 rents a rod, and the board of two operators, the state and drainage association assuming all other costs.

Few Barrels For Fruit Growers.—Commissioner of Agriculture Wilson is investigating the barrel supply, for a report to the Farms and Markets Council. He fears a shortage so great that substitute boxes or crates may be necessary. The price asked for barrels is 60 to 75 cents—and materials for making them are hard to obtain owing to freight difficulties.

Farmers May Run Independent Ticket.—The State Federation of Agriculture will ask rural organizations to name state officers. The federation will select those names most popular and offer them to the old parties for nomination. If not recognized, the organization plans to run a ticket for the farmers, sending spokesmen wherever needed. The federation says such a ticket will be non-partisan. Officers elected at the recent meeting at Albany were: President, Frank M. Bradley, Niagara County; First Vice-President, Samuel Fraser; Secretary, Seth T. Bush, Monroe County; Treasurer, Fred Cornwall, Wayne County.

Dairies Sacrificed for Lack of Help.—Marcellus reports two more milk skimming stations closed, and most dairies rapidly decreasing because of lack of help. Farmers can make no profits under present conditions and do not care to continue—cannot in most cases because of closed milk stations and no help.

State Fair Exhibits.—The War Department will have 2,500 feet of space at the State Fair, and will make extensive exhibits. A vast amount of grading and filling has been done on the fair grounds and much more remains to be done. The commission will try to secure 78 acres of additional room for exhibits north of the old grounds.

Ninth Annual Rose Show.—The Syracuse Rose Society will hold its ninth annual show next week, with 100 prizes and medals to be awarded. There will be no professional classes but three classes for employers of professional gardeners.

Early Market Products.—The first home-grown peas and string beans appeared on the Syracuse markets last week, with new beets and strawberries in small amounts. On Long Island, strawberries are ripening and alfalfa is being cut. Cheese and eggs have risen slightly the past week. New alfalfa sold for $19 per ton on the Syracuse market this week.

School Meetings Well Attended.—At the annual meetings for election of rural school officers last week, the attendance was unusually good. Women officers were elected in many cases. All sections are finding a great scarcity of teachers, less than 25 percent of the needed number being available in some towns. This is being met by special permits to high school graduates, and by the taking up of the work by retired teachers, also by consolidating schools.—F.

HARRISBURG NOTES

Farm Labor.—The Department of Labor and Industry and other state branches which are wrestling with the labor problem are now pointing out the essential needs of farm labor. As yet the results of state efforts to get men to the farm are small, but it is believed that in July and August there will be aid given by thousands. Last month the state employment agencies placed on farms 314 out of 10,000 persons securing positions. There were 835 farmers asking for help and 538 applicants. There were 103 gotten mining jobs and 9,700 sent to other industries. These figures show the start of an effort on the part of the state to assist in solving the farm labor problem.

Highway Situation.—Altho prices for construction of highways are going skyward there seems to be no let up in the award of contracts for road building. At the State Highway Department the last week two contracts were let at very high figures after committees of interested counties had come here and asked action. In one instance Luzerne County agreed to join in a proposition. The maintenance work is reported as generally under way, stipulations having been made with the national government as to the use of materials. Plenty of money is in sight, it is stated, for all of this work. The toll road funds, voted for purchase of such highways, have been much depleted by purchases in York and Lancaster Counties and few additional roads will be bought until this time a year hence when the Legislature will make new appropriations.

Oleo Going Up.—Thus far in 1918 there have been issued 4,287 licenses for sale of oleo, yielding $425,000 in round numbers. During the whole of 1917 there were 4,364 licenses issued. General observance of the oleo law is reported.

Passing Up Politics.—There is a pronounced disposition on the part of men high in the state government to eschew politics for awhile, the results of the Republican primary being accepted as the opinion of the people in regard to the state administration. The Governor will leave soon for his summer home in Maine and things will go on quietly at the Capitol, affording a much needed rest in governmental affairs preparatory to a change next January. In a number of the departments acting heads will run affairs until the new administration comes in.

Stream Rights.—No agreement has yet been reached between the State Commission of Agriculture and the State Department of Health regarding a general rule to govern pasture and pollution of stream. This subject is continually cropping up at the Capitol and it is now hoped to secure some general understanding between the two branches of the Government which will simplify matters and obviate complaints.

Dog Law Enforcement.—The manner in which the dog license law is being enforced in a number of the counties is attracting attention, but it is regretable that the points of greatest activity are industrial rather than agricultural counties. The law was designed primarily to protect sheep and the state policemen and wardens appear to be getting busiest among the foreign element which is allowed neither dogs or guns. From all accounts the strong arm of the law will be invoked by the state to enforce the enforcement, so to speak, because in many townships which are exclusively rural, constables have refused to hunt down dogs. State officials declare that it is essential that this should be done because of the increase of sheep reported.

Powers of Market Bureau.—A rather interesting opinion came to light the other day at the Attorney General's department and settles beyond question the authority of the State Bureau of Markets in taking possession of foodstuffs. A consignee and a railroad became involved in a dispute as to whether a shipment of food had deteriorated during shipment and the state bureau sought to secure the vegetables before they spoiled, and to sell them. It was held that the state officer had no authority to seize the goods even to sell them for food, but that if both parties agreed he could do so. In some respects the opinion had some fine points and has by no means clarified the underlying idea in the bureau's powers of seizure.

Crop Prospects Fair.—According to statements made at end of first two weeks in June by the Department of Agriculture, wheat will run low, comparatively, but spring wheat was sown on approximately 9,000 acres and may overcome some loss. The corn, oats and buckwheat prospects are given as fair; fruit well up to the average and small fruits and vegetables doing well. The reports on "war gardens" show an enormous number of such enterprises under cultivation, mainly in industrial communities.—Hamilton, Harrisburg, June 17.

COUNTY NOTES

Miffin Co., Pa., (C) June 6.—Cool nights, warm during the day with fine showers. Stock doing well, and high in price. A carload of cows and other stock shipped to Lancaster every few months. Quite a number of young cattle put in the mountains on pasture by the farmers. Wheat and grass looking well. Wheat, $2.10; corn, $1.60; rye, $1.75; oats, 80c; potatoes, 50c; butter, 35c; eggs, 32c; apples, $1. Working corn and planting alfalfa hay is the general work. Ground in good condition for all kind of work. Corn doing well, some replanting done.—J. H. Byler.

McKean Co., Pa., (N) June 5.—Fine weather; some hard thunder storms. Tornado took roofs from some county farm buildings May 25. Crops doing well; planting about all done. Meadows looking fine. Old potatoes, $1; new, $2; butter, 50c; eggs, 45c; corn, $1.58; bran, $2.50 cwt; oats, $1.15. Farm work is generally pretty well up-to-date. From present indications haying will be early.—R. C. Fuller.

Adams Co., O., (SC) June 5.—Weather is dry and very hot. Rain is greatly needed. Live stock in good health and doing well. Oats not making much growth. No tobacco set in northern half of county. Many farmers have had to plant corn the second time because of poor seed. Those who tested each ear have a fair stand of corn. Many blighted heads of wheat caused by intense heat and drouth.—W. E. Roberts.

Crawford Co., Pa., (NW) June 12.—Warm until June 8 when it turned cool; slight frost damage. Eggs, 36c; butter, 50c; potatoes, 50 and 75c; strawberries, 15c qt.; oats, $1; corn, $1.80; wheat, $2.10; calves, 13½c live. Crops are looking good. Some corn had to be replanted. Most of the corn is large enough to hoe. Work quite well up. The town people that offered their services to farmers are in demand.—J. F. S.

Broome Co., N. Y., (SE) June 7.—Numerous rains are keeping the crops growing well. Strawberries are beginning to ripen and sell at 28 to 30 cents per quart. Cabbage and tomato plants are set out and are growing fine. Some potatoes are up enough to cultivate. Green peas are nearly large enough to pick. Farm help is very scarce; some farmers are hiring women to work in the fields. Butter, 45 and 50c; eggs, 37 and 40c; live fowls, 30c; dressed fowls, 34c; old potatoes, 65 and 75c bu; old onions, 50 and 60c. Flour is cheaper but the substitutes are going higher. It costs over $5 to get a 24½ pound sack of flour with the necessary substitutes. Hay is looking fine. Trees are well set with apples.—C. H.

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33x4	8.50	36x4½	9.00
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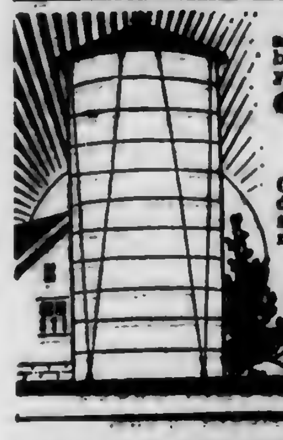

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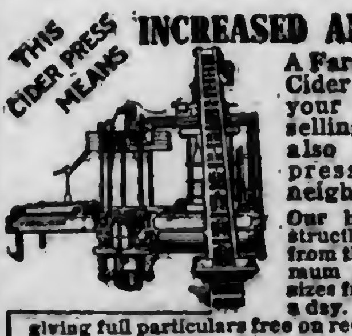

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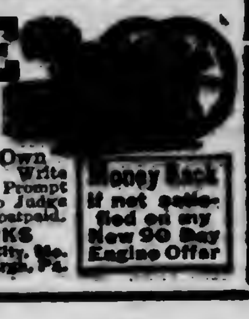

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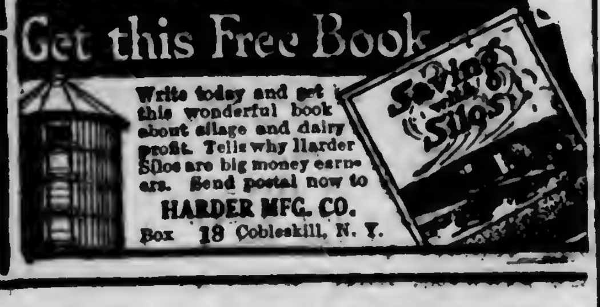

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Timely Dairy Notes

Lower Prices—Early Haying

The June Price

With the price of June milk fixed some time in advance, there was less occasion for excitement on the first than usual. Farmers accepted the cut, which brings us to $1.72 per cwt. for three percent milk here, with a tolerable degree of philosophy if not with satisfaction. Some farmers denounced the League for making the low price, and some who denounced the Commission before, now make the assertion that the Commission would have done much better for us had the League not stepped in and made the price before the Commission met to consider the June price. There is some ground for what is said on both sides, but it is doubtful if it is worth while to find too much fault with either body. The two agencies have worked in accord at least in the main, and the heads of the League speak well of the Commission and of what it has accomplished.

Probable Future

Nothing has been heard as to what the price may be from July on. It looks as tho there might be a good advance on the first of next month and that it should strengthen right along. The surplus must soon be past. Cheese is being made quite largely again and the market is clearing up well. An advance in cheese prices is looked for soon. Condensaries are running full speed, altho they are still storing considerable quantities. There are evidences that dairy products are being used in the army and navy, and that plans are under way for a still larger use of them. Other companies are engaging in the condensing business, altho it is reported that equipment has reached what might seem prohibitive prices. A number of the smaller condensing plants have been obliged to close and go out of business, but it seems likely that these will again be operated by someone. On the whole, I am inclined to take an optimistic view of the dairy situation at present. The situation is complicated and one risks much when he seeks to predict the future. It seems certain that the public is getting a better understanding of the value of milk as a food, and consumers realize somewhat better the cost of producing it. When these are more fully understood it is certain that the demand will be stronger, unless dealers so far enlarge their costs as to place a hinderance.

Retail Prices

The Federal Milk Commission for our district placed the price of delivered bottled milk in New York City for May at 13 cents. That was not too high as prices have run, but it is understood that the dealers expect to charge the same for June, altho the cost of the milk to them is almost a cent and a half less. In talking with the general manager of one of the distributing companies lately, he said they were going to try to make the price at stores 9 cents, but thought they should have 13 cents for that delivered in bottles. I do not understand that the Commission now has a hand in the fixing of the retail price of milk, but the milk game is not settled. Farmers should probably handle the milk stations in the country, but they or someone else certainly should have a hand in fixing the price to the consumers as well. The farmers are vitally interested in seeing that milk does not retail too high.

Favorable Growing Season

Up here in the country we work early and late to produce as much milk as we can. Thus far this season, nature has seemed to be on our side, and pastures are right for good production. A good many farmers also have changed from winter dairying to summer dairying; possibly too many have done so. The result of all of this is that there is good reason for a surplus of milk right now. The encouraging feature is that there is so little complaint over a surplus. It seems certain that condensers must have assurances that their goods are to be needed and that an outlet will be provided in the way of shipping before long. Some of the leading cheese men are also stocking up well. These things combined make it seem certain that dairy products will be in good demand before we see much cold weather.

One of the problems of today is how best to prepare for the next few years. There are two questions before the dairymen: First, what about future demand for our products, and second, how about the labor supply to meet the demands. It would seem, without discussion, that one job is to keep right along in about the old style and at about the old place so far as our labor supply will permit. We may be obliged to cut down somewhat on account of labor shortage, but we will continue to need cows and must raise the heifer calves.

Early Hay

I am writing this while on the train going northward from my home county. This is June 5, and here in Schoharie County, I have seen the first farmers cutting grass this season. It looks like a fine piece of mixed clover hay and will make a fine crop. Old meadows close by look as tho they would not be ready to cut for three weeks and perhaps four. I have seen a number of fields of mixed clover near my home that might be cut. We are all inclined to leave haying too late. Early-cut hay saves grain and makes milk.—H. H. Lyons, Chenango Co., N. Y.

THE FEED SITUATION

As feed contracts of long-standing gradually expire, supervision of the feeding stuff industry by the Food Administration becomes freed of details which have thus far made the problem unusually complex. To fully understand the present situation, a summary of events may be useful.

When feed control was inaugurated last winter, standing contracts were respected, and mills permitted to dispose of goods oversold or goods on hand, at the old prices. Normally, such feed would have gone into general distribution within from 30 to 60 days, but transportation and bad weather delayed distribution and resulted in the disposal of much of the feed locally. The remainder has only lately reached some of the points to which delivery was due last winter.

The Regulations in Brief

Consequently, while farmers near mills have been securing their mill feeds at less than $2 per hundred pounds by calling at the mills and hauling it away, feed buyers at a distance have not received the benefit of the price limitations. Briefly, the bulk price of bran per ton at mills in car lots must not exceed 38 percent of the cost to the mill of one ton of wheat at the mill. Differentials have been changed for other mill feeds based on the maximum price of bran as follows:

The bulk price of bran is retained as the basis, being 38 percent of the cost of a ton of wheat to the mill. The price of flour middlings can be $2 more per ton than bran, instead of $9 per ton over bran prices as first announced. Red dog must also sell at not more than $2 per ton over the price of bran, instead of $15 over, as first fixed. Mixed wheat feeds may sell at $1.50 per ton over the price of bran. These prices and differentials are for bulk carloads at the mill. They do not include freight, dealers' profits or cost of sacking. The announcement adds:

"The total amount of wheat mill feeds is admitted to be small in proportion to the demand and the most practical means of reducing feeding costs lies in a more general use of the coarse grain by-products of which there is now an abundance. Mill prices of hominy feeds have lately declined by from $25 to $30 per ton, rye and barley feeds in proportion. Oil meal is particularly low in price when compared with other feeds on a nutritive basis.

"Far-seeing farmers may advantageously plan to secure their winter supply of feed in September and October, when danger of spoilage is past, and avoid the uncertainty of deliveries during the winter when the demand for feed usually exceeds the output of the mills."

Brokers in wheat mill-feed are limited to a charge of 25 cents per ton; commission agents (making sale delivery and collection) are not to charge more than 50 cents per ton commission; and wholesalers or jobbers are limited to reasonable advances over the average bulk price at mill (plus brokerage, commission or inspection fee actually paid).

Demand For Mill Feeds Exceeds Supply

The trade has shown a spirit of hearty co-operation, and the number of revoked licenses and other penalties is considered small in proportion to the size of the feed industry. On the basis of actual nutritive value, however, prices of mill feeds now sold under Food Administration price regulations compare favorably with other by-product feeds—in fact, so favorably that present demands for mill feeds greatly exceed the supply. This occurrence may be expected when the price of a commodity is limited by factors other than those actually resulting from the law of supply and demand.

Under the restricted price schedule, the public would like to buy more mill feed than actually exists in the country and for the remainder of this season, at least, the Food Administration suggests a larger use of other by-product feeds. Those at present in greatest abundance are hominy feeds, gluten feeds and oil meal.—U. S. Food Administration.

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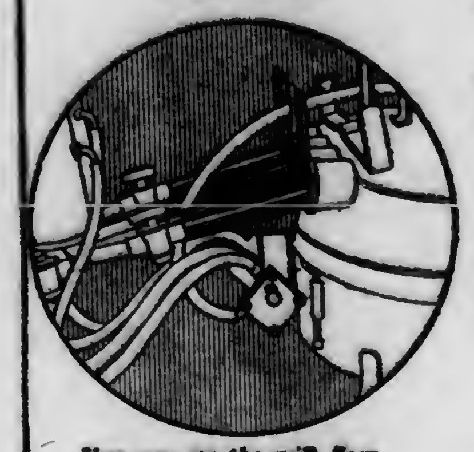

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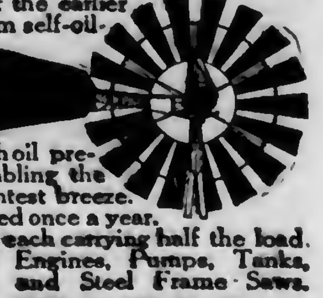

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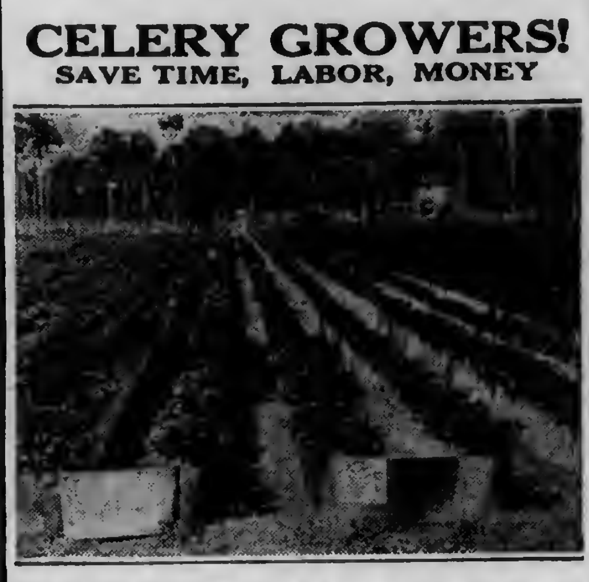

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Garden and Truck Crops

TIMELY NOTES

Get Benefit of a Sod

After a field of hay has been growing a few years, it is less productive than it was. Furthermore, the sod really becomes thinner. Now that the haying season is on, the trucker had better begin to consider the advisability of plowing up his less productive fields. Why wait until next fall or spring, if it is convenient or possible to do the work now? Sod plowed as soon as possible after the hay is cut will be in excellent condition for late beans, cabbage, sweet corn, late crop potatoes, etc. The rotting sod in conjunction with a generous application of fertilizer should give a profitable yield and leave the soil in splendid condition for an early cash crop next spring to be followed with a new and very productive sod.

Asparagus Cutting to Stop Early

Many asparagus growers have been in the habit of cutting their asparagus right up to a certain date each season. Such growers must realize that the present cutting season has been a most unusual one, in that the crop started very early in the spring and since that it has come very fast without much of a let up except for a day or so around Memorial Day. This means, of course, that the roots will have produced as much asparagus 2 weeks before the usual time to cease cutting. It is a good idea to watch the production and just as soon as the size and yield begin to fall off cutting must cease if the welfare of the bed is to be considered.

A War Garden That is Making Good

Wet Weather Injures Potatoes

The very heavy rains during the early part of June caused considerable damage to the low spots in the potato fields. Those growing on the higher ground do not seem to be making vines as they should. The growth is straight up and spindly rather than branching and sprawling over the ground. Small plants produce large clusters of blossoms and appear to be healthy but the desirable vine growth is lacking. Sweet potatoes are good. Can-house tomatoes are very uneven due to soft plants, scalding sun, flea beetles, potato bugs and cutworms, all of which were more prominent than usual.

Early Squash

The summer crookneck squash and the Italian (Cocasella) squash are being harvested. It should be remembered that the fruits should be removed from the vines just as soon as they reached the desired size. If the developed specimens are left on the vines, the yield will be materially reduced. It is also a good practice to plant the late Hubbard squash and the Boston Marrow squash near the early squash patch so that there will be less squash-vine borers in the late kinds. Good farmers believe that the Hubards and the Marrows are less subject to insect injury when planted late in June rather than earlier in the season.

Transportation Problem

Why was it that the southern New Jersey asparagus growers were not allowed to ship their product thru to the Boston market while the Boston dealers came down to New York, bought their "grass" at half price and then shipped it thru? The southern Jersey farmers are organizing so that they will be able to make a united effort to demand their share of attention from the transportation companies. At the present time Mr. Chase, Farm Demonstrator for Gloucester County, is calling at every shipping station in his county to find out how many carloads of early tomatoes are shipped from that county in a normal year. This information is desired by the Food Administration so that they may co-operate with the directors of the transportation companies and secure the best possible service to save this enormous amount of perishable food. This kind of work will surely mean the saving of thousands of dollars for the producers.—R. W. DeBaun.

Timely Fruit Notes

By Dr. J. P. Stewart

Cherry Notes

The Ida cherry is showing up exceedingly well in the southern part of the state this year. This variety was originated by Mr. E. H. Cochlin in Cumberland County, Pa., and it is proving to be one of the best early sweet cherries that we have. It has a strong, vigorous and productive tree, and its fruit is large, light-colored, relatively firm, high in quality, and altho ripening early, it is relatively free from attacks from birds.

It ripens about the same time as the Black Tartarian, or slightly earlier, and is far less injured by the birds as a rule. I would certainly recommend it for careful trial in any locality where sweet cherries can be safely grown, especially in home plantings.

The Yellow Spanish is another of the light colored sweet cherries that is certainly maintaining its high reputation wherever I have observed it. The tree seems to be much hardier than the Napoleon, which has recently been its chief rival, and it bears much earlier and the fruit is much better in quality. Its fruit is not quite so firm and hence it is not quite so good a shipper as the Napoleon, but in any home planting, the Yellow Spanish should certainly be given the preference.

Saving Crimson Clover For Seed

We have had inquiries from fruit growers as to the possibility of allowing at least part of their crimson clover to stand in the orchard and cut it for seed instead of turning it under.

This practice, in my opinion, is very desirable, especially at the present time, when all seed costs are so high. Wherever the stand of crimson clover is good and the growth of the trees is satisfactory, so that there will be no special danger in allowing the crop to remain long enough to properly ripen its seed, this should undoubtedly be done. The chief precautions needed in cutting this kind of crop for seed arise from the fact that the seed shatters very readily and the seeds also sprout quickly if allowed to remain moist for any considerable time.

For these reasons, it is usually best to cut the fully ripe crop either at night or early in the morning when it is still wet with dew. The old self-rake reaper has been used very extensively for this purpose, chiefly because it enabled the crop to be bunched at once with as little unnecessary motion as possible.

Apple Leaf Spot Abundant This Year

There is an unusual prevalence of the so-called frog-eye leaf spot on apple trees in the southern part of the state this year. This disease is caused by the black-rot fungus which almost invariably follows fire blight, and which develops small pustules in the bark in all of the infected twigs and wood. The fungus passes the winter in the diseased bark and the spores are washed out of these pustules on to the foliage and fruit during the growing season. In bad cases the foliage may be almost entirely removed from the trees a month or more before the proper close of the growing season. This naturally weakens the trees as a whole, and there is also a much smaller setting of fruit buds than would otherwise occur.

Spraying is only partially successful against the disease, especially if the diseased, cankered areas and other sources of infection are permitted to remain in the tree. The best procedure therefore is to cut out all dead limbs, and especially those which show any sign of the black-rot pustules, and to remove and disinfect the bark from all cankered areas which show these pustules. If this is thoroly done the ordinary spraying schedule for apple scab and codling moth will usually take care of this trouble. In an especially bad case, however, it may be desirable to substitute bordeaux mixture, 4-4-50, in place of the lime-sulphur in the "pink" spray.

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PENNSYLVANIA FARMER
261 S. 3rd St. Phila., Pa.

Farm Products Prices and Prospects

PEACH PROSPECTS

The Middle Atlantic States, including New Jersey, Delaware, Pennsylvania, Maryland, West Virginia, and Virginia, indicate a crop of 2,330,000 bushels or approximately 5,547 cars as compared to 7,219 cars last year, and a decrease of 736 cars from the May estimate. Much of this movement, particularly in New Jersey, will be by express and truck to nearby and local markets.

The peach crop in the Middle Western states of Missouri, Kansas, Nebraska, Kentucky, Indiana and Illinois is practically a total failure.

New Jersey has a splendid crop in Burlington, Camden, Gloucester and Cumberland Counties, particularly on the younger trees. Atlantic County reports but a fair crop because of severe winter injury, with curculio doing considerable damage. Monmouth and Hunterdon Counties have a light crop, with severe winter injury. Carmen are showing up much better than Elbertas thruout the state, the latter being shy in many sections. The white fleshed varieties are reported a fine crop in most districts.

West Virginia reports a crop of 45 percent of the state. The Romney section indicates about 30 percent of a crop while Keyser and Potomac River section estimates about 65 percent of a crop, orchards on elevations above 700 feet being full in many cases. Carmen and Champion are reported fairly full, but Elberta light, particularly in Hampshire and Romney section.

The Cumberland district located in Western Maryland and Southern Pennsylvania centering at Smithburg, Md., it is estimated has decreased 12 percent in condition since the May report. The number of cars for Pennsylvania and Maryland are estimated at 1,819 as compared to 3,016 last year.

Delaware reports a good crop, particularly of all white flesh varieties. Elberta is reported light.

The peach crop in the northern states, including New England, New York, Ohio and Michigan, is light, indicating a condition of 28 percent as compared to 61 percent last year, or a production of 4,357 cars as compared to 10,545 cars last year, a decrease of 59 percent in quantity. The hard winter killed most of the buds and many of the trees thrnout the northern states.

New York indicates a condition of 40 percent or a production of 3,333 cars, less than half that of last season. Niagara County will produce the bulk of the peaches, some orchards having a full crop. Elbertas are light in all parts of the state. Wayne County which last year produced about 1,000 cars of peaches is a complete failure and in many cases 50 percent of the trees are killed. Monroe and Orleans Counties report from 25 to 40 percent of a crop with many branches and trees injured or killed. The Hudson Valley crop is a complete failure.

The New England peach crop is a complete failure due to severe winter killing.

NEW POTATO PRICES

The new crop started in at selling prices below costs, gradually however, with the reduction of old potato supplies, the values have risen and in New York average $5 to $5.50 a barrel. With a reduced acreage in the Carolinas, Virginia and New Jersey and also in the north with an increased demand for them as substitutes for other foods, the outlook is for fair values to continue. Heavy shipments with congested traffic conditions could of course easily lead to a disastrous break in warm weather. Consumers must be prepared to pay more this year for all these farm products than ever before. Harvest help is demanding there and a half to four dollars a day compared to two and a half last year and one and a half five years ago.

FORECASTS OF NEW JERSEY CROP YIELDS

Estimated acreage, wheat, 91,000; rye, 74,600; oats, 71,000; hay, 356,000.

Estimated yield, wheat, 1,547,000 bushels; rye, 1,406,000 bushels; oats, 2,378,000 bushels; hay, 534,000 tons.

The condition June 1 forecasts the production of 2,644,000 bushels of apples, 874,000 bushels of peaches and 671,000 bushels of pears.

The acreages of corn, early tomatoes and oats have been increased and preliminary reports indicate a large increase in the acreage of late tomatoes.

Egg production for May compared with that for April shows a decrease of 8 percent.

The strawberry weevil has been reported injurious in the southern counties.

The Lunate Onion Fly, a European pest, which injure onions in somewhat the same manner as our common onion maggot, has been discovered in the southern part of the state.

PENNSYLVANIA CROP REPORT

WINTER WHEAT has shown some improvement during the past month owing to very favorable weather conditions. The heads are long and are filling well. Wet weather with unusually high temperature has caused considerable smut in some localities. Just how much this will affect the yield is too early to determine.

SPRING WHEAT.—There has been a large increase in the acreage of spring wheat this year; many farmers sowing same as emergency war crop, and also filling in where winter wheat had killed out. It is estimated that there was 9,000 acres of spring wheat sown this year as compared with 3,000, the usual acreage. Conditions so far have been practically normal with the exception that the growth has been retarded in some localities by excessive moisture.

OATS.—Farmers have increased their oat acreage despite the labor shortage and delays caused by wet weather. Conditions so far have been nearly normal and with average conditions prevailing from now until harvest the crop will be one of the largest ever produced in the state.

HAY.—Weather conditions have been very favorable for all forages and grass, and even with a decreased acreage Pennsylvania will produce better than an average hay crop.

APPLES blossomed unusually heavy this season but the rain and hail storms during the past month did considerable damage, causing a light set, particularly in Baldwins. However, the outlook at present is for about an average crop.

PEACHES.—The severe weather during the past winter did considerable damage to peach trees in all sections of the state and the crop will be exceedingly light with the exception of a few of the Southern counties which promise a fair yield.

CROPS FOR CANNING

Peas

From returns received to date from 249 firms and individuals engaged in canning or otherwise manufacturing peas, or about 81 percent of the total number reporting in 1917, it appears that 87,338 acres of peas have been contracted for thus far this season. The same firms reported this year that they contracted for 84,547 acres in 1917, and this amount represents about 79 percent of the acreage which was reported to the Bureau in 1917 by 307 firms and individuals as having been contracted for and harvested, or 108,748 acres. A comparison of the acreage reported thus far this season with that reported by the same firms in 1917, shows an increase of about 3 percent. If this rate of increase prevails thruout the contracting period, it would appear that a total contracted acreage of 112,010 acres may be expected this season.

Tomatoes

From returns received to date from 894 firms and individuals engaged in canning or otherwise manufacturing tomatoes, or about 53 percent of the total number reporting in 1917, it appears that 143,282 acres of tomatoes have been contracted for thus far this season. The same firm reported this year that they contracted for 138,093 acres in 1917, this amount represents about 65 percent of the acreage which was reported to the Bureau in 1917, by 1,679 firms and individuals as having been contracted for and harvested, or 210,183 acres. A comparison of the acreage reported thus far this season with that reported by the same firms in 1917, shows an increase of about 4 percent. If this rate of increase prevails thruout the contracting period, it would appear that a total contracted acreage of 218,590 acres may be expected this season.

Sweet Corn

From returns received to date from 337 firms and individuals engaged in canning or otherwise manufacturing sweet corn, or about 70 percent of the total number reporting in 1917, it appears that 161,320 acres of sweet corn have been contracted for thus far this season. The same firms reported this year that they contracted for 159,373 acres in 1917, and this amount represents about 79 percent of the acreage which was reported to the Bureau in 1917 by 483 firms and individuals as having been contracted for and harvested, or 201,645 acres. A comparison of the acreage reported thus far this season with that reported by the same firms in 1917, shows an increase of about 1 percent. If this rate of increase prevails thruout the contracting period, it would appear that a total contracted acreage of 203,661 acres may be expected.

SOUTHERN EARLY CABBAGE

The prospects are for an increase of about 50 percent in the early cabbage crop, over the production of 1917. Last year the production was 98,000 tons, while the estimated production for 1918 is 142,660 tons. The poorest conditions are in Texas and California. In the former it is given as 10 percent; in the latter, 55 percent. The acreage in the Southern states increased from 30,200 acres last year to 39,900 this year.

NEW YORK MAPLE SUGAR CROP

The production of maple sugar and syrup in New York state this season was apparently substantially greater than usual, and the quality was exceptionally high, according to the federal crop estimates. As a result of the sugar scarcity, the number of trees tapped was nearly ten percent greater than last year; with the help of a favorable season, the production of sugar and syrup was increased nearly 26 percent. Considering a gallon of syrup as equivalent to eight pounds of sugar, the total production of the two combined would be equal to 17¾ million pounds of sugar. About 21 percent of the sap was made into sugar, so the actual production of hard sugar was about 3,732,000 pounds, an increase of about 65 percent over last year. The production of syrup is estimated to have been 1,755,000 gallons, an increase of 18 percent.

Shipments of rice from China to the United States increased greatly during 1917 and according to present indications will break all records this year.

—

Shipments of sugar from Cuba to the United States are scarcely 5 percent below last year's shipments for the corresponding time in spite of the serious shortage of ships. About three-fourths of our sugar imports this year have been from Cuba.

—

During a three and one-half year period, beginning July 1, 1914, the United States exported to the Allies more than 616,000,000 pounds of fresh beef and nearly 203,000,000 pounds of canned beef.

—

The milk scales and the Babcock tester ought to point the finger of doom to the merely average cow.

Poultry

HURRY THE BROILERS

Every farmer ought to dispose of his surplus male birds as early broilers or else caponize them. Early broilers bring fancy prices. In the forcing of them it should be remembered that the quickest gains are also the cheapest.

The feeding of broilers may be divided into three periods—growing, forcing, and fattening. The growing period usually lasts four weeks. A regular growing ration should be fed until the chicks are well established and past the critical stage.

The length of the forcing period is variable. The ration differs from that of the first by carrying a larger proportion of protein. If possible the increase in protein should be brought about by adding cottage cheese, rather than by increasing the meat scraps. Too much protein causes digestive disorders.

The fattening period is generally of eight or 12 days duration. The time of feeding depends upon how long the chicks "stand up" to the fattening ration without losing their appetite. In case the broilers are not intended for private trade they should not be milk fed, but penned up and corn fed for a period of two or three weeks. They will then be in good shape for milk feeding at the packing house.

CANABALISM AMONG CHICKS

Every year we hear complaints about little chicks pecking each other to such an extent that they are injured. This some times develops to such a degree that the victims die, or are so injured that they must be killed. The practice usually starts by picking each other's toes in pure ignorance the first few days. If they succeed in starting the blood to flow and get a taste of it, the habit develops fast and it is with difficulty that it is broken up.

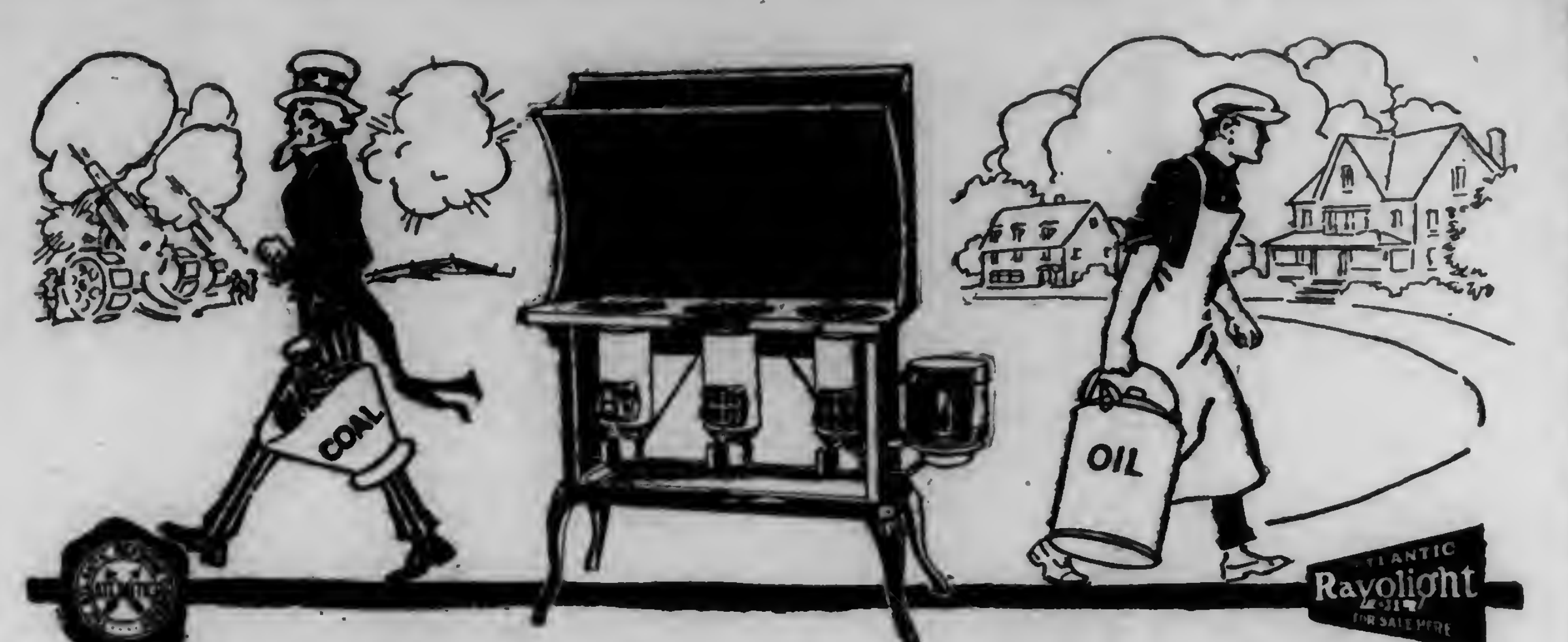
This habit is usually formed by chicks which are closely confined. Overcrowding in small quarters and feeding on a bare surface from which the chicks quickly eat their food gives them time and opportunity to form this vicious habit.

The only thing to do with a flock which has formed the habit is to give it free range, scatter their feed in short grass, or in litter so as to require hunting and scratching, and the feeding of some kind of meat—preferably a good grade of meat meal. Be sure, also, that they are fed enough to satisfy their appetites.

Trying to do without necessary poultry fencing takes a lot of pleasure out of the poultry business. When the birds are under control there is more satisfaction in their management. Of course plenty of range is necessary but when there is an opportunity of mating up breeding pens, separating the young from the old stock and dividing the young cockerels from the pullets, there is a greater opportunity to make money from poultry.

War is scraping our sugar bins and our granaries. The less we waste the longer it will take to empty them.

U-Boats and wastefulness are twin enemies.



Let Uncle Sam have the coal

Thousands of tons of coal will be saved this summer in homes that formerly used a kitchen range all during the hot weather. These homes are going to use *oil* cook stoves so there will be more coal next winter and therefore more for the government. Will your home be one of them? It should be.

NEW PERFECTION
OIL COOK-STOVES

will be in the majority of these homes and there should be one in yours. You will not only save coal—you will save money. Kerosene is far cheaper than coal. And with a New Perfection you can have the same good things to eat and with less work, trouble and time. It doesn't heat up the whole kitchen like a coal fire does, either. You can regulate the heat exactly as you want it. No fire to fix. No ashes to bother with. Many good cooks prefer to use a New Perfection the year 'round. But they get the best results (and you will too) when they use Atlantic Rayolight Oil instead of ordinary kerosene. The difference is in the quality—the way it is refined and purified. All waste matter is taken out. All the heat-producing elements are left in. Atlantic Rayolight is a superior kerosene yet the price is no more than for the other kinds. There's a dealer near you who sells Atlantic Rayolight Oil. Look for the sign, "Atlantic Rayolight Oil For Sale Here." Decide *right now* that you *will* have a New Perfection Oil Cook Stove this summer. Your dealer can show you one now. Go and see it today.

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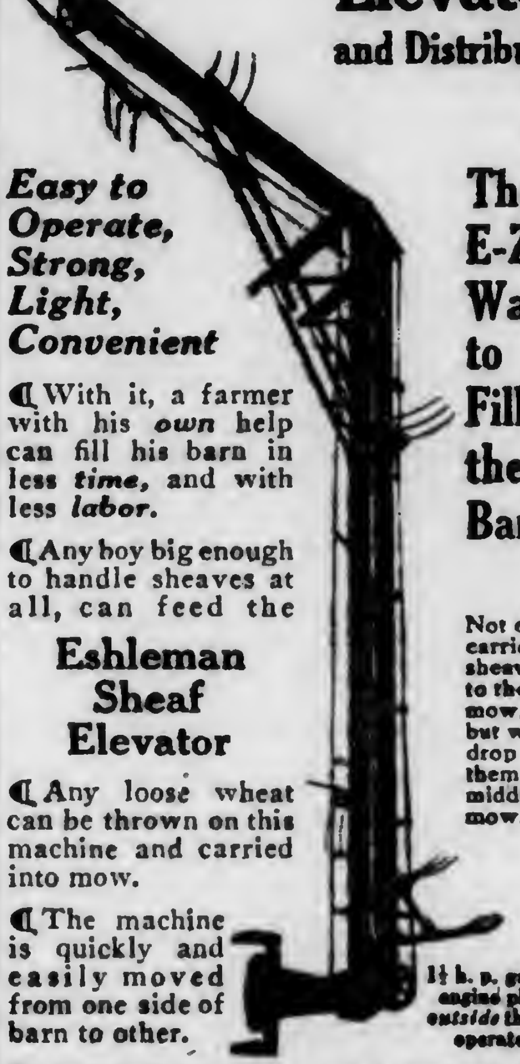
THE ATLANTIC REFINING COMPANY, Philadelphia and Pittsburgh



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Easy to Operate, Strong, Light, Convenient

With it, a farmer with his *own* help can fill his barn in less *time*, and with less *labor*.

Any boy big enough to handle sheaves at all, can feed the

Eshleman Sheaf Elevator

Any loose wheat can be thrown on this machine and carried into mow.

The machine is quickly and easily moved from one side of barn to other.

The E-Z Way to Fill the Barn

Not only carries the sheaves to the mow, but will drop them in middle of mow.

1½ h. p. gasoline engine placed *outside* the barn operates it

To get length machine needed measure from top log of barn to floor. Write for circular and prices.

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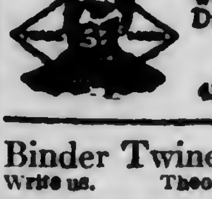

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May	4.16	Aug.	4.19	Nov.	4.22
June	4.17	Sept.	4.20	Dec.	4.23

W. S. S. WORTH $5.00 JANUARY 1, 1923

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 17, 1918.

Supplies of new potatoes are running very heavy. The week opened with over 130 cars of potatoes here from southern points. Notwithstanding these heavy supplies there was a fair demand for good sound stock. Poor stock, weak, wasty and poor, ranged from $2.75@3 per barrel. Best stock found a ready market at $4@4.25 per barrel, while one car sold up to $4.40. Some Georgia red skin potatoes sold at $4@4.25 per barrel. Best Norfolk and Eastern Shore potatoes sold at $4.25@4.50 per barrel. Quite a number of the supplies, however, were heated and slack packed and these sold according to quality and condition from $3 per barrel up. There are now but very few old potatoes left on the market, the few that are here selling generally from $1.50@1.75 per cwt. Sweet potatoes are also very scarce, the few remaining bringing a high price, ranging from $2.75@3 per hamper for No. 1's and $1.50@2 for No. 2's and mediums.

Vegetables

The asparagus season is now drawing to a close after being a very successful one for the growers. The quality of the supplies is now getting poor, but the market is ruling practically unchanged from last week, with demand active for fancy asparagus only. Culls are selling from 7@12c; prime, 10@17c; fancy, 15@22c; Colossal, 22@28c. There has been quite a decline in the string bean market owing to the increasing supplies from New Jersey, and as supplies will continue to increase, lower prices will of course prevail. New Jersey green beans are selling from $1.25@1.50 per ⅝ bu. basket, and wax from $1.25@1.40 per basket. Nearby New Jersey and Pennsylvania points are also supplying the market with new beets which are meeting an active demand at 4@5c per bunch. A few southern beets have been selling around 3c per bunch. There are still a few old carrots left in the market which are bringing the high prices of $3@3.50 per barrel. New carrots from nearby points are in good demand at 3@4c per bunch, while some from southern points have been fancy enough to command 3@3½c per bunch.

Cabbage has been quite a scarce commodity, and some fancy Maryland stock sold early this week up to $3.75 per crate, while Norfolk cabbage brought $2.75@3. There is now quite a sprinkling of Pennsylvania cabbage on the market which is selling generally at $2.50@3 per barrel. New Jersey cabbage has also made its appearance, and is now selling at 65@85c per ⅝ bushel basket. As heavier supplies are expected very soon, a decline from these high prices may be looked for. Cucumbers have been rather scarce and fancy are bringing high prices, but some very poor stock has sold at correspondingly low prices. Best sold quickly at $3@4 per hamper, but poor sold on down according to quality as low as 50c per hamper. Egg plants were in quite liberal supply all last week, and the market was rather weak, but under lighter supplies this week is more active with prices ranging from $1.50@2 per crate. New crop garlic is quite active at 10@15c per pound, as to quality. Lima beans are a very scarce article and are commanding high prices, ranging up to $5 per hamper as to quality. Lettuce is quite plentiful, but much of it is poor and leafy and is not wanted. Strictly fancy lettuce is in fair demand at $1@1.25 per box for New Jersey stock, while best Pennsylvania sells around $1.75@2.25 per barrel.

There has been a marked improvement in the onion market. Best Texas onions are now selling at $1.65@1.75 per crate, being an advance of 35@40c per crate over prices prevailing a week ago. Some New Jersey onions are appearing on the market, but are as yet a trifle too green to command good prices. New Jersey peas are very active, selling mostly at $1@1.35 per ⅝ basket, with now and then some extra fancy large peas selling at $1.50 per basket. Southern peppers are about steady at $1.50@2 per crate. New Jersey peppers on the other hand are increasing in supply and prices are gradually seeking a lower level. At this writing New Jersey peppers are selling at 80c@$1.25 per basket. Pennsylvania and New Jersey radishes are higher than last week, selling at 2@3c per bunch, with demand very active at the advance. New Jersey and Pennsylvania rhubarb is also active at 2½@4c per bunch, but the season is fast drawing to a close, and some of the stock is getting rather poor. Scallions are fairly active at $1@1.50 per 100. There has been practically no spinach on the market this week. New Jersey squash is meeting a good demand at $1.50@1.75 per ⅝ bushel basket. The supplies of tomatoes have been much more liberal this week, and prices are therefore lower, ranging from $1@3.50 per crate as to quality and size.

Fruits

With the exception of strawberries, which are now very scarce, all kinds of small fruits are getting quite plentiful. The strawberry season is nearly over, and the few remaining supplies are bringing big prices. Some Pennsylvania berries are selling up to 42c per quart, while others range generally from 25@40c. New Jersey berries do not show as good quality as the Pennsylvania and are only bringing about 15@22c per quart. New Jersey huckleberries made their appearance early this week and sold at 25@30c per quart. Blackberries are in good demand at slightly better prices than those prevailing last week. South Carolina stock is selling at 18@20c per quart; Maryland and Delawares, 20@23c, while a few New Jerseys which made their appearance early this week sold up to 25c per quart. Red currants are scarce and wanted at 15@17c. Sour cherries are a trifle higher than last week, best selling up to 12c per pint, with poor and weak at 8@10c. Sweet cherries continue very scarce and when here readily bring $1@1.50 per 6-lb. basket. Gooseberries are in fair demand at 9@12c per quart. Cantaloupes continue in light supply, and are bringing high prices, $5.50 to 6.50 per crate. The season for old apples is over, and none have been offered this week. A few odd lots of new apples have been on the market, but not in sufficient quantities or of quality good enough to quote.

Poultry

The market on live poultry is a trifle lower than last week, but the demand is very active and supplies are cleaning up promptly at quotations. Fowls are selling generally at 33@34c per pound, with an occasional fancy small lot higher. Spring chickens, not Leghorns, are in good demand at 50@55c with those weighing from 1½@2 lbs. each bringing the top prices. Spring chickens of the Leghorn variety are not so desirable with the trade and do not bring as good prices, their value ranging generally from 42@48c per pound as to size. Roosters are about steady at 22@26c; while ducks show very little or no change at 26@30c per pound.

Eggs

Under the light supplies and a good active demand the egg market is a little higher than last week. Strictly fancy, fresh-laid eggs are scarce and such, when here, will bring a premium over quotations. Many of the offerings are showing more or less hot weather defects and these are selling lower according to loss shown. Good current receipts are selling at 37c; firsts, 38½c; Western firsts, 37c; Western extra firsts, 38½c.

BALTIMORE PRODUCE

Baltimore, Md., June 17, 1918.

Produce.—Potatoes, white, Maryland and Pennsylvania, $1.15@1.25 cwt; do., New York, $1.15@1.25. New potatoes, $3.25@4.50 bbl. Asparagus, $1.50@2.25 doz. Beans, green, $1.50@2 basket; do., wax, $1.50@2 basket. Beets, 3@4c bch. Cabbage, new, $1.75@2.50 crate. Cucumbers, $1.50@2.25 crate. Lettuce, 30@50c basket. Onions, yellow, $1.50@1.75 cwt; spring, $1@1.25 per 100 bchs. Peas, $1.25@1.60 basket. Radishes, $1@1.25 basket. Tomatoes, $2.50@4 crate. Rhubarb, $2@3 per 100.

Fruit.—Strawberries, 15@25c qt; Eastern Shore, 15@22c. Cherries, nearby red, 12@14c lb; do white, 9@10c lb. Peaches, $1.75@2.50 carrier. Blackberries, 17@22c qt. Raspberries, red, 12@14c pt. Gooseberries, 7@8c lb.

Butter.—Creamery, western fancy, 44@45c; choice, 43@44c; pound prints, 44@45c; do., firsts, 39@40c. Nearby creamery 40@41c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 34@35c; Eastern Shore and Virginia, 34@35c; Southerns, 33c.

Live Poultry.—Chickens, 30@33c; do., springers, 45@50c; old roosters, 20@22c; old hens, 30@31c lb; ducks, 24@28c; pigeons, 35@40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $28.50@29; standard timothy, $28@28.50; No. 2 timothy, $27@27.50; No. 1 light clover mixed $25@26; No. 2 light clover, $23@25. No. 1 clover mixed, $24@25; No. 2 $20@23. No. 1 straight rye straw, $16.50@17. No. 1 tangled, $15.50@16; wheat straw, $10@13; oats straw, $10@13.

Grains.—Wheat, bag lots, $2.10 bu. Corn, bag lots, white, $1.80 bu; yellow ear corn, $1.58 bu. Standard white oats, 84@85½c; No. 3 white, 84@85c. Rye, No. 2 western, $1.95; bag lots, $1.55@1.65 bu.

PITTSBURGH PRODUCE

Pittsburgh, Pa., June 17, 1918.

Asparagus, southern, $2@3 box; do., home grown, 70@80c per bundle. Beans, green, $1.50@2 hamper. Beets, 40@50c per 100 bchs. Cabbage, $2.50@5 crate. Carrots, new, 25@35c doz. Cucumbers, $3.25@3.50 hamper. Lettuce, southern, $1.25@1.75 hamper; do. leaf, 40@50c doz. Onions, $1@1.25 sack; yellow, 85c@$1. Peas, $2@2.75 hamper. Potatoes, old, $1.25@1.30 sack; do., new, $3.50@4 bbl.; sweet, $1.90@2 hamper. Radishes, 20@30c doz. Rhubarb, 15@20c bundle. Spinach, 30@35c bu. Tomatoes, $1.50@2 flat.

Apples, $5@7.50 bbl. Strawberries, $5@7 crate; do., 23@25c qt. Cherries, $3.25@5 crate.

Live Poultry.—Hens, 33@34c lb; springers, 32@35c; roosters, 20@22c; turkeys, 25@28c; ducks, 28@30c; geese, 20@22c; guinea hens, $1 pr.

Dressed Poultry.—Hens, 36@40c lb; springers, 35@40c; turkeys, 38@40c; ducks, 35@36c; fowls, 38@40c.

Elgin prints, 47@48c; Elgin tubs, 47@47½c; New York cheese, 25@25½c; do., Swiss, 33@34c. Selected eggs, 38@39c; eggs at mark, 36½@37c.

Grain and Hay.—No. 2 yellow ear corn, $1.75@1.80 bu; No. 3 yellow shelled, $1.70@1.75; No. 2 white oats, 82@83c; No. 3 do., 81@81½c bu; standard oats, 81½@82c bu; No. 1 timothy hay, $18.50@19 ton; No. 2 do., $16.50@17.50. No. 1 light mixed, $16.50@17. Rye straw, $11@11.50. Oat straw, $9.50@10. Wheat straw, $9.50@10.

LANCASTER PRODUCE

Lancaster, Pa., June 17, 1918.

Housewives this morning were confronted with 45 cent eggs, the highest price ever asked on local markets for eggs in midsummer. The increase of 5 cents a dozen over the week-end was carried out despite large offerings and still larger reserve supplies on the farms. The demand was slight. The price of new potatoes dropped to 25 cents a half peck. New peas are very scarce.

Butter and Eggs.—Creamery butter, 55c per lb; country butter, 50@55c per lb; fresh eggs, 45c dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.20 each; live chickens, $1.75@2 pair; live old chickens, 35c per lb.

Vegetables and Fruits.—Asparagus, 7@8c per bunch; spinach, 25c ½ pk; potatoes, 8@12c ½ pk; do., 40@75c bu. New potatoes, 15@25c ½ pk; sweet potatoes, 25@30c ½ pk. New peas, 20@25c ½ pk. New beans, 25@30c ½ pk. Lettuce, 15c head. Apples, 35@40c ½ pk. Strawberries, 15@20c box; cherries, 10c box.

Grain Market.—Wheat, $2.10 bu; chicken wheat, $2.10 bu; ear corn, $1.45 bu; rye, $1.60 bu; timothy hay, $24@25 ton; mixed hay, $23@24 ton; wheat straw, $14@15 ton.

YORK PRODUCE MARKET

York, Pa., June 17, 1918.

The past week was an eye-opener for the berry buyers. Instead of continuing the low price developed the latter part of last week, the market turned and a very poor grade of berries sold up to 12c a box, with good ones running up to 15 to 18c a box. Motor trucks figured largely in this change. Others years the grower had to sell at any figure offered and see the other fellow make the money on his berries. This year when the price dropped, trucks were loaded and hundreds of crates were hauled from 10 to 40 miles to other cities.

Eggs.—32@35c per dozen.

Butter.—Country, 45@48c lb; separator, 45@50c lb. Milk, 10c quart.

Poultry.—Hens, 23@24c lb; springers, 40c lb; dressed, 75c@$1.75 each.

Vegetables.—Potatoes, 8@10c ½ pk; 40@60c a bu; lettuce, 3@6c hd. Beets, 5c bch; radishes, 2@3c bch; onions, 3@4c bch; cabbage, 3@10c hd; lima beans, 18c pt; soup beans, 15c pt; corn meal, 10@12c qt; turnips, 20c ½ pk; peas, 25@40c ½ pk.

Fruit.—Apples, 20@40c ½ pk; strawberries, 8@18c box; cherries, 10@18c bx; currants, 10c bx.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.10; rye, $2.25; bran, $2.75 cwt; middlings, $3 cwt.

Wholesale Grain Market.—Wheat, $2.12; corn, $1.35; oats, 80c; rye, $2; bran, out of market; middlings, out of market.

NEW YORK PRODUCE

New York City, June 17, 1918.

Butter higher and firmer. Nearby eggs in light supply and firm. Dressed fowls quiet. Peaches more plentiful and lower. Small fruits and most vegetables selling well.

Butter firmer; receipts, 10,410; creamery higher than extras, 44¾@45¼c; creamery extras (92 score), 44@44¼c; firsts, 42½@43¾c; packing stock, current make, No. 2, 32c.

Cheese firm; receipts, 4,234; state whole milk flats, fresh, special, 23¾@24c; do. average run, 23½c.

Live poultry unsettled; broilers, 45@50c; other prices unquoted. Dressed steady, fowls, 30@36c; turkeys, 25@39c.

Eggs steady; receipts, 14,287. Fresh-gathered extras, 39@40c; fresh-gathered storage packed, firsts, 37@38½c; do., regular packed, extra firsts, 37@38½c; do. firsts, 34½@36½c; state, Pennsylvania and nearby western hennery whites, fine to fancy, 47@48c; state, Pennsylvania and nearby hennery browns, 40@42c; do. gathered browns and mixed colors, 31@38½c.

Vegetables.—Asparagus, fancy, $2.25@3; prime, $1.50@2; beets, per 100 bchs., $1@5; cabbage, per crate, $3@3.50; lettuce, per crate, 75c@$1.50; peas, large, per basket, $1.50@2.25; radishes, per 100 bchs., 50c@$1; scallions, per 100 bchs, $1; spinach, per bbl., 75c@$1.25.

Fruits.—Cherries, 6-lb. basket, 50c@$1.25; strawberries, 16@30c; raspberries, 10@16c pint; huckleberries, 25@30c qt.

CHEESE MARKETS

The Salamanca, N. Y., cheese market on June 13 quoted 23¼ cents. At Watertown, N. Y., June 15, 10,000 boxes of cheese sold at 22⅝ cents.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., June 17, 1918.

Butter.—As usual on Saturday, there was not much wholesale trading, but supplies of desirable grades of both solid-packed creamery and prints were under good control and prices ruled firm.

Western, fresh, solid-packed creamery, extras, 44c; high-scoring goods, 45@46c; extra firsts, 43c; firsts, 41@42c; seconds, 38@40c; sweet creamery, extra, 45c; under grades, 40@44c; nearby prints, extra, 48c; jobbing sales of fancy brands, 49@51c; fair to good, 41@46c; garlicky, 35@38c.

Receipts, as compiled by the Bureau of Markets, 3,827 tubs of butter and 6,761 cases of eggs.

NEW YORK HAY AND GRAIN

New York City, June 17, 1918.

Feed.—There is only a quiet trade in mill feed at present and prices are irregular and sensitive. Wheat feed is very scarce, and feeders have to confine their purchases to the numerous substitutes which are offered. Forced purchases of substitutes with wheat feed have been prohibited. Quotations (prompt Western shipment); rye middlings, $53; standard middlings, $37.65 per ton; oat feed, $21 per ton; barley feed, nominal; linseed meal, per ton, $50; corn feed meal, $46 per ton; velvet bean meal, $42.50 per ton; white hominy feed, $52 per ton; yellow, $51.

Hay and Straw.—There is no quotable change in the hay market today, tho the feeling is easy thruout and our outside quotations rule extreme. Over sixty cars of hay are in the New York Central 33d street yard, and, with trade very slow, this quantity is acting as a damper on the market and the situation is in buyers' favor thruout. A fair clean-up in Brooklyn, with prices almost on a par with 33d street. Outside track delivery points have a liberal offering with no trade. Rye straw steady, with bulk of sales of No. 1 long rye at $18.

Hay.—No. 1, prime, $25@30; No. 2, $23@26; fancy clover mixed, $24@26.

Straw.—No. 1 rye, $17@18.

Corn.—No. 3, $1.66.

Oats.—No. 2, white, 86½@87c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 17, 1918.

Beef Cattle.—The market ruled firm on steers, bulls and cows demand for which absorbed the limited offerings. Callves were slightly higher, demand being good.

Steers, good to choice, $17@18; fair to good, $15.50@17; common to fair, $13@15.50; bulls, fair to good, $12@14; common to fair, $9@12; cows, fat, per lb., choice, 10½@12½c; fair to good, per lb., 8@10c; bologna cattle, choice, 5½@7½c; common, 4@5c; calves, extra choice, $16.50@17; fair to good, $18@18.50; common, $10@13; Tennessee, choice, $15@17; other southern, $9@14.

Sheep and Lambs.—There was a fair inquiry for both sheep and lambs, and values were well maintained under light offerings of desirable stock. There was some ordinary stock around, however, which was quiet and weak to sell.

Sheep, sheared, wethers, extras, $13.50@14; good to choice, $12.50@13; medium, $10@11; common, $6@8; ewes, heavy, fat, $11@12; lambs, spring, $21@22.

Hogs.—Receipts were only moderate and the market ruled firm with demand fairly active. There was some complaint of stock being delayed in transit. Quotations for best western, $19.

City Dressed Stock.—Steers, heifers, and cows were in good request and the market ruled firm under light offerings. Calves, sheep and lambs sold fairly and ruled firm. Hogs were quiet and weaker.

Steers, 24@29c; heifers, 22@25c; cows, 18@24c; calves, 26@27c; southern and barnyards, 16@20c; country dressed, 21@23c; sheep, choice, 27@28c; lambs, winter, 32@33c; do. spring, 36@37c; hogs, 25¼c.

LIVE STOCK MARKETS

Lancaster, Pa., June 17.—Cattle.—Receipts, 1,410, against 1,215 last Monday; while market was sluggish, most of the animals were sold; prices from 25@50c lower; good to prime fat steers, $14@15.50; medium to good steers, $13.25@14.25; common to medium, $11@12.75; good to prime fat bulls, $11@12.75; medium to good bulls, $9.60@10.60; good to prime fat cows, $9@10.25; medium to good cows, $8.25@8.90; common to medium cows, $7@8; common grade bologna bulls, $5@6; best grade calves, 14@15c per pound; plain grade calves, 10@12c per pound.

Hogs.—Receipts, 162; market steady; prices trifle lower; best grades, $17.75@18; roughs, $14.50@16.

New York City, June 17.—Beeves.—Receipts, 2,540; weak; steers, $12@18; bulls, $9@14.25; cows, $5.50@14.

Calves.—Receipts, 6,800; steady; veals, $16@18.50; culls, $12@14; grassers and skim-milk calves, $12@14; yearlings, $8@9.

Sheep and Lambs.—Receipts, 5,760; steady; sheep, $10@14; common to fair yearlings, $13.50@16; lambs, $20@22.

Hogs.—Receipts, 4,560; steady; heavy to medium, $17.50@17.75; roughs, $15.50.

Pittsburgh, Pa., June 17.—Cattle lower, supply, 120 cars; prime, $17@17.25.

Sheep.—Slow; supply, 15 double decks; prime wethers, $13.25@13.75; culls and common, $5@8; lambs, $10@17.25; veal calves, $17@18.

Hogs.—Higher; receipts, 30 double decks; prime heavies, $16.75@16.80; heavy yorkers, light yorkers and pigs, $17.40@17.50; roughs, $14@15.25.

East Buffalo, N. Y., June 17.—Cattle.—Receipts, 5,200; good; strong; grassers slow; prime steers, $17.75@18.35; shipping steers, $17@17.50; butchers, $12@16.75; yearlings, $13.50@16.75; heifers, $10@14.50; cows, $6@13.50; bulls, $7.50@12.75; stockers and feeders, $7.50@11; fresh cows and springers steady, $65@150.

Calves.—Receipts, 2,230; steady, $7@18.50.

Hogs.—Receipts, 7,200; strong, heavy, $17.45@17.60; mixed and yorkers, $17.50@17.60; light yorkers, $17.60@17.75; pigs, $17.75@18; roughs, $15.25@15.50; stags, $10@12.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., June 17, 1918.

Baled Hay and Straw.—Receipts, 36 tons of hay. Hay was in small supply and the market showed no important change. Straw was in small supply, with moderate but ample offerings at former rates. Quotations:

Timothy hay, according to location—No. 1 large bales, $30; No. 1, small bales, $30; No. 2, $27@28; No. 3, $22@24; sample, $15@18; no grade, $10@15; clover-mixed hay, light mixed, $27@28; No. 1 do., $25.50@26.50; No. 2, do., $18@20.

Straw.—No. 1 straight rye, $18.50@19; No. 2 do., $17.50@18; No. 1 tangled rye, $16.50@17; No. 2 do. $15.50@16; No. 1 wheat straw, $16.50; No. 2 do. $15.50; No. 1 oat straw, $16.50; No. 2 do. $15.50.

Corn.—No. 2 yellow, $1.70@1.72.

Oats.—No. 2 white, 85@85½c.

NEW YORK MILK MARKET

New York City, N. Y., June 17, 1918.

Supply considerably exceeds demand. While no definite requests have been made by the interests involved toward getting together behind the Federal Milk Commission, it is generally expected that the July rates will be made by the commission and accepted by all. Present rates to the producer of Grade B in the first district are $1.80 a hundred for 3 percent milk; $2.04, or approximately 4.33 cents a quart for 3.6 percent; and $2.20 for 4 percent.

Receipts of milk and cream in 40-quart cans for week ending June 17 were as follows:

Railroad	Milk	Cream
Erie	68,742	8,850
Susquehanna	6,177	63
West Shore	12,725	1,330
Lackawanna	72,210	3,211
N. Y. Central (long haul)	145,917	5,234
Ontario	44,028	6,691
Lehigh Valley	56,812	3,711
New Haven	6,110	110
Pennsylvania	12,210	310
Other sources	8,110	285
Totals	402,541	24,795
Same week last year	397,955	26,620

Aunt Peggy's Talks

Wheat Substitutes

It would be interesting to know to what extent and in what way farm women are meeting the necessity of using wheat substitutes, since Mr. Hoover says that in spite of a good wheat crop we will be compelled to continue our present program for conserving wheat. We must be sure that what we use will fully nourish the body. It is easy enough to "fill up" on material but that material must furnish all that the body needs if we are to keep in health. Children especially need care in this direction. Altho the Scotch people have for generations made oatmeal their staff of life, we have used it only occasionally as a breakfast food. Here are two good recipes:

Oat Meal Pancakes.—1 cup cooked oatmeal, 1 cup white cornmeal, 1½ cups sweet milk, 2 eggs, 1 tablespoonful butter, 1 teaspoonful salt and 3 teaspoonfuls baking powder. Rub oatmeal until smooth, add milk and yolk of eggs and other ingredients. Beat the whites of eggs stiffly and add. Bake as other pancakes.

Oatmeal Hermits.—1 scant cup of sugar, ½ cup sour milk, 1 egg, ½ cup raisins, ½ teaspoonful soda, 1 cup rolled oats, 1 cup flour (any kind) and a little salt. Drop from spoon on greased pans and bake in hot oven.

Sour Cherries

In using sour, or pie cherries as they are commonly called in some localities, stone them and cover with cold water. Let them stand in a cool place over night, drain and add fresh water and sugar and can or preserve by usual method. The juice can also be heated and canned to be used as a drink or for fruit sauces.

This method takes away much of the acid which does not agree with many people. Cherries are nice combined with either strawberries or pineapple.

A Good Marmalade

Take two parts of pineapple to one part rhubarb. Put pineapple thru the food chopper and cook until tender. Cut rhubarb into small pieces, scald and drain, add to pineapple. Use two-thirds amount sugar (by weight) as of fruit. Cook until clear and put in jars or glasses, and seal.—Peggy Norwood.

USING THE BROKEN EGGS

On many farms where poultry is kept in large numbers, economical using of cracked or broken or otherwise unmerchantable eggs is frequently quite a problem. This is particularly true if omelets and fried or scrambled eggs are not liked, as in the writer's family, where plain boiled ones are the only ones cared for. (Editor's Note.—Since it is quite the fashion now to drill ourselves out of as many of our old food likes and dislikes as are simply notions without any other reason than habit, perhaps your family can patriotically adjust their egg likes and dislikes.) Last fall an accident left us with four and a half dozen broken eggs on our hands, and it was necessary to find some way to use them at home—and eggs were bringing 50 cents then, too. And later, when they were even higher, about three dozen were broken. Only a few could be separated, so we had only a pint of whites to several quarts of mixed yolks and whites.

The first accident happened about a week before our fair. I had not intended to exhibit any baked products, but thinking that I might be able to recoup on the breakage, I made quite a number of entries that required the use of eggs, and won about $6 in premiums. And still I had a big yellow bowlful of the egg mixture left in the cellar that would surely spoil if something were not done with it promptly.

I recalled that sugar is a preservative of fruits if used in sufficient quantity. So I thought that I would try it on the eggs. I measured them by tablespoonfuls, estimating that two tablespoonfuls would equal one egg. Then I measured out a quantity of sugar nearly equal in bulk to the bowl of eggs, so that in using the eggs later I would know how much sugar and eggs I would be getting when I dipped out any of the mixture to use in cooking. I beat the eggs and sugar thoroly together. Then, to keep the mixture as cool as possible, I spread a newspaper on the cellar floor, and set the bowl thereon, covering it closely with an inverted pan. Every time I used from it I stirred it up well from the bottom. And it kept perfectly until Christmas, when the last was used. Not a particle of mold had formed on it, and the last was as good as the first.

Since then, if I have two or three broken eggs, I put them in a bowl or cup and stir in an equal amount of sugar, and they keep in excellent condition for several days, where formerly when I used to pour in a little water to keep an egg from drying out before I could use it. Sometimes it would spoil in hot weather.

Cracked eggs may be boiled as successfully as whole ones if they are wrapped in a piece of waxed paper. Adding salt to the water will also prevent the contents from leaking out, but I prefer the waxed paper method, as I like to conserve even the salt supply in these days of transportation shortage.—Mrs. M. G. Feint, Tompkins Co., N. Y.

(Editor's Note.—We think that you would have had no trouble to sell your broken and cracked eggs to the bakeries in Ithaca, and doubtless they would also have been glad to get the mixed whites and yolks at a reasonable price somewhat under the market price for seconds. However, your method was a very good one for saving them for home use.)

Apricot and Cocoanut Pudding

Ingredients.—2 cups milk, 4½ tablespoons cornstarch, 4 eggs, 4 tablespoons sugar, 1 can apricots, 3 tablespoons chopped nut meats, ½ cup grated cocoanut. Drain the apricots and rub thru sieve, put ½ this puree into a glass dish. Put the milk and cornstarch into a double boiler, stir gently until boiling point is reached, add beaten yolks of eggs and sugar and boil about 8 minutes. Take from fire and pour into dish, add remaining apricot mixture and whites of eggs beaten stiff. Stir occasionally until almost cold. Pour into glass dish with rest of apricot, and let cool slowly. Decorate with nuts and cocoanut. Serve very cold.

Measure your wheat savings by the Golden Rule.

The U-Boats are wasting some of our food; don't be a U-Boat.

HILLSCROFT FARMS
Closing Out Sale
the entire herd of 150 Holsteins as well as the beautiful 500 Acre Farm
Owned by George R. Hill to be sold at auction
Towanda, Pa., July 1-2, 1918

Mr. Hill's herd of Pure-bred Holsteins represents several years' work in careful selection and breeding and is one of the very best herds in the country. In looking over the pedigrees we find—

A 33-lb. cow.

A 27-lb. two-year-old and two of her daughters.

Three daughters of King of the Pontiacs, two of them with records of 26-lb. and 25-lb.

Two daughters of a 30-lb. cow, one has 20-lb. at 3 years.

A 20-lb. two-year-old daughter of a 31-lb. cow.

Three daughters of It, one of them from a 33-lb. daughter of King of the Pontiacs has a record of 19.99-lbs. at two years.

Forty-six A. R. O. cows in the herd, their 7 day records ranging as high as 33-lb.

Fifty are sired by Judge Hengerveld De Kol, the best son of Hengerveld De Kol.

Twenty-six are sired by Towanda Spring Farm Plum Copia—a son of the 44-lb. bull—Spring Farm Pontiac Cornucopia and De Kol Plum Copia—33.26-lb.

Most of these are from daughters of Judge Hengerveld De Kol. Eighty-five are from A. R. O. dams.

A. R. O. daughters of King Hengerveld Segis, Tidy Abbekerk Prince, Johanna De Kol 2d's Prince, Fairview Korndyke Lad, King Pontiac Calypso, Judge Hengerveld De Kol, King of the Pontiacs, It, etc.

All animals over six months of age will be tuberculin tested.

The Farm which will also be sold

consists of 500 acres of the most fertile land in the state. About half of it is perfectly level Genesee Silt soil, all of which is worked in large fields with tractors. Remarkably large crops of Wheat, Rye, Barley, Corn and Tobacco are raised. There are now about 80 acres planted to corn, forty each in wheat and barley and twenty-two acres have been set to Tobacco which nearly always gives a large yield. It has already been contracted for at $.35 per lb.

The buildings which are of the most modern type and construction are situated on a rise of ground overlooking the fields. There is a large stable with stanchions for 103 head, bull pens, maternity pens, etc. James Steel Stalls thruout. Large silos. New sanitary calf barn with room for fifty calves. Horse barn, four single houses and one double. Electric lights in all buildings. Pastures are on elevated land and are sown with special pasture grass. The farm is bounded on the north by the Susquehanna River and a fine large stream runs thru the center of the farm.

The farm is located within sight of Towanda, the County Seat of Bradford County, and is about a five minutes drive from town. There is also a large town house of 22 rooms and three baths on a 2 acre lot located on the most fashionable street in Towanda. This will make an ideal place for a man of means who desires to get back to the soil. All the advantages of country life but with the conveniences of the city.

A wonderful opportunity to buy a Farm and a Herd of good Holsteins. Dont Miss It.

For Catalog or other information write to

GEORGE R. HILL,
Owner, Towanda, Pa.
or
LIVERPOOL SALE & PEDIGREE CO.
Sale Managers Liverpool N. Y.

The Master Mechanic's Story

By Frank H. Spearman

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(Continued from last week)

Delaroo came into the service as a roundhouse sweeper; then Neighbor, after a long time, put him at wiping. Delaroo said nothing but wiped for years and years, and was in a fair way to become liked, when, instead, he became one morning pitted with umbilical vesicles, and the doctors, with Delaroo's brevity, said smallpox. The boarding housekeeper threw him out bodily and at once. Having no better place to go, Delaroo wandered into Steve Boyer's saloon, where he was generally welcome. Steve, however, pointed a hospitable gun at him and suggested his getting away immediately from the front end of it. Delaroo went from there to the roundhouse with his umbilicals, and asked Neighbor what a man with the smallpox ought to do with it. Neighbor wouldn't run, not even from the smallpox—but he told Delaroo what it meant to get the smallpox started in the roundhouse, and Delaroo wandered quietly away from the depot grounds, a pretty sick man then, staggered up the yards, and crawled stupidly into a box car to die without embarrassing anybody.

By some hook or crook, nobody to this day knows how, that car was switched on to Maje Sampson's train when it was made up that day for the West. Maybe it was done as a trick to scare the wind-bag engineer. If so, the idea was successful. When the hind-end brakeman at the second stop came forward and reported a tramp with the smallpox in the empty box car, Maje was angry. But his curiosity gradually got the upper hand. This man might be, by some distant chance, he reflected, a P. Q. W. of A., or a frater, or a fellow, or a knight or something like—and when they stopped again to throw off crackers and beer and catsup, Maje went back and entered the infected car like a lion-tamer to try lodge signals and things on him. Maje advanced and gave the countersign. It was not cordially received. He tried another and another—and another; his passes were lost in the air. The smallpox man appeared totally unable to come back at Maje with anything. He was not only delirious, but by this time so frightfully broken out that Maje couldn't have touched a sound spot with a Masonic signal of distress. Finally the venturesome engineer walked closer into the dark corner where the sick man lay—and by Heaven! it was the Indian wiper, Delaroo.

When Maje Sampson got back into the cab he could not speak—at least not for publication. He was tearing mad and sputtered like a safety. He gathered up his cushion and a water bottle and a bottle that would explode if water touched it, and crawled with his plunder into the box car. He straightened Delaroo up and out and gave him a drink and by way of sanitary precaution took one personally, for he himself had never had the smallpox—but once. When he had done this little for Delaroo he finished his run and came back to the Bend hauling his pest-house box car. The fireman quit the cab immediately after Maje exposed himself; the conductor communicated with him only by signals. The Anderson operator wired ahead that Maje Sampson was bringing back a man with smallpox on Thirty, and when Maje, bulging out of the 264 cab, pulled into the division yard nobody would come within a mile of him. He set out the box car below the stock pens, crosslots from his house up on the hill, and, not being able to get advice from anybody else, went home to consult Martie.

Tho there was a great many women in Medicine Bend, Maje Sampson looked to but one, Martie, the little washed-out woman up at Sampson's—wife, mother, nurse, cook, slave—Martie.

No particular color hair; no particular color eyes; no particular color or gown; no particular cut to it. A plain bit of a woman, mother of six boys, large and small, and wife of a great big wind-bag engineer, big as three of her by actual measurement. By the time Maje had taken counsel and walked down town prominent business men were fending off his approach with shotguns. The city marshal from behind a bomb-proof asked what he was going to do with his patient, and Maje retorted he was going to take him home. He wasn't a M. R. W. of T. nor a P. S. G. of W. E., but he was a roundhouse man, and between Maje and a railroad man, a wiper even, there was a bond stronger than grip or password or jolly business of any kind. The other things Maje, without realizing it, merely played at; but as to the railroad lay—if a railroad man was the right sort he could borrow anything the big fellow had, money, plug tobacco, pipe, water bottle, strong bottle, it made no odds what. And, on the other hand, Maje wouldn't hesitate to borrow any or all of these things in return; the railroad man who got ahead of Maje Sampson in this respect had claims to be considered a past grand in the business.

The doughty engineer lifted and dragged and hauled Delaroo home with him. If there was no hospital, Martie had said, no pest house, no nothing, just bring him home. They had all had the smallpox up at Sampson's except the baby, and the doctor had said lately the baby appeared to need something. They had really everything up at Sampson's sooner or later; measles, diphtheria, croup, everything on earth except money. And Martie Sampson, with the washing and mending and scrubbing and cooking, nursed the outcast wiper thru his smallpox. The baby took it, of course, and Martie nursed the baby thru and went on just the same as before—washing, mending, cooking, scrubbing. Delaroo when he got well went to firing; Neighbor offered the job as a kind of consolation prize; and he went to firing on the 264 for Maje Sampson.

It was then that Maje took Delaroo fairly in hand and showed him the unspeakable folly of trying to get thru the world without the comradeship and benefits of the B. S. L.'s of U., and the fraters of the order of the double-barrelled star of MacDuff. Delaroo caught a good deal of it on the sidings, where they lay most of their time dodging first-class trains; and evenings when they got in from their runs Delaroo, having nowhere else to go, used to wander, after supper, up to Sampson's. At Sampson's he would sit in the shade of the lamp and smoke while Maje, in his shirt-sleeves, held forth on the benevolent orders, and one boy crawled thru the bowels of the organ and another pulled off the tablecloth—Delaroo always saving the lamp—and a third harassed the dog, and a fourth stuck pins in a fifth—and Martie, sitting on the dim side of the shade, so the operation would not appear too glaring, mended at Maje's mammoth trousers.

Delaroo would sit and listen to Maje and watch the heave of the organ with the boy, and the current of the tablecloth with the lamp, and the quarter in which the dog was chewing the baby, and watch Martie's perpetual-motion fingers for a whole evening, and go back to the boarding-house without passing a word with anybody on earth, he was that silent.

In this way the big, bluffing engineer gradually worked Delaroo into all the secret benevolent orders in Medicine Bend—that meant pretty much every one on earth. There arose always, however, in connection with the initiations of Delaroo one hitch; he never seemed quite to know whom he wanted to leave his insurance money to. He could go the most complicated catechism without a hitch every time, for Maje spent weeks on the sidings drilling him, until it came to naming the beneficiary; there he stuck. Nobody could get out of him to whom he wanted his money to go.

Had he no relations back in the mountains? Nobody up in the Spider Country? No wives or daughters or fathers or mothers or friends or anything? Delaroo always shook his head. If they persisted he shook his head. Maje Sampson, sitting after supper, would ask, and Martie, when the dishes were side-tracked, would begin to sew and listen, and Delaroo, of course, would listen, but never by chance would he answer; not even when Maje tried to explain how it bore on 16 to 1. He declined to discuss any ratio or to name any beneficiary whatsoever. The right honorable recording secretaries fumed and denounced it as irregular, and Maje Sampson wore holes in his elbows gesticulating, but in the matter of distributing his personal share of the unearned increment, Delaroo expressed no preference whatsoever. He paid his dues; he made his passes; he sat in his place, what more could be required? If they put him in a post of honor he filled it with a silent dignity. If they set him to guard the outer portal he guarded well; it was perilous rather for a visting frater or even a local brother to try getting past Delaroo if he was rusty in the ritual. Not Maje Sampson himself could work the outer guard without the countersign; if he forgot it in the hurry of getting to lodge he had to cool his heels in the outer air till it came back; Delaroo was pitiless.

In the cab he was as taciturn as he was in the lodge or under the kerosene lamp at Sampson's; he just listened. But his firing was above any man's who ever stoked the 264. Delaroo made more steam on less coal than any man in the roundhouse. Neighbor began to hold him up as a model for the division, and the boys found that the way to jolly Neighbor was to say nice things about Delaroo. The head of the Motive Power would brighten out of a sulk at the mention of Delaroo's name, and he finally fixed up a surprise for the Indian man. One night after Delaroo came in, Neighbor, in the bluff way he liked to use in promoting a man, told Delaroo he could have an engine; a good one, one of the K. class; as much finer a machine than the old 264 as Duffy's chronometer was than a prize package watch. Delaroo never said ay, yes, or no; he merely listened.

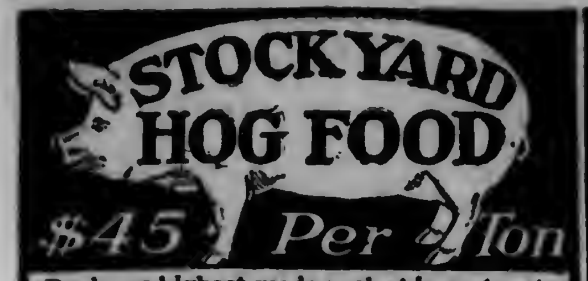
But if Delaroo treated the proposal coolly, not so Maje Sampson; when the news of the offer reached him, Maje went into an unaccountable flutter. He acted at first exactly as if he wanted to hold his man back, which was dead against cab ethics. Finally he assented, but his cheeks went flabby and his eyes hollow, and he showed more worry than his creditors. Nobody understood it, yet there was evidently something on, and the Major's anxiety increased until Delaroo, the Indian fireman and knight companion of the Ancient Order of Druids and Fluids, completely took Neighbor's breadth by declining the new engine. That was a West End wonder. He said if it made no odds he would stay on the 264. The men all wondered; then something new came up and the thing was forgotten. Maje Sampson's cheeks filled out again, he regained his usual nerve, and swore on the money question harder than ever.

After that it was pretty generally understood that Delaroo and Maje Sampson and the 264 were fixtures. Neighbor never gave any one a chance to decline an engine more than once. The boys all knew, if Delaroo didn't, that he would be firing a long time after throwing that chance by; and he was.

The combination came to be regarded as eternal. When the sloppy 264 hove in sight, little Delaroo and big Maje Sampson were known to be behind the boiler pounding up and down the mountains, up and down, year in and year out. Big engines came into the division and bigger. All the time the division was crowding on the Motive Power and putting in the mammoth types, until, when the 264 was stalled alongside a consolidated, or a mogul skyscraper, she looked like an ancient beer glass set next an imported stein.

With the 264, when the 800 or the 1100 class were concerned, it was simply a case of keep out of our way or get smashed, Maje Sampson or no Maje Sampson, money question or no money question. Benevolent benefits fraternally proposed or anteroom signals confidentially put forth by the bald-headed 264 were of no sort of consequence with the modern giants that pulled a thousand tons in a string up a two-thousand-foot grade at better than twenty miles an hour. It was a clear yet cold, "You old tub, get out of our way, will you?" And the fast runners, like Moore and Hawksworth and Mullen and the Crowleys, Tim and Syme, had about as much consideration for Maje and his financial theories as their machines had for his machine.

(Concluded next week)



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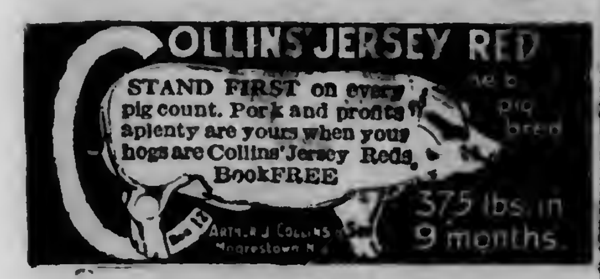
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HAMPSHIRES Most any age, free circular just out. Also registered Guernsey Bulls, from tuberculous free herd.
Locust Lawn Farm
Bird-In-Hand
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O. I. C. SWINE Big Type, Stock all ages, from the herd that won premier and exhibitor at every fair shown and all champions on sows, also grand champion boar at Mich. and Ohio State Fairs. We breed the best. We sell what we breed. Every pig shipped on approval. Get our catalogue. Reg. Free. Write your wants.
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Spring pigs either sex, pairs and trios not akin from large mature sows of best breeding. Twenty-five sows in our herd. Write for circular giving further description and prices. It's free.
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Reg. P. Chinas, Berkshires, C. Whites. Large strain, all ages, mated not akin. 8 weeks pigs, bred sows, service boars, Collie and Beagle dogs. Grade Guernsey calves and poultry.
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PIGS shipped C. O. D. 100 O. I. C. and Large Yorkshire cross, 100 Berkshire and O. I. C. cross, 6 weeks old $10 each. 50 shoats 12 weeks old $15 each. These pigs are from large growthy stock.
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70 Reg. Chester White Spring Pigs
All ages. Can furnish pair or trio. Not akin.
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For Chester Whites and Hampshire Sheep write or come and see ours, we breed only the best.
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Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Mule Colt Scours.—I have mule colt, six weeks old, that is troubled with scours. He is in nice flesh, suffers no pain and the only symptom of sickness is this looseness of bowels. His mother is fed corn, oats and mixed hay and runs on grass part of the time. The mare is worked some. J. L. H., Hayden, Md.—Give colt one dram camphorated tincture of opium at a dose, 3 times a day, or give 10 grains salol at dose, 3 times a day. A change of food would help regulate the milk of mother. Avoid overheating the mare.

Infected Udder.—I am anxious to know what ails my cow. She came fresh March last, seemed to keep healthy until few weeks ago, then one-quarter of bag caked and she gave less milk. Stringy milk first came from this quarter, later bloody milk came and very little of it. It was not long before the other hind quarter blocked up and now she gives very little milk from either hind quarters. Our local veterinarian examined her and he is inclined to believe her case incurable. What do you advise me to do with her? F. S. E., East Freetown, N. Y.—This cow will prove unprofitable for dairy purposes and unless she gives enough milk from the two sound quarters to pay for board and care, she should be dried and fattened. Too many such diseased cows are kept at a loss too long. Farmers should promptly unload all such unprofitable animals. Udder ailments of this kind are usually curable only if properly and promptly treated. Apply iodine ointment once daily, to diseased quarters.

Chronic Cough.—Please tell me what is wrong with my cow and what can be done for her? She has dry hacking cough and when she coughs her whole body jerks. When these spells come on she pokes her head out as if she was distressed. Lately she has had watery discharge from nostrils, but she shows no other symptom of sickness and her appetite is good. Do I run any risk in selling her? Is her milk fit to use? M. J., Akersville, Pa.—If you dispose of her, call the attention of buyer to her cough. This relieves you of responsibility. Her milk is doubtless fit for food. Apply equal parts turpentine, aqua ammonia and raw linseed oil to throat, every day or two. If glands of throat are enlarged, apply iodine ointment to bunches daily.

Rheumatism.—One of our work horses seems to travel stiff and sore whenever we have stormy weather, but when the weather is fine he travels sound. I have treated him with medicine that our local veterinarian gave me, but he remains much the same. What line of treatment do you recommend? A. J. K., Dover Plains, N. Y.—As drugs seem to have failed, I advise your veterinarian to give him a few doses of mixed bacterins. I believe such treatment will help the horse.

Shoulder Boils.—I have a six-year-old mare troubled with boils on both shoulders and on top of neck. W. S. B., South New Berlin, N. Y.—First of all, the collar should fit, it should be kept clean, the hair should be clipped off short on upper part of neck where collar rests, and the skin should be thoroly washed with soap and water. Then apply the following lotion which is made by dissolving ¼ pound acetate of lead, three ounces of sulphate of zinc and three ounces of tannic acid. These applications should be made three or four times a day. Give her one dram potassium iodine at a dose in feed or drinking water, twice a day for 20 days. Then give her three drams of Fowler's solution at a dose in feed or water, three times a day for 30 days.

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Do you know that the chicks hatched by your hens cost you 22 cents each?

They do. Let us prove it to you.

We will hatch your eggs at 5c per chick hatched, and for less if you get a poor hatch.

We furnish container for eggs to be sent us and boxes for your chicks. Both sent parcel post.

Our Capacity—Two-thirds of a Million or

40 Tons of Eggs Every Three Weeks

We also sell purebred Barred Rock, White Rock, White Leghorn, Brown Leghorn, Buff Leghorn, White Wyandotte, Rhode Island Red, Black Minorca and Ancona chicks. Lowest Prices. Safe Delivery and Satisfaction guaranteed. Send for Catalog.

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for June, July and Aug. delivery. Eight varieties, 8c each and up. Our 9th year fine booklet free. Order now from the old reliable plant. Shipped by Parcel-Post. Charges prepaid to your Post Office. Only $1.00 required with order.
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Chicks 20c each, $18 per 100. Silver, White and Columbian Wyandottes, Rocks and Reds. Pekin and Rouen Ducklings 35c each, $30 per 100.
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Day Old Chicks Broilers 9c, W. & B. Leg. 10c. R. I. Reds & Brd. Rks. 12c. Buff Rks & Orp. 14c. No orders for less than 25 chicks. SUNNY SIDE POULTRY FARMS & HATCHERY, BLANCHESTER, OHIO.

PARADISE POULTRY FARM Breeding of heavy laying Poultry. Trap Nested S. C. White Leghorns Bar. Ply. Rocks, 200-Egg Strain. Rhode Island Reds. Day-old chicks. Hatching Eggs and Stock for Sale. Our 1918 Circular Free. Box B, PARADISE, PA.

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SPECIAL PRICES on chicks S. C. W. Leghorn $10; Barred Rocks $12.50; Reds $13 per 100. Live arrival and quality guaranteed. Shipment via Parcel Post.
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White Leghorn Pullets and Yearling Hens
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Indian Runner Ducks Fawn and White. Eggs 12 for $1.00. Breeders $1.50 each.
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Write what you have and price.
Philadelphia Pet Shop, 22 N. 9th St., Phila., Pa.

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W. C. WHITE COUDERSPORT, PENNA.

Day-Old utility Barred Rock chicks for sale $12 per hundred for June.
H. W. BECK, Box 142, MILLERSTOWN, PA.

Zanesville, Ohio. Feb. 25, 1918
Enclosed find check for my Poland China advertisement in *Penna. Farmer*. It has produced most gratifying results with satisfactory prices and shipments into a half-dozen states. You have well earned the price for this advertising service and I will soon be with you again.
C. S. EPPLEY.

Winterthur Farms
Offer For Sale Sons of
UNEEDA KING ALCARTRA No. 182646
A 33-Pound Bull.

He traces to King Segis through his two best sons; Johanna Mc Kinley Segis with a 40-lb. dam and King Segis Pontiac with a 37.20-lb. dam.

No. 13—Born November 28th, 1917. He will be ready for light service in September. He is about four-fifths black and large for his age. His back is perfectly straight and his body is deep with well-sprung ribs. His dams average:

4 nearest dams	7 days	28.07
10 " "	"	29.28
13 " "	"	28.90

His dam, Miss Greenwood Concordia Pietje 256917, has a 26.40-lb. three-year-old record. Her dam and maternal granddam, respectively, have 22 and 27-lb. records. We have in our herd 17 of her sisters by the same sire, including two with records above 34 lbs. and one with a 31.81-lb. record, all as three-year-olds.

No. 22—Born January 23, 1918. He is about four-fifths black and is large and typy. His back is straight and he is of good conformation in every particular. His dam, Veeman Prilly Segis 243953, recently completed a 22.78-lb. (7 day) and 92.60-lb. (30 days) record. This record should be materially increased at her next freshening. She is a daughter of our senior herd sire, Sir Inka Prilly Segis, who is a son of King Segis and Inka Prilly, a 30-lb. granddaughter of the noted foundation cow Prilly. She traces thrice to King Segis. We have in our herd 70 young females sired by Sir Inka Prilly Segis, the first of which will freshen in 1918.

We have other sons of Uneeda King Alcartra for sale.

Full particulars including pedigrees and photographs will be furnished on application to the

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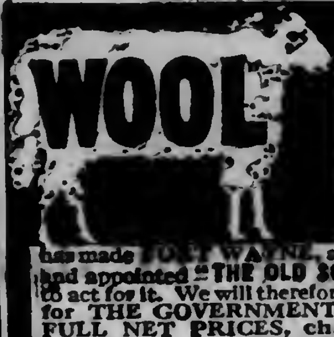

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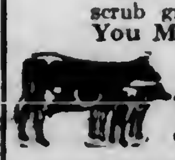

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Holsteins we have been completely sold out for the last 8 months. Just now we have a few very nice registered bull calves, sturdy and well marked. Our prices are always fair.
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Registered Holstein bull calves from A. R. O. dams and a 30 lb. sire. Write for prices, pictures and pedigrees.
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Registered Holstein and Guernsey bulls from calves to serviceable age. 250 animals in the herd.
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That's the day we tell Uncle Sam just how hard we want to win this war. That's the day our government has officially set for us to purchase War Savings Stamps.

On June 28th every man, woman and child in the United States will be called upon to pledge his or her full quota of War Savings Stamp purchases for 1918.

You will be expected to pledge the **full** amount that you can afford—no more—but by the same token, no less.

In every state, county, city, town and village the War Savings Committees are preparing for this big patriotic rally of June 28th. Unless you have already bought War Savings Stamps to the $1,000 limit, get busy with paper and pencil and figure out the **utmost** you can do.

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They pay you 4% interest compounded quarterly. They **can't** go below par. You can get back **every dollar** you put into War Savings Stamps **any time you need it.** You can turn them in at the Post Office any time for their full value plus interest.

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What are you lending?

National War Savings Committee, Washington

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ESTABLISHED 1880
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Vol. 43—No. 26. PHILADELPHIA, PA., SATURDAY, JUNE 29, 75 Cents per Year

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Father & Co.---A Farm Partnership

Organized For Business Efficiency and Real Home Making

By SYLVAN D. EINSTEIN

CAPE MAY CO., N. J.

I want to direct attention to a farm where the family is organized as a company. Perhaps rather fancifully, but nevertheless practically, the father is president and manager, the mother is vice-president and the sons and daughters are directors.

I happened to visit the farm just at the time the older boy had arrived home from high school. It was but a few moments before he had donned his overalls and was on the job; which, on this afternoon, happened to be putting on a load of hay for the morrow's delivery. There was no direct command from father to boy to hitch up this or that team, place the wagon this or that way, load from this or that stack. Instead, there was a brief discussion with the son as to which team to use, how to place the wagon and so forth. It is in the difference of these two methods used, in many cases, that will determine whether the boy is going to remain on the farm. It will also determine how well the boy will do his work. In the case of this father and son, they are, indirectly, partners. The boy is efficient and enjoys his work because he is a part of it. Farm work is not drudgery for him. Partnership on this farm does not end in the planning of the farm work; it also takes the form of actual ownership of live stock and some of the crops grown by the children.

Co-operative Ownership

My knowledge of this phase of partnership comes about thru a younger son, still attending the public school and taking a course in the Vocational School of the county. It was after we had finished our study in agriculture for the day that Henry invited me to come and see his pigs. I gladly accepted his invitation and together we walked to the farm. I placed myself at his disposal and was led thru the plant of this successful family company. When we reached the pig pen, I could see the youngster fill up with pride, and his eyes glistened as he remarked, "Them's my pigs".

Yes, "them" were his pigs! Them were a part of a great network of ownership and partnership on this farm, which is going to hold this boy fast to the country; which is going to save the father from being deserted as soon as his boy begins to reach that state of independence in life, common to all boys. "That one is Mother's", he remarked, pointing to another pig in the same pen. "I take care of it for her".

He had his plans made for the disposal of the pigs. They were to be butchered in March. Some of the money would have to be invested in seed and fertilizer for his crop the coming season. Part of it had to go as payment for feed and the balance would be used to buy Thrift Stamps. The feed bill, he remarked, would not be high, because he had grown his own corn last summer, in partnership with his older brother. At this point I learned that father was the general banker for the boys. He had sold the boys the seed and fertilizer which was to be paid for after the crop was harvested. Henry planted one-half acre of early potatoes. These were a failure, but this failure did not blight his ambition. He planted late potatoes, again in partnership with his brother. This time the venture proved profitable. His business judgment, which is as necessary in the business of farming as in any other, and which Henry is acquiring while young, prompted him to sell out to his older brother for the sum of $55. His expenses were $37 for seed and fertilizer. The $18 profit he invested in War Saving Stamps, to swell the profits still more. The boys received prizes at the county fair for their products.

From the pigs, I was taken to the corn crib. Here Henry showed me his corn, stored away with his father's corn, but divided from it by a wooden partition. It was fairly good corn for the season, considering the kind of ground on which it was grown. We went to the barnyard next and here Henry pointed to a bull he had raised and, incidentally, which belonged to him. There was also a cow that belonged to Newton, his older brother. Lastly was a pretty, long-haired Shetland pony, which I had taken for granted belonged to Henry. I remarked that I supposed the pony was his, but from the expression on his face I could see that things were not as I supposed. He remarked, "It used to belong to me. I gave it to father instead of money, to pay a fertilizer bill which was not paid from last season". He offered no complaint. It was all clear to him—business was business. He had invested and failed. It was a just debt and had to be paid. The sober expression on Henry's face was not only because he had lost the pony, but because he had failed in a certain farm venture.

I could relate many other interesting facts concerning this remarkable family partnership. The partnership probably goes on in the home with the girls. I dared not be too inquisitive. Henry, however, told me that both he and his brother had [illegible] bank accounts. A healthy atmosphere of co-operation could be noticed everywhere about the place.

How It Pays

Two important features were impressed upon me in this visit. One was that the solution of the farm labor problem rested with the farmer himself to a certain extent. The second was that the method these parents were using with their boys was the very foundation of settling that staggering problem of how to keep the country boy in the country. Notice, I say "country boy". Anyone familiar with the successes and failures made on the farm by city boys, even tho they may have had agricultural college training, knows full well that it is difficult to get farmers to use any but country help. They are largely right in this, because a good farm worker must be a skilled worker and this skill is only acquired after years of actual practice. Therefore, there is need of emphasis on "country boys" when speaking of solving our farm labor problem.

Too often the farm boy is treated by the fath-

The Steady Pull of the Tractor is a Big Advantage in Operating Heavy Machinery

er with indifference. He is very seldom made to feel that he is a part of the farm enterprise. The father loves his boys, but too often he stops there. He fails to appreciate his opportunity to lovingly and considerately mold those boys to future as well as present usefulness. I have often heard people say that such and such a farmer treats his boys as he would treat a hired man. This, again, is wrong. Why should not a hired man be treated as well as the son, so far as daily routine goes? I would say that both should be made to feel that they are a part of the enterprise. Farmers must realize that as soon as a hired man gives his best efforts in anything he may be doing, then he becomes a part of that work. The old idea that a hired man or a son must do a job this way or that way, whether or not he thinks it right (because in the case of a hired man he is paid to do as he is commanded), is wrong. As long as such a condition exists, boys will leave the farm and farmers will fail to hold help.

Our most successful city industries are realizing this fact and are changing from the old state of affairs of doing this and that because the boss says so. They are instructing their employees in the work each one is doing, so that they know why they do this or that. Employees are being encouraged to take a part in the industry in which they are employed. Their efficiency is rewarded by promotion and more pay. The industry profits by the increased efficiency of the help.

Other Things Needed

Business management, of course, is not all that is necessary to keep the boys on the farm. Coupled with family partnership must be a certain amount of financial success. This can only be obtained by having a fair amount of capital, and the practice of good farm methods and business ability. The boy must also have wholesome social surroundings and his education should go farther than it usually does. With higher education, many things solve themselves. The boy becomes more serious and broader minded. He begins to know that all that glitters is not gold. He is better able and more likely to weigh the possibilities of a farm career with one in the city; and my judgment fails me if more boys would not select a farm career rather than one in the city if they had an intelligent understanding of comparative conditions.

The latter considerations are a part of the work of the vocational schools. Let us go back to the early part of this story and see where the Vocational School can do its part. Take Henry and his hogs. Here can enter study of breeding, feeds and feeding, marketing and so on, with the accompanying spelling, arithmetic, geography, civics and other studies. In his corn project, Henry undoubtedly used "Phosphate". This is the common term for all kinds of fertilizers used. If the Vocational School can work long enough with Henry, he will speak of fertilizer as nitrogen, phosphoric acid and potash. He will know the reasons "why", which, when coupled up with the knowing "how", spells efficiency. With this combination, life will not only be more attractive but farms will pay better and rural life in general will be elevated to planes it deserves. And in the end, more young people will stay on the farm. Personal interest, personal profit and personal ambition tie the boy to his work.

Making War-Time Road Repairs

Importance of Keeping the Highways in Good Condition

In view of the need for information on the maintenance of public roads in the cheapest and most effective manner, the following article from DuPont's Magazine is printed herewith:

Improved national highways connecting all parts of the country by thru lines were important in peace, but their importance then was as nothing compared with their vital importance in these days of war. Without improved highways adequate increases in the production of foodstuffs cannot be made, nor can they be properly distributed.

Without open and easily traveled highways transportation will become more and more congested, and the conditions of last winter will grow steadily worse. Even during the dry summer months, when roads should be at their best, the situation will not be materially improved unless concerted action is soon in effect. Traffic must of necessity tremendously increase and place additional loads on the roads.

It is, therefore, of supreme importance that the greatest possible encouragement be given to improving highways, especially those which can be made available for thru traffic and for the handling of foodstuffs out of the rural regions and into the more densely populated centers.

A Good Place to Start the Road Drag

At this time it is not so much a matter of building elaborate systems of new roads, but of keeping those already established in the best of repair.

Altho England has been accustomed to building her roads much more heavily than the United States, still there is hardly a main road in that country that is not utterly worn out, due to the heavy traffic on roads that thru war necessities have been neglected in regard to maintenance, and increasing difficulties are being encountered.

Today thousands of miles of excellent and expensive American roads are falling into bad repair and becoming practically impassable on account of the lack of attention to slight repairs soon after the trouble occurs.

Many roads look as if the money used in making them might better have been left in the bank, and the net result is an enormous loss in money and efficiency to those living along these lines of travel.

Of all classes of people the farmer has been the one most dependent upon good roads, as they are essential to the satisfactory marketing of his products, the hauling of his supplies, and his pleasure. He is today the largest user of both automobile and horse-drawn vehicles, and the wear and tear on them from bad roads is annually enough to keep in repair the main highway and more important branch roads. He is simply paying for good roads in his repair bills, without having the advantages of easy travel. Now he is joined in his desire for better highways by all classes of manufacturers and shippers.

The difference between a poor road and an improved road may mean the difference between production at a profit and production at a loss, and, in some cases, of no production.

Labor that will do the rougher work is scarce and demands increasing wages. The supply for public road work is usually drawn from the adjoining farms, where it is most needed for the care of crops. The application of improved methods will not only assist in overcoming this trouble, but will materially decrease the cost. Road builders are confronted by a shortage of labor, and are being brought to realize more and more the importance of the use of all economies and labor-saving devices.

In meeting the present emergencies no better plan could be followed than the simple "stitch in time", and if all roads were patroled and inspected often by men equipped with light tools and supplies of stone and other materials required, and the small repairs made as soon as a break occurred in the surfacing or in the ditches, bad breaks of greater magnitude would be prevented. There is no phase of the subject of road improvement so important, and which is so often neglected, as that of maintenance, for no road can be so well constructed that it will not need to be maintained, as it is no more than completed before the destructive forces of water, frost, and traffic set in.

Experience has shown that by proper maintenance even earth roads can be kept in satisfactory condition for carrying considerable amounts of traffic. The first important requisite is in keeping the surface well drained and smooth.

Water is the great enemy of all roads, and must be removed immediately after rains. This demands attention to culverts, side ditches, and the surface of the road. This last item is always of importance, for the smooth raised crown of the road must be maintained, both for easy travel and for drainage. For this there is nothing more useful than the drag, which should always be used while the road is wet from a recent rain.

For the different classes of hard-surfaced roads, the repairs must be somewhat different for the surface, but the drainage problems remain the same. No matter what the surfacing may be, anything from gravel or macadam to the heaviest concrete, every crack or break should have immediate attention and quick repairs. To do this plans must be well laid, and the requisite stone, tar, and tools kept on hand. Under heavy traffic the smallest break will soon develop into an almost impassable hole.

Road repair is now a matter demanding the best attention, not only of the Government, state, and county, but of the community and citizen as well. The knowledge of why or how the work should be done is not sufficient. Success can be found only in each doing his part in protecting and repairing the roads and urging others to do likewise.

Fertility Without Live Stock.—It is possible to maintain the fertility of the land without live stock by the proper rotation of crops and the use of green manures supplemented with lime and other chemical fertilizers as may be required, but the average farmer has not done it and probably will not do it under our present voluntary system of land tenure.

Inoculation of Legums

Where and When Not Necessary

"After one has gotten good stands of crimson clover or vetch or any other of the legumes thru the use of the artificial cultures, is it necessary or profitable to continue the use of these cultures every time a legume crop is sown?"

Not if you practice a systematic short rotation, bringing the legumes on the land frequently, and keeping the soil sweet by an occasional application of lime. After the soil has gotten well inoculated for the various legume crops I have been unable to see the profit in using them every time we sow peas or clover or vetch. I have tried here the leading cultures on the market. On land where the legume sown was just introduced they have a fine effect in increasing the nitrogen-fixing bacteria. After the soil has been once well inoculated and the rotation is good the cultures will still show some effect, but not enough to make it profitable to continue their use. The farmer with a good stand of crimson clover, on which he has spread all the manurial accumulation during the winter, will simply be wasting money in buying cultures.

I have never seen here a profitable increase in the crimson clover from inoculating the seed. Where for generations red clover has been grown, the soil will always be found well inoculated for any other true clover, that is the trifolium genus. Introducing a new legume like bur clover or sweet clover, neither of which is a true clover, the clover inoculation will not suffice. The true clovers will inoculate for each other. The bur clover and the sweet clover will inoculate for each other and for alfalfa. There is some evidence that the bacteria of the cow pea will inoculate soybeans and soil where the garden pea has thriven will inoculate vetch. But in the first introduction of any of these legumes where none of its class has ever been grown the artificial inoculation is valuable and important. But most of the failures to grow legume crops is due rather to soil acidity than to need for inoculation, for no inoculation will permanently introduce the bacteria into an acid soil which is fatal to the thriving of the bacteria. In a very poor soil from which all the humus has been worn out, it will pay to use the cultures repeatedly till the humus or organic decay has been increased, since this is essential to bacterial life in the soil.

After all, the profit in the use of anything intended for the improvement of soil and crops will depend on the amount of brain work the farmer does. No hard and fast rule can be applied to every case, and the man who devotes the most study to his soil and its condition will usually make the best success.—W. F. Massey, Maryland.

Effect of Green Manure on Soil

A general impression prevails that green manuring is accompanied by marked increase in the acidity of the soil and therefore must be followed by a liberal application of lime. For the purpose of obtaining definite information on this subject an extensive experiment was recently completed at the Pennsylvania State College, in which fourteen different green crop residues, equivalent to twenty tons of dry matter an acre, were thoroly mixed with a slightly acid soil. The soil was examined for acidity every four weeks for a period of nine months.

The crop residues consisted of six leguminous crops and eight non-legumes as follows:

Soybeans, Canada field peas, sweet clover, alfalfa, red clover, hairy vetch, wheat, rape, oats, corn, rye, timothy, red top, and sheep sorrel.

The results from this experiment may be briefly summarized as follows:

After being in contact with the soil for nine months, soybeans increased the acidity by 450 pounds of calcium carbonate to the acre, sweet clover 842 pounds, wheat 2,550 pounds, rape 616 pounds, corn two pounds and rye 204 pounds. Canada field peas decreased the acidity by 176 pounds, alfalfa 541 pounds, red clover 528 pounds, hairy vetch 760 pounds, oats 1,586 pounds, rye 1,249 pounds, red top 244 pounds and sorrel 1,632 pounds.

As a general average, therefore, leguminous green manures decreased the acidity by 119 pounds, and the non-legumes by 167 pounds.

THE WEATHER
MONTH BY MONTH

JULY

(Note.—This is the second article in this series on Pennsylvania weather records. Records for month of August will be published in our issue of July 27.)

As July advances upon us, the conditions became more and more favorable for thunderstorms and tornadoes. The most of our summer rainfall occurs in connection with these storms. This is a result of the prevalent moist, southeasterly winds, which also make the weather of July extremely oppressive.

The normal, 72.1 degrees, is the highest of any month. The highest mean, 76.4 degrees, occurred in 1901, and the lowest, 67.8 degrees, in 1891. The highest temperature on record for July is 107 degrees. This has been recorded at two stations, Hamburg, Berks County, on the 3rd, 1898, and at York, York County, on the 2nd, 1901. A minimum temperature of 31 degrees was recorded at Lock Haven, Clinton County, in 1894. In 1906, 95 degrees was the highest recorded. This was at Bellefonte, Center County, on the 2nd.

A Few Minutes With the Drag Gives a Smooth Finish

During the period 1888-1917, inclusive, the temperature has fallen to 40 degrees or under, 25 out of the 30 years, but has fallen to freezing, or under, but once. In 1901, the temperature did not fall below 45 degrees. This minimum was at Emporium, Cameron County, on the 7th.

Precipitation

The normal precipitation for July is 4.42 inches. The highest mean occurred in 1896, when the average for the state was 6.89 inches. The maximum amount was also recorded in 1896, 15.59 inches being measured at Uniontown, Fayette County. In that same July 3.04 inches at Coatesville, Chester County, was the lowest amount measured, this being the highest minimum on record for this month. The lowest mean occurred in 1909 when the average was 2.14 inches. In that July, 4.50 was the highest recorded at any station in the state. This was at Aleppo, Greene County. The least ever recorded during July was 0.39 of an inch at Erie, Erie County, in 1916.

Heavy downpours resulting from severe thunderstorms are of almost yearly occurrence. The most notable are as follows: Hulmeville, Bucks County, 7 inches, on the 26th, 1879; Cambridge, Md., 5.12 inches, on the 31st, 1893; Constableville, N. Y., 5.91 inches, on the 1st, 1890; and a most remarkable fall of 12 inches at Lambertville, N. J., on the 16th of July, 1865.—C. E. Miller, Cumberland County, Pa.

Motor Truck Lines for Farmers

So much is being written about motor trucks and their universal usefulness that some people are inclined to be more or less skeptical about the practicability of the whole proposition; especially with respect to its application to agriculture and the farmer. However, we may just as well acknowledge that the motor truck in the country is coming to stay and the steady growth of its usefulness will be limited only by the supply and price of gasoline.

Many farmers in Pennsylvania are finding that a small motor truck takes the place of one or two teams for all sorts of road work and are a wonderful relief during the busy time of the year when it is a serious matter to take the farm horses away from the plowing and cultivation and from the harvesting. Of course the farmers who are doing market gardening or who have some regular work on the road nearly all of the year, have long since discovered the practicability of the motor truck.

All of this is to lead to a natural development in the organization and extension of motor truck express lines for the collection and movement of farm produce from many farmers along regularly established routes. Some of these truck lines are owned by individual farmers who take on the produce of their neighbors as a matter of accommodation and to reduce the cost of their own hauling. Other lines have been established by co-operative ownership between farmers. Still others are established on a purely commercial basis, being operated from the cities and towns. However this is done it is a thoroly practical proposition and in most cases seems to be working out very well and the present serious condition of railroad transportation is lending itself especially to the development of motor truck lines. This has been true in the transportation of all sorts of commodities between cities and from cities far into the country, and is now working just as well in the movement of perishable farm products into the principal markets. So serious have transportation conditions been in the past few months that many of the more perishable farm products will be wasted unless some more certain way of getting them to market is devised. In this respect the motor truck is proving itself a real conservation agency.—C. J. Tyson, Farmers' Representative in U. S. Food Administration.

HARROWING WEEDY ALFALFA FIELDS

Harrowing alfalfa immediately after the first cutting will rid that legume of foxtail and bluegrass, providing the cultivation can be done during a dry spell, according to C. G. Williams, agronomist at the Ohio Experiment Station.

At the Ohio Station a spring-tooth harrow has been found more practical than a disk as the injury to the alfalfa is less when the spring-tooth implement is used. However, even a severe harrowing does not destroy enough alfalfa to lower the crop yield to any appreciable extent.

Harrowing during a wet season will not rid the alfalfa of its plant pests, as the weeds and grasses are merely dug out and reset by the harrow. It is necessary, therefore, to do the harrowing at a dry time if best results are desired. Hot and dry weather are necessary to kill foxtail and bluegrass after harrowing. Mr. Williams recommends waiting until after the second or even third crop is harvested if necessary to get the hot and dry spells. Many good alfalfa fields have been spoiled by encroaching weeds. The harrow, rightly used, gets them.

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PHILADELPHIA, PA., JUNE 29, 1918.

Our job is to serve our readers. Whenever and wherever we can help you, write us.—The Editors.

Our War

The submarine attacks on American shipping off the Atlantic coast bring the war nearer home. The possibility of air raids on coast cities, which authorities agree are possible, brings the war still nearer home. "The" war becomes more and more "our" war. The reports of German air raids on allied hospitals, the wanton destruction of defenseless women and children, the deliberate attacks on Red Cross station, all portray the temper and capacity of the enemy. The submarine attacks are merely incidents of warfare as "modernized" by the Huns. The air raids, if they develop, will be mere incidents of a similar character. Every act of boasted "frightfulness" stirs us to new indignation. But mere indignation does not hurt the enemy. The Germans do not care what we think of them. The iron hand is the only power they recognize. It is the only power that will stop them in their mad ambition for world dominion. We have been asked to do and to give until it hurts. It is only by doing and giving that we can put the hurt where it will do the most good—with the ruthless enemy.

* * *

Promising Prospects

Government and other reports continue to show a favorable condition in the development of all crops except corn. It is not yet too late for corn to retrieve itself from the effects of cool, wet weather, provided there is sufficient temperature from now on. However, much of it was planted very late and in many instances can not be expected to do more than produce good silage. An immature corn crop is a calamity on any farm which does not possess a silo. Owners of such farms will perform a wise act of preparedness if they will at once get ready to meet such an emergency by erecting a silo. With the uncertainties of shipping and the scarcity of labor and material in view, it is not too early to act in this matter.

Wheat and rye have made unusual seasonable gains when the late seeding and severe winter are considered. The estimated yield of wheat is now 150,000,000 bushels above the first estimate; this in spite of the fact that over 13 per cent of the acreage was abandoned because of winter killing. The cool, wet weather has also been favorable for oats and grass. In most localities hay promises to be a record crop.

From these facts, and the promise of lower prices for concentrates next winter, dairymen and other stock feeders may well feel encouraged at the outlook.

* * *

Eliminate the Unnecessary

Pennsylvania Farmer has consistently opposed the tendency of the last few years to multiply costly and unprofitable public and semi-public advisers, bureaus, commissions, etc., in all lines. This caution is doubly important now that money and manpower are so much needed for vital work. Those who produce, raise money and pay taxes have enough to do without having the additional burden of supporting a raft of people whose services and advice are worth but a fraction of their cost. We need to apply the principle and practice of economy and conservation to our public expenditures as well as to personal affairs.

Farmers are becoming disgusted at the amount of credit which this class of people in agricultural positions are taking to themselves for the big crops raised and the increase in food products on the farms, when as a matter of fact the results are due to the extra work, thought and self sacrifice which the farmers themselves are making. When the canvas is made in search for unnecessary occupations, some of them will be found bearing an agricultural tag.

* * *

Threshing Waste

The steps suggested by the Food Administration to prevent loss of grain thru inefficient operation of threshing machines should be heeded everywhere. The effort calls for attention to small details and results are not likely to be spectacular—but nevertheless important. Waste in harvest and in threshing represents waste of the fruits of a season's labor. The annual "cleaning up" after the threshing machine suggests the possibilities of saving by careful work. The regulations being put out apply particularly to the big grain sections of the West, but here in the East, where so many of the farmers own and operate their own threshing outfits, there must be even greater care exercised by a larger number of operators. Threshing outfits should be put in the best possible condition and the best care given to their operation.

There is also need of early threshing of wheat in the East to prevent damage by the angoumois grain moth. This pest starts its work in grain in the field or in the mow or stack. The most practical control measure is to thresh as early after harvest as possible and store the grain in tight bins if it is to be held for any considerable length of time. If the grain in bins heats or gives other evidence of the presence of the pest, fumigate with carbon bisulphide. The loss of but a few bushels of grain at each farm means an aggregate waste amounting up into the millions—and grain will mean the saving of precious lives and the saving of nations this year. Don't waste.

* * *

The People's Water Power

Americans have usually been so busy attending to their personal affairs that they have paid little attention to the activities of the class which succeeded in getting full control of the natural resources of the country. Too often they have not wakened up until it was too late and then their efforts were of the kind which locks the stable after the horse is stolen.

What looks like a happy exception to this rule is found in the Senate's favorable report of the Administration's water power bill. Some time ago we made mention of the fact that, in spite of the efforts of a few watchful men, it looked as if the objectionable Shield's bill, which practically gave away forever all rights to private ownership, would go thru. A committee composed of department heads was appointed and it drew up a bill which encouraged the development of the water power by private enterprise, but which also safeguarded the rights of the people and provided for Government regulation and, if necessary, condemnation and purchase.

The future will see quite as great a utilization of water power as this generation sees of coal. Certain long-headed interests have realized this and have been endeavoring for some time to acquire control of the water rights. Certain other long-headed but public-spirited men have so far prevented this and if the people will back up the administration bill and insist that their representatives support it, the people may have some say in the development, application and cost of what will be the chief source of light, heat and power of the future.

Breaking Records

Those labor union leaders who object to riviting contests among shipbuilders because they demoralize labor crews will receive little sympathy from farmers. Most farmers are breaking labor records every day, not for a big money prize or for newspaper glory, but because the nation needs their products. They are keyed up to record speed, not for eight hours a day but from daylight to dark every day because they know that their crops are as much needed as ships or ammunition and they alone must do the work of producing crops. More and more the news from that vital Western Front Line impresses upon us all that the war is our first and only business, and that only by our utmost can we win. There is something mighty unpleasant in all this insistence on the eight-hour-day, normal speed and the ever-increasing wage demands. It is no time to exaggerate the other fellow's faults and excuse our own, but it is time for all classes to give the best they have for the common cause. There are two kinds of profiteering: Over-charging on the commodity sold, and underweighing on the commodity paid for. Profiteering is worse than a crime when our millions are giving their lives for "the cause," and profiteering is the same regardless of the commodity handled.

* * *

The Beef Supply

Did someone blunder in estimating the country's beef supply? In the latter part of March the Food Administration announced that, owing to conservation in domestic consumption, beef supplies had accumulated until we had a surplus of beef on hand. The "beefless days" restrictions were raised and all were encouraged to eat beef. Last week an order was hurriedly issued imposing the most stringent regulation on beef consumption that has ever been applied to any article of food except wheat flour. It was announced that the beef supply had been dangerously exhausted and the public was asked to restrict the ration to one and one-half pounds of beef per capita a week. The Food Administration has won the confidence of the general public, and the latest announcement will be accepted in the same spirit of co-operation that has been accorded other rulings and requests. But why the discrepancy in estimates of supplies now and last March? Unrestricted consumption would account for some reduction in supplies, as it was expected to do. Increases in our army abroad would account for still more. But both of these factors were under constant observation and results should have been foreseen before supplies were reduced to the danger point, as now reported.

It was also observed that retail prices of beef in the cities went up shortly after the "beefless" days were rescinded. Inquiry with the retailers as to cause elicited the interesting but unsatisfactory reply that "beef always goes up at this season of the year". Prices on beef cattle in eastern markets showed little change in March, but have made steady advances thru April, May and June. Average top prices in the Lancaster, Pittsburgh and Philadelphia markets for March were about $12.75 to $13.75 per cwt; for April, $14 to $15.50; for May, $16 to $17.50; for June, $16.50 to $17.50. This range does not indicate a market depressed by an over-supply; neither does it indicate a market rapidly falling behind the demand. The period covered, however, is the period in which most of the eastern-fattened beef went onto the market. At the prices paid for feeders last fall, these wholesale prices do not represent much profit to the feeder, or much encouragement to feed cattle another year. Would a more accurate estimate of the country's beef supply have given a more favorable beef cattle market? It certainly could not have depressed the market.

The public has confidence in the Food Administration to locate the cause of the evident error in estimates. The Administration can retain that confidence only by effectively guarding against a repetition. Taking over the Chicago live stock market wires, as announced June 20, should help to that end.

HARRISBURG NOTES

Agricultural Representation.—Representation of agriculture and labor upon state boards dealing with public service, compensation, water supply and the like as well as in the administration of state government and the enactment of old age and health insurance laws are going to be big features of the coming legislative session if the statements made by candidates and the leaders of the two big parties in Pennsylvania are to be taken as signs. Ordinarily, the issues which will agitate a session of the general assembly can be foreseen six or seven months. The liquor interests appear to have pretty well organized the campaign for defeat of the amendment, altho the exigencies of wartime may force a change in sentiment which even the traffic-bossed lawmakers may be compelled to recognize, and now there is a very plain effort on the part of men active in politics to keep agriculture and labor going in their appointed fields.

The Commission.—The Commission of Agriculture failed to meet last week and there are no signs that the threatened reorganization by the governor or the progressive program of the commissioners will be put into effect. The Commission has been getting together occasionally and its policy of secret meetings and censored statements of transactions has well nigh destroyed confidence in any of its professions of endeavor for the benefit of the state. Even when in a position to defy the governor and be supported by popular opinion it failed dismally and not much more is expected except some jockeying in advance of the next legislature and a statement of what the commission has cost Pennsylvania backed up against what it has done will about end it.

The Rural Schools.—Approach of the time of meeting of the National Educational Association, which is to assemble next week in Pittsburgh and in which Pennsylvanians will take a prominent part, has caused marked activity in the discussion of the problems attending rural school administration here and it is likely that some general national policy in regard to the country schools will be urged, as every state is suffering from the same difficulties as Pennsylvania. The reports of the school districts, which are just commencing to be filed, show very conclusively that many of them went into debt to maintain even the minimum term; that teachers can not be held unless there is a considerable change in the situation, and that even in event of consolidation some of the poorer districts will be embarrassed to keep going. Agitation for a change in the system of distribution of state aid and for a material increase is very apparent and will find strong support this fall in many counties where it is proposed to address legislative candidates on this subject which is quite as important as the prohibition amendment in the minds of many people. Failure of the present state administration to move a year ago when the state superintendent called attention to the trouble that would follow unless the apportionment of funds was changed is much criticised.

The Farmer's Coal.—Another problem which is commencing to loom up in rural districts is the winter fuel supply and fuel administrators of counties have been getting some barbed questions about what can be expected. The farmers of the state were not sufferers to the extent of city people last winter because of the fuel shortage, but thus far many of them have been unable to buy fuel, altho announcements have been made in newspapers from official sources urging people to lay in their winter supplies. It is likely that state authorities will be asked to assist in straightening out this problem. Many complaints of no coal in sight are heard.

The June Cold Wave.—Reports received here are rather indicative of damage done to corn, cabbage and other young plants in the northern tier. Some statements told of frost and while they are not well authenticated there is no question but what the cool weather has retarded all forms of agriculture and horticulture.—Hamilton, Harrisburg, Pa., June 24.

NEW YORK LETTER

Farmers' Federation Reformed.—The New York State Federation of Agriculture formed last winter was not at first a new organization. The Federation has been reformed and made into a real organization with the idea of making the movement an expression of independent political action of farmers of the state. The people of the state regret that this movement of forming an independent organization, with township units as a basis could not have been unanimous with the leaders. There is a growing feeling that the published disapproval of the new plan by officials of leading, older agricultural organizations of the state does not represent fairly the feeling of their respective societies. The summer and fall promises exciting interest in public matters in rural sections of the state as the farmers feel that they must have a voice in the selection of officials if the two great classes of consumers and producers are ever to have a fair chance.

New Milk Plans.—The New York dailies make much of sensational milk prices that J. J. Dillon, long an agitator for cheaper milk, and N. A. Van Son have been able to place before city buyers. These men have been able to bring fresh Grade B milk testing 3.5 percent butter fat to the milk dealers who have been driven out of business by the milk dealers' trust—at $2.30 per can or 5¾ cents per quart, allowing the retailers to sell it at 7 cents a quart and still make the same profit they made when handling milk under the big companies. Farmers are getting 3.7 to 4 cents a quart for milk this month—and the trust is getting 10 to 11 cents in stores, and 13 to 15 cents in bottles, delivered. Mr. Van Son represents the farmers and former Commissioner Dillon donates his services thru June to get the plan into working order. The first day's sales were increased 10,000 quarts. Six salesmen are at work with grocers and 1,000 grocers are already selling milk at 7 cents a quart. An order for bottles has been placed and soon bottled milk will be sold from the stores at 8 to 9 cents a quart. The trust will fight the plan but the farmers and other leaders are fighters, too, and it is believed that nothing can stop the new movement. The Federal Milk Commission has been sufficiently interested the past week to call a new meeting. They have protected the big dealers on their 13 to 20 cents bottled-milk prices, but did reduce store prices a cent a quart.

The Dairymen's League and Surplus Milk.—According to recent agreements with Borden's Farm Products Company the Dairymen's League has assumed the problem of taking care of the surplus milk of May and June. By July 15 the League will owe Bordens enormous sums for surplus losses in May. A plan to charge such losses to non-members is causing adverse discussion. Bordens offer to sell its country milk plants to the League at investment values, on an installment plan, covering a number of years, the former company to continue to own such plants until the price is fully paid. Farmers are not willing to put their necks in such a yoke, and will not hamper themselves—as their main object now is to put the price of milk down where consumption will greatly increase. Milk problems and methods of overcoming present conditions form the subject of constant debate now in city and country.

PENNSYLVANIA FAIRS

County Town Date
York, Fawn Grove, August 7—9.
Berks, Kutztown, August 20—23.
Erie, Corry, August 20—23.
Butler, Donegal Township, August 27—30.
Jefferson, Brookville, August 27—30.
Washington, Arden, August 27—30.
Philadelphia, Philadelphia, Sept. 2—5.
Monroe, Stroudsburg, Sept. 2—6.
Bradford, Towanda, Sept. 3—6.
Indiana, Indiana, Sept. 3—6.
Warren, Warren, Sept. 3—6.
York, Red Lion, Sept. 4—7.
Bucks, Quakertown, Sept. 6—7.
Lawrence, Pulaski, Sept. 10—12.
Susquehanna, Montrose, Sept. 10—12.
Blair, Altoona, Sept. 10—13.
Butler, North Washington, Sept. 10—13.
Crawford, Titusville, Sept. 10—13.
Jefferson, Punxsutawney, Sept. 10—13.
McKean, Smethport, Sept. 10—13.
Tioga, Westfield, Sept. 10—13.
Erie, Wattsburg, Sept. 10—13.
Northampton, Nazareth, Sept. 10—14.
Bradford, Troy, Sept. 11—14.
Juniata, Port Royal, Sept. 11—14.
Centre, Centre Hall, Sept. 14—20.
Bradford, Athens, Sept. 16—20.
Cameron, Emporium, Sept. 17.
Mercer, Mercer, Sept. 17—19.
Armstrong, Dayton, Sept. 17—20.
Cambria, Carrolltown, Sept. 17—20.
Carbon, Lehighton, Sept. 17—20.
Clearfield, Clearfield, Sept. 17—20.
Lebanon, Lebanon, Sept. 17—20.
Somerset, Meyersdale, Sept. 17—20.
Tioga, Mansfield, Sept. 17—20.
Wyoming, Tunkhannock, Sept. 17—20.
York, Hanover, Sept. 17—20.
Elk, St. Marys, Sept. 17—21.
Chester, West Chester, Sept. 18—21.
Allegheny, Imperial, Sept. 24—27.
Clarion, Clarion, Sept. 24—27.
Cumberland, Carlisle, Sept. 24—27.
Lycoming, Hughesville, Sept. 24—27.
Mercer, Stoneboro, Sept. 24—27.
Greene, Carmichaels, Sept. 24—27.
Berks, Reading, Sept. 24—28.
Luzerne, Dallas, Sept. 25—27.
Beaver, Junction Park, Sept. 25—28.
Sullivan, Forksville, Oct. 1—3.
Washington, Burgettstown, Oct. 1—3.
Bedford, Bedford, Oct. 1—4.
Columbia, Bloomsburg, Oct. 1—4.
Somerset, Somerset, Oct. 1—4.
Wayne, Honesdale, Oct. 1—4.
Lancaster, Lancaster, Oct. 1—5.
Perry, Newport, Oct. 8—11.
York, York, Oct. 8—11.
Dauphin, Gratz, Oct. 15—18.
Union, Lewisburg, Oct. 15—18.
Venango, Oil City, Oct. 23—25.
Huntingdon, Huntingdon, Oct. 30—Nov. 1.
Philadelphia, Philadelphia, Nov. 5—9.
Mifflin, Lewistown, Nov. 7—9.
Schuylkill, Nov. 12—15.
Delaware, Media, Nov. 26—30.
Adams, Bendersville, Dec. 18—20.

NEW YORK FAIRS

County Town Date
Livingston, Caledonia, August 13—16.
Madison, DeRuyter, August 13—16.
Orange, Middletown, August 13—16.
Cortland, Cortland, August 19—23.
Greene, Cairo, August 20—22.
Oswego, Sandy Creek, August 20—23.
St. Lawrence, Gouverneur, August 20—23.
Ulster, Ellenville, August 20—23.
Warren, Warrensburg, August 20—23.
Wyoming, Warsaw, August 20—23.
Saratoga, Ballston Spa, August 26—30.
Chenango, Norwich, August 27—30.
Lewis, Lowville, August 27—30.
St. Lawrence, Canton, August 27—30.
Steuben, Hornell, August 27—30.
Sullivan, Monticello, August 27—30.
Tompkins, Trumansburg, August 27—30.
Washington, Hudson Falls, August 27—30.
Monroe, Brockport, August 28—31.
Herkimer, Herkimer, Sept. 2—4.
Columbia, Chatham, Sept. 2—5.
Cattaraugus, Little Valley, Sept. 2—6.
Montgomery, Fonda, Sept. 2—6.
Rockland, Orangeburg, Sept. 2—6.
Monroe, Rochester, Sept. 2—7.
Broome, Whitney Point, Sept. 3—6.
Delaware, Walton, Sept. 3—6.
Essex, Westport, Sept. 3—6.
Jefferson, Watertown, Sept. 3—6.
St. Lawrence, Ogdensburg, Sept. 3—6.
Washington, Cambridge, Sept. 3—6.
Wayne, Newark, Sept. 5—7.
Chenango, Afton, Sept. 9—12.
Clinton, Plattsburg, Sept. 9—14.
Onondaga, Syracuse, Sept. 9—14.
Alleghany, Cuba, Sept. 10—13.
Chautauqua, Dunkirk-Fredonia, Sept. 10—13.
Delaware, Delhi, Sept. 10—13.
Jefferson, Cape Vincent, Sept. 10—13.
Rensselaer, Nassau, Sept. 10—13.
Tioga, Owego, Sept. 10—13.
Orleans, Albion, Sept. 11—14.
Yates, PennYan, Sept. 16—19.
Otsego, Oneonta, Sept. 16—20.
Albany, Altamont, Sept. 17—18.
Allegany, Angelica, Sept. 17—20.
Franklin, Malone, Sept. 17—20.
Oneida, Booneville, Sept. 17—20.
Suffolk, Riverhead, Sept. 17—20.
Tompkins, Ithaca, Sept. 17—20.
Genesee, Batavia, Sept. 17—21.
Brockland, New City, Sept. 18—21.
Ontario, Canandaigua, Sept. 19—21.
Otsego, Richfield Springs, Sept. 23—25.
Schoharie, Cobleskill, Sept. 23—27.
New York, New York, Sept. 24—26.
St. Lawrence, Pottsdam, Sept. 24—26.
Seneca, Waterloo, Sept. 24—26.
Erie, Hamburg, Sept. 24—27.
Livingston, Avon, Sept. 24—27.
Oswego, Fulton, Sept. 24—27.
Schuyler, Watkins, Sept. 24—27.
Steuben, Bath, Sept. 24—27.
Broome, Binghamton, Sept. 24—28.
Queens, Mineola, Sept. 24—28.
Oneida, Vernon, Sept. 25—27.
Wayne, Palmyra, Sept. 26—28.
Oneida, Rome, Sept. 30—Oct. 3.
Chemung, Elmira, Oct. 1—4.
Otsego, Morris, Oct. 1—4.
Rensselaer, Troy, Oct. 1—4.
Livingston, Hemlock, Oct. 2—4.
Wayne, Lyons, Oct. 3—5.
Yates, Dundee, Oct. 8—10.
New York, New York City, Nov. 6—8.
Albany, Albany, Jan. 16.
Allegany, Wellsville, Undecided.
Cattaraugus, Olean, Undecided.
Cayuga, Moravia, Undecided.
Dutchess, Poughkeepsie, Undecided.
Madison, Brookfield, Undecided.
Madison, Morrisville, Undecided.
Ontario, Reeds Corners, Undecided.
Steuben, Troupsburg, Undecided.
Tioga, Newark Valley, Undecided.
Tompkins, Dryden, Undecided.
Westchester, White Plains, Undecided.
Wyoming, Perry, Undecided.

MARYLAND FAIRS

County Town Date
Carroll, Taneytown, August 13—17.
Kent, Chestertown, July 30—31, Aug. 1-2.
Wicomico, Salisbury, August 20—23.
Frederick, Frederick, Oct. 22—25.

NEW JERSEY FAIRS

County Town Date
Mercer, Trenton, Sept. 30—Oct. 4.
Monmouth, Red Bank, Sept. 2—5.
Burlington, Mt. Holly, Sept. 10—13.
Camden, Gibbsboro, August 30—Sept. 2.

WORLD HUNGER
AMERICAN FARMER

You must run this race!

It's Up to the American Farmer to Keep the Spectre of World Hunger Far in the Rear

The adoption of every possible means of speeding up crop production is an absolute necessity.

Manufacturers and merchants throughout the country have proven that the motor truck does increase man-power, cut labor costs, and speed production.

Progressive farmers everywhere have adopted it. The farmer who does not put his farm on a motor truck basis is not equipped as well as he should be to run this life and death race.

Detroit Truck Attachments offer the farmer the ideal solution of the motor truck problem. Small first cost, prompt deliveries, high road clearance, minimum operation costs, mechanical simplicity—these are a few of the advantages of Detroit Attachments.

Provide a chassis (Ford or any other car)—new or old, take it to the nearest Detroit dealer and within twenty-four hours you will have the most economical, efficient truck any man could ask for.

Capacities run from one and one-quarter tons to full three tons. Prices range from $400.00 to $675.00. Write for literature giving full details.

Detroit Universal TRUCK ATTACHMENTS

Manufactured and Sold by
The Parkview Sales Company, 1685 Gratiot Ave., Detroit, Mich.

THIS SHOWS THE JOB WE TURNED OUT FOR ONE PROGRESSIVE FARMER BOXES AND BODIES BUILT TO SUIT EVERY NEED.

The Future of the Dairy

The Outlook After the War

The war's unprecedented demand for human food coming on us so suddenly found us in the midst of plenty and well trained to extravagance. This combination necessarily caused a change in the economic balance of things such as was never experienced before. Our dairymen had been more extravagant than they knew. Their business was, and is yet, to a great extent, conducted in the loosest possible manner. Let us look it over for a few minutes.

In the first place, we have kept a lot of cows that were utterly useless, which cut the average production of our herds so low that no available market price would make the cows profitable. Then the time of year the herds were to be productive favored the production of large quantities of spring and summer milk, forcing the price so low as to be less than self supporting. Then allowing them to stand dry so long in winter when milk and its products were so greatly needed and demanded good prices made another loss.

Again there has been no studied attention given to producing a first class article, and seeing to it that fair paying prices were obtained. All of this had a tendency to belittle the dairy business in the eyes of the trade and the people generally. If the farmer did not stand up for his business, who would? He seemed to think he was an underling in the world and believed that his rights were just as the other fellow chose to make them.

About the time of the beginning of the war, or before, the prices for beef, veal, pork and mutton began to go up. The dairyman thought there was no future in the business, so he sold his veal calves and many of his fat cows to the butcher. It was all right to sell off some of his cows, but the mischief was done when he sold his calves indiscriminately and undermined the future of his dairy.

We have not seemed able to appreciate that we are manufacturers of human food made of the roughage we grow on our farms converted thru the medium of the cow, and that if we do not have good machines, we cannot get a good and satisfactory finished product. After the war we will know better how to feed and produce more economically, will conserve our heifer calves, and select the best cows from them. Then the world market will be open to us even if we live in a district remote from cities or even railroads.

Condensed Milk Business

The raw milk will be canned, dried, evaporated, or made into cheese and shipped to the remotest parts of the world. The raw milk business, as now carried on in our large cities, will be confined more largely to the cities located in good agricultural sections, but the advertisement that condensed milk is getting now will insure the entire world the privilege of drinking milk when transportation and trade conditions again become normal.

There will be less flush and scarce seasons that will affect the price of the raw product. Milk will be canned at or near where it is produced and, like fruits and vegetables, will be put on the shelves and sold direct to the consumer in a wholesome condition. Such conditions will surely be a wonderful regulator to the production of milk products and will make it possible to realize the proper price for milk wherever our farms may be located.

The present effect of the war upon dairying is a problem. The price of cows, labor, feed and dairy products have all advanced so enormously that we scarcely know just what relation they bear to each other, and how long the present relation may exist. But the result is that the farmers are getting large milk checks and the production appears to be increasing in some sections at least. The 1918 season bids fair to be a banner year in the production of milk. It is difficult to make predictions that are sure to work out, but it appears to be a good time for the dairymen to keep their profitable cows and raise all of the good and well-bred calves that they can. The stock will all be needed, if not on this side they will be in demand "over there" at good paying prices to fill the vacancy made in Europe by the consumption of over 25 million cattle as beef. Until these are replaced, the products, if obtained at all, must come from Uncle Sam.

All Food Products Higher

We will never see the time again when we will put so low an estimate on the production of human food, or when it will be so plentiful and so ruthlessly wasted. The United States has, up to this time, offered an easy existence. Food and other articles of our daily needs were easily acquired, and we as a people lavished and wasted them. Production has always been in excess of our actual demands, and we have not felt the need of really stimulating production.

Oxford's Briar Flower—The $10,000 Jersey Cow

The natural increase of the population, if not interfered with, will bring our children and grandchildren face to face with the absolute necessity of doubling the production of agricultural products of the United States, or some of them will go hungry. We are told, and it is true, that our population has doubled once in every 25 years. Davenport says that in the life-time of the child born today, we will normally have a population equal to that of China, or over four hundred million, and the question will be how we can all get bread.

The present demand that is being made on the United States for food is a good training for us to have to prepare for what is sure to come. It is time and plenty late enough, too, for us to improve our dairy practices and get out of our ruts. The war is going to be the turning point in agricultural and dairy efficiency, and the sooner we realize it the better it will be for us and the following generations. We have had too much land, and food products have come too easily. We have never applied ourselves, as a people, to getting the most out of our opportunities. It is not so much what the war will do for dairying as what we will do after the war is over. Our people will just begin to waken up to their opportunities and responsibilities and the need of putting real business into the dairy.

We must study the business from a scientific viewpoint, improve the quality of our herds and seek to know more about their production and the net profits as well.—J.

DAIRYMEN PROTEST PRICES

Cortland County (N. Y.) dairymen are greatly stirred over the milk situation. At the spring session of the Cortland County Pomona grange the following resolutions were passed:

"Whereas, the milk consumers of the city of Cortland are paying 12 cents per quart for milk, the same price they paid in January when the price to farmers was twice what it is now, and,

"Whereas, the milk dealers of Cortland are claiming over 200 percent profit selling for $5.64 what costs them but $1.74 per 100 pounds, plus a slight bonus for increased butterfat content over the 3 percent demanded by law, and,

"Whereas, the milk industry is in grave danger because of the greatly decreased consumption of milk resulting from prohibitive retail prices, with the state and federal food administrators spending considerable sums of money in a vain endeavor to educate the people to a better understanding of the great value of milk as a food and the urgent need of its greater use if the dairy herds of the country are not to be slaughtered to a point that will bring on a scarcity of milk and its products that will cause serious suffering to the race in years to come, and,

"Whereas, the high retail prices have not conformed to the reductions in the prices made to the farmers from time to time, but have virtually put the food out of the reach of the people, be it

"Resolved, that Cortland County Pomona Grange instruct its people to carry out an advertising campaign to acquaint the people of the city with the facts of the situation and to arouse them to some constructive work to protect their own interests and to help save the dairy industry from destruction."

Copies of these resolutions were sent to the mayor of Cortland and the mayor of New York City. Cortland County is one of the leading milk-producing centers of the state, and the conditions in that county are typical of conditions all over the state. The dairymen did not want to criticise the Government officials and agreed that if the disproportional price represented a just burden that the dairymen had to carry at this time they would carry their load willingly. But they did feel that the city consumers should get their share of the reduction that was made in the wholesale prices for the month of June. Such reduction is not only just to the consumers but it would also encourage the consumption of milk and thus reduce the pressure on the milk market and on the market of all dairy products. These dairymen do not hesitate to say that the Federal Milk Commission should see that the consumers get a fair deal before consenting to a reduction in price to the producers.

The city of Corning, also in the heart of the milk-producing section, has arranged for a city milk-distributing plant and expects to save its milk consumers $75,000 yearly in milk bills. The company is capitalized at $25,000, shares being sold at $10 each to city consumers and nearby dairymen.

Use of Oleo

At a recent meeting of the Hannibal grange with the farm bureau and the Dairymen's League of the county, with an attendance of 115 farmers, it was found that over 1,000 pounds of oleo were being consumed each week by Hannibal farmers, who are thereby going directly against their own interests. Believing this condition to be quite general in milk producing centers of the state, the following resolution was passed:

"Resolved that we agree to refrain from the use of all brands of oleo, and that we ask the Dairymen's League, the New York State Grange and the Farm Bureaus to use their influence to secure similar resolutions wherever possible, so as to help relieve the burden of surplus dairy products."—F.

NEW YORK MILK NOTES

New Prices

The executive committee of the Dairymen's League is considering the July price. It is supposed that there will be several who will try for $2.40 for 3 percent milk, and it seems that price ought to prevail unless something higher is named. I believe that is the price worked out by Professor Warrren of Cornell in his yearly price, with percentage differentials for the different months. According to the professor this is the cost of production without profit. If this be true, then there should be no call for any reduction from it. As for us up in the state

who do the producing, it seems that we will be fairly well satisfied with cost. We can then feed grain to the cows without loss if we do it with sufficient thought and care. For the average test and allowing the freight differentials we will get about $2.55 and that is about what feed will cost by the hundred. However, we will not be too jubilant for we may get less for the milk and possibly pay more for the grain.

Future Adjustments

What is to be the next move in the line of milk price affairs is wholly in conjecture. Mr. Thomson, of New York, says that the logical thing to do is for the producers' organizations of the various cities to get together by representation and decide on milk prices for the various cities from the Mississippi or further west to the Atlantic coast. Milk should sell for less in DeMoines or Chicago that in Boston or New York, but there should be some reason for the different prices and there ought not to be the difference that was found at times last winter. If the Commissions have gone out of business as is believed, then it is important that the producers take hold of this problem.

There is still another angle to this affair and that is for the Food Administration to appoint one commission to fix prices for the cities of the entire portion of the country mentioned, making proper variations for the different cities. Whether it is better to leave this to a commission or for the organizations of dairymen to do it as an organized unit is a matter of opinion. From a selfish standpoint with a desire to avoid friction it will most likely be better to leave it to the Commission. To avoid friction is certainly important during the war, and at the present moment it seems the best solution of a difficult matter. The time must come, however, when we cannot leave to Government control all of these affairs. Perhaps the larger organizations will be strong enough to manage their own business at a later date to better advantage than now.—H. H. Lyon, Chenango Co., N. Y.

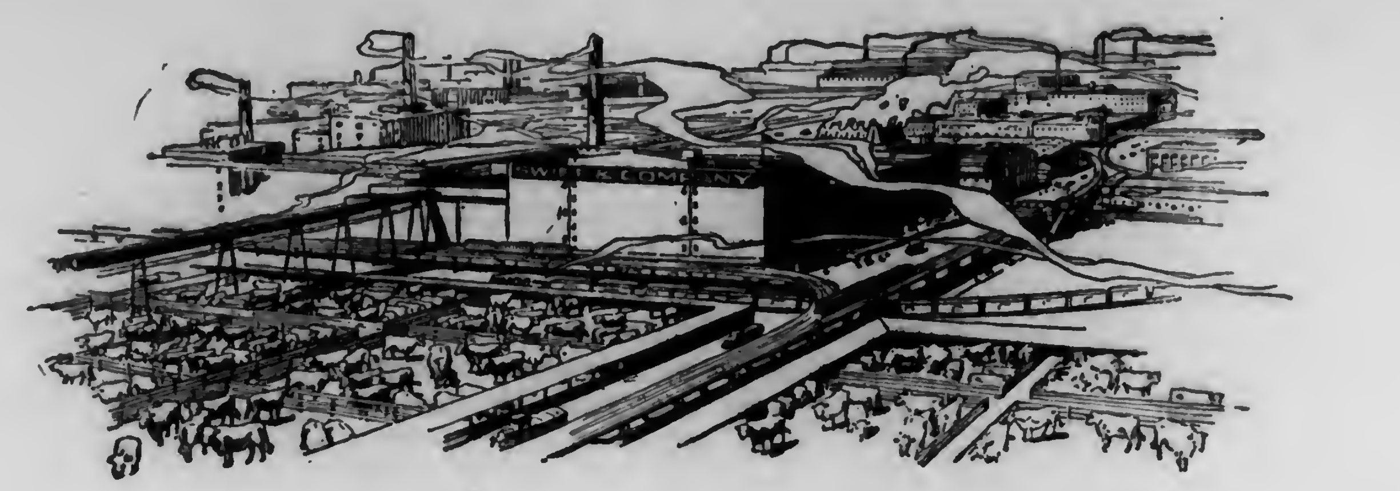
SOYBEANS FIRST IN ANNUAL HAY CROPS

Soybeans take first place among the annual midsummer forage crops used as emergency hay, according to specialists of the Ohio Experiment Station who have tested various other crops, like millet and sorghum, in competition with soybeans for this purpose. Soybeans are planted early in June or even during the last of the month if early varieties are used.

Drilling in rows 28 to 32 inches apart at the rate of two to three pecks of beans per acre is recommended in view of the present high prices for seed. The crop may then be cultivated two or three times during the summer.

The Medium Green variety has yielded 5,402 pounds of hay per acre as an average of a five-year period at the Experiment Station, the highest average yield obtained. Ito San, Shingto and Ohio 9035 have all yielded more than 4,800 pounds per acre. Ebony is also considered satisfactory for hay.

The crop is cut for hay when the pods are well formed. Leaves are saved best if curing is done mainly in the hay cock.



A business that is as big as its job

KEEPING a nation of over 100 million people regularly supplied with meat and meat products is a big and complex job.

And a still bigger job when to it is added the needs of the American soldier here and in Europe and of the Allies as well.

It is a job of converting the live stock of the West into meat and meat products and distributing them in perfect condition over long distances to the consuming centers—the North, South, East, West and abroad.

A job of supplying with *unfailing regularity* products that in the main are perishable, in the exact qualities and quantities needed, to the smallest out-of-the-way village as well as to complex and congested metropolitan centers.

Only organizations like that of Swift & Company, with its highly-specialized methods of meat-dressing, its hundreds of branch-distributing houses, and its thousands of refrigerator cars, could have handled such a job efficiently and at a minimum of expense in the present war emergency.

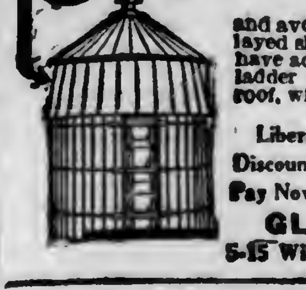
Today American meat and meat products are the recognized standard of the world.

And the economy with which these products are produced is indicated by the fact that today the meat of a steer, dressed, is sold for less than the cost of the steer on the hoof! The proceeds of by-products, made out of what once was waste, have made this possible.

The size of the job has dictated the size of America's packing industry. And America's packing industry has proved itself to be equal to its job.

Swift & Company, U. S. A.

A nation-wide organization with more than 20,000 stockholders



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and avoid higher prices and delayed shipments later. Globe silos have adjustable door frame with ladder combined, 5 ft. extension roof, window free.

Liberal Cash and Early Shipment Discounts. Buy Now, Ship Now, Pay Now; Save Now, Write Now.

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SILO USER AGENTS WANTED
Men wanted in every locality to own, show and sell famous Cincinnati Silos. Liberal spare-time profits. Full details free with special introductory offer. [illegible] Tank Co. Dept. F, Cincinnati, Ohio

Agents Wanted Teas, Coffee, Cocoas, Extracts Etc. Both sexes, wonderful opportunity spare time big profits. Particulars. Importers Branch Co. Dept. K, 144 Chambers St., N.Y.

PIPE second hand. Large stock all sizes furnished with new threads & couplings. Prompt shipment. J. F. Griffith, 416 Moyer St., Phila.

INSYDE TYRES
Inner armor for auto tires. Prevent blowouts and punctures. Double tire mileage. Easily applied to any tire between casing and tube. Prices low. Details free. Agents wanted. Liberal profits. Am. Auto Accessories Co. Dept. 721 Cincinnati, O.

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—that's what thousands of farmers say, who have gone from the U. S. to settle on homesteads or buy land in Western Canada. Canada's invitation to every industrious worker to settle in Manitoba, Saskatchewan or Alberta is especially attractive. She wants farmers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops to feed the world.

You Can Get a Homestead of 160 Acres FREE

or other lands at very low prices. Where you can buy good farm land at $15. to $30. per acre that will raise 20 to 45 bushels of $2. wheat to the acre—it's easy to become prosperous. Canadian farmers also grow wonderful crops of Oats, Barley and Flax. Mixed Farming is fully as profitable an industry as grain raising. The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools and churches, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. Immigration, Ottawa, Can., or to

F. A. HARRISON
200 N. Second St., Harrisburg, Pa.
Canadian Government Agent.

Dont let rats get your corn profits

Corn stored carelessly is money, time and labor lost.

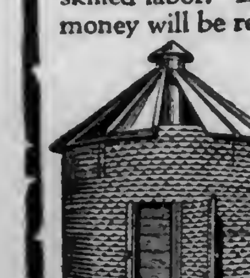
A Martin Steel Corn Crib will turn into money every bushel of corn you grow. It will absolutely protect your corn against loss from rats, mice, fire, thieves, birds and weather.

MARTIN STEEL CORN CRIB GRAIN BIN

"Pays for Itself"

The patented perforations and ventilating shaft of the Martin Crib create a constant circulation of air through the corn which assures proper curing.

A Martin Corn Saver will pay for itself in a few seasons. It will last a lifetime and needs no repairing. Easily erected by unskilled labor. If not all we claim, your money will be refunded.



Write for fully illustrated descriptive folder. It will help you make more money from your corn. State the number of bushels you store. Agents wanted in open territory. Address 904 Keyser Bldg.

GENERAL EQUIPMENT CO.
BALTIMORE, MD.

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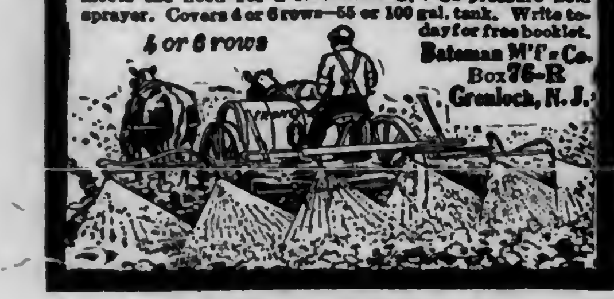
Farm, Garden and Orchard Tools

Answer the farmer's big questions. How can I can get my crops sprayed when help is scarce? How protect my crops against bugs and blight?

IRON AGE Traction Sprayer meets the need for a fast-working, high-pressure field sprayer. Covers 4 or 6 rows—55 or 100 gal. tank. Write today for free booklet.



Bateman M'f'g Co.
Box 76-R
Grenloch, N. J.

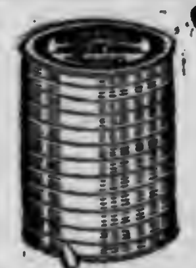
Plants Plants

All leading varieties now ready. Tomato plants price $1.50 per 1000. Cabbage plants $1.00 per 1000. Pepper plants $3.00 per 1000. Celery plants ready June 10th.

OROL LEDDEN, Sewell, N. J.
Bell Phone 9J-2

Largest Grower of vegetable plants in New Jersey.

Contractors to the Government



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Cabbage, Cauliflower, Pepper, Tomato, Brussels Sprouts, Beet, Celery, Egg, Kale, Onion, Parsley, Sweet Potato, Rhubarb, Asparagus, Horseradish plants. Also Aster, Geranium and other flowering plants.

STRAWBERRY PLANTS for August and Fall planting. Pot-grown and runner plants that will bear fruit next summer. Also Raspberry, Blackberry, Gooseberry, Currant, Grape plants, Fruit Trees, Shrubs for fall planting. Catalogue free.

HARRY D. SQUIRES, Good Ground, N. Y.

Garden and Truck Crops

TIMELY NOTES

The Early Onion Crop

Early onions from sets are finer than they have been for years and they promise to sell very well this season as the crop from California is reported to be very short and the Texas crop was hurt by adverse weather and most of it has been shipped to market. Due to transportation conditions western onions should be retained there for the western cities so that the eastern growers might have the entire market to themselves. The eastern crop usually goes to market in the bushel hamper. This season all packages are hard to procure, even at enormous prices: hampers are selling at 16 cents each, or more.

Cantaloupe Lice

Just as the first fruits are forming on the cantaloupe vines, the first infestations of the cantaloupe lice may usually be detected. The lice will congregate on the under side of the leaves where they will not be seen by the inexperienced grower. As these insects do not eat the foliage, they cannot be poisoned, therefore, it becomes necessary to adopt other means of control or prevention. Control may be had by spraying a tobacco extract solution onto the bodies of the insects. However, as the insects congregate on the under sides of the leaves, it is a very difficult proposition to destroy the pest unless the work is done at the last cultivation when the vines are turned upside down. A most excellent and practical thing for every grower to do is to go over his field carefully at the right time to pick out any infected hills. These may be destroyed by placing a handful of hay under the vine while it is quickly burned. If the grower attempts to carry the infected hill from the original spot, the lice will drop from the disturbed vine and all the vines along the path will soon become infested. Melon lice are rapid breeders; however, if the first hills to be infected are destroyed, serious infestation and destruction will be prevented in a very practical and easy way.

Old Seed Better Than New

Truck growers in the northern part of Monmouth Co., N. J., have a reputation for knowing just exactly what they are doing. Three years ago I heard one of them, Mr. Charles Hulsart say that two or three years old cantaloupe seed was more desirable than new seed because the old seed produced smaller vines and more melons closer to the hill than new seed. It seemed rather strange to me at the time, but since then I have found that the same idea prevails about cucumbers, watermelons, squashes, radishes, etc., not only in Monmouth Co., but in Gloucester, Burlington and Cumberland Counties, N. J., as well. Naturally, I have had to accept the idea as a fact and on several occasions I have said that the Monmouth County truckers believe that they get those results from old seed. Now I hear that Mr. Chauncey West, of Monroe Co., N. Y. advocates the use of cucumber seed in the greenhouses that is from two to five years old because such seed is less apt to produce excessive foliage and will produce more cucumbers. Mr. West is an expert greenhouse man and is one of the best selecters of vegetables in the country and he "comes from a distance", therefore, when his evidence is added to the testimony we will have to accept the matter as a fact. This means that we should save a great many more seed this year, of the crops mentioned above, than we had intended to save simply for next year.

Pick Sugar Corn Early

Careful chemical analysis has shown that when sweet corn is just picked, it contains a large amount of sugar; but after it has been off the stalks four hours it will have lost half of its sugar content. City folks do not realize why the corn is a little flat when they get it. Naturally, they imagine they must have it very young or it will be tough. Therefore, the grower should make an effort to pick the ears just as soon as the kernels at the tips are a little over half filled out. This pleases the consumer, the one who is paying the bill. Furthermore, if the grower will pick the corn just when it reaches the most desirable stage the sweet corn will be lighter to haul and above all it will contain much less plant food than it would if it was well filled out. Another thing worth considering is the corn ear worm. By picking the corn as soon as possible the ears will still contain the worms and thousands of them will be sent to the city markets with the corn; but if we wait until the corn is a little tough the worms will have crawled out and will be left in the neighborhood to attack the next planting of corn as it becomes ready to pick.

A Visit to Long Island

I lately returned from a short visit to Long Island. The usual large acreage of early potatoes (Cobblers) on Long Island is looking very fine. The growth of vines is very heavy and fill the rows. This is somewhat different from many of the fields near Philadelphia.

In talking with the Long Island growers I find they generally use more than a ton of fertilizer per acre, and get the crop into the market just as quickly as possible. The potato crop is followed by lettuce, turnips or spinach. Many of the fields are planted with every fifth row a blank. This is planted about June 25 to Hubbard squash. If the growers around Philadelphia should do that I am sure they would have to get a crop of peas from the fifth row before the squash could be planted.

Away out on the eastern end of Long Island the specialists in the production of Brussells sprouts were just getting ready to set their plants. The rows were spaced three feet apart each way and the soil was well enriched. Cauliflower seedlings were just coming up. The plants will not be set until sometime in July. The market gardeners on the western end of the island have had a very good spring, and just now early cabbage is selling exceptionally high because the submarines have checked shipments from the south.—R. W. DeBaun.

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On improved road, close village, schools, churches, stores, creamery, etc. Good tillage land, spring-watered pasture, estimated 400 cords wood. Variety fruit. Good 7-room house, 2 big barns, poultry house, spring water to buildings. To quick buyer retiring owner includes pr. horses, wagons, plows, harrows, cultivator, mowing machine, etc., only $1200, part cash. Details page 6 Strout's Big Catalogue of this and other farm bargains many with stock, tools, growing crops, mailed free.

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DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent express prepaid for $1

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EGGS Etc.—Small consignments from producers in your territory bring very attractive prices NOW. Prompt returns always. Refer to Dunn or Bradstreet. Ship us your next case.

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Write for full particulars regarding our Thrift Stamp offer to boys and girls.

PENNSYLVANIA FARMER
261 S. 3rd Street, Phila., Pa.

PENNSYLVANIA SHORTHORN BREEDERS MEET

The Southwestern Pennsylvania Shorthorn Breeders' Association, composed of Washington, Greene, Fayette, Allegheny and Westmoreland Counties breeders, held its anual meeting, June 13th, at the farm of George Strosnider, Greene County. While this is a young organization, only having been organized a year ago, some of the members are old breeders of Shorthorns and the Association has a broad conception of the work ahead. Probably the most advanced step taken by the Association was as follows:

"That the Association offers to arrange, finance and assist in locating and purchasing pure bred Shorthorns for any boy or girl who wishes to start breeding Shorthorns. Those wishing to start should get in touch with officers or members of the Association or the county agent of his county for detailed information as how to proceed. The Association extends full membership, without fee, for a period of two years to any boy or girl starting to breed Shorthorns."

It was also decided to hold a consignment sale in the spring of 1919, the time and place to be left to the decision of the Executive Committee. This being a bluegrass section, the sale will probably be held the later part of July, which time the animals will have put on a nice finish on the bluegrass. Dr. H. H. Havner, of State College, gave some statistics on the live stock situation of the world. The consideration of the food situation on a world basis is a new viewpoint to many, but it is one that all live stock breeders and food producers must take in the future. Dr. Havner believes that there is an assured place for the breeder of good live stock for many years to come. He also pointed out that Shorthorn breeders should give special attention to the sale of their bulls in the general farming sections where there are from 5 to 8 cows kept in part for milk and butter and in part for raising a good type of breeding stock. Shorthorns are in demand in such sections and they work a wonderful improvement on stock where they are used.

An inspection was made of the herd of Mr. Strosnider and possibly one of the facts brought out in this connection was the most encouraging feature of the meeting. Mr. Strosnider's entire herd of about 30 individuals with the exception of two purchased during the last year, have been developed from one cow; Lida 3d, purchased in 1882 at the age of 8 years with a bull calf at her side. This cow lived until she was 20 years old, giving a calf each year until she was 18 years old. The first calves Mr. Strosnider secured were bulls. It is significant that he continued in the face of these disappointments; many would have become discouraged of building up a herd with such results. After this, however, she dropped several heifer calves with the result that for several years past Mr. Strosnider has had his farm stocked to practically its full capacity with the progeny of this one cow. He sold over $1,000 worth of bulls from her at a time when bulls were going at less money than beef animals are bringing today.

The officers elected for the coming year are as follows: President, William Thompson, Fayette County; Vice-President, Andrew Brown, Fayette County; Secretary-Treasurer, R. L. Munce, Washington County.

KEEP FLIES OFF HORSES

To keep flies off horses and cattle, use repellents if you want to make a thoro job of it. The use of nets on horses keeps some of the flies off, but since most of the flies attack about the legs, the nets furnish little protection. The use of repellents will keep most of the flies off and it will not be necessary to use a net.

A moisture is recommended for horses consisting of two quarts of crude fish oil, one point of crude carbolic acid, one ounce of pennyroyal, eight ounces of oil of tar, and 1½ quarts of kerosene. If pennyroyal is too expensive it may be omitted. This mixture should be put on with a spray. It is not sticky and will not injure the hair or skin. If used properly, one gallon of it will be sufficient for two teams for almost an entire season. When the flies are troublesome apply a little of the repellent by means of a hand sprayer in the morning, again at noon, and it is well to make another application at night. This will allow the animals to eat and rest in peace.

"BOYS' BABY BEEF BOOK"

The farm boy of today is the farmer of tomorrow, and it is up to him to "carry on" where his father left off and do a better job of it, too, as land gets higher demanding a higher-priced product. To aid the boys, and also the girls, the American Aberdeen-Angus Breeders' Association has issued a booklet with the above title. It contains pictures of the winners in Canada and the United States Baby Beef and Calf Club Contests, as well as stories on the Ft. Worth Fat Stock Show, Wisconsin State and Canadian champions. Write for it at the Chicago office, 817 Exchange avenue.

HOW TO PREVENT BOTS

Bots in the horse's stomach are hatched from the yellow eggs which are laid by nit flies on horses' legs and on their throats. If the animal is permitted to lick itself some of the eggs or the young maggots are carried to the mouth, and they later reach the stomach, where they attach themselves and feed on the food consumed by the animal. T. J. Talbert of Missouri College of Agriculture recommends that the eggs be destroyed before the animal licks them off, by rubbing the hairs bearing the eggs lightly with a rag moistened with coal oil.

BUTTERMILK FOR BROOD SOWS

In answer to "Subscriber" Union Co., regarding feeding buttermilk to brood sows, also your request for experience, I will state mine. For a period covering about nine years I fed buttermilk to hogs, brood sows included. Often times I have seen sows before and after farrowing drink their fill of buttermilk with no ill effects. Those same sows would farrow from eight to sixteen pigs, and often raise all. If "Subscriber" lost sows from feeding buttermilk, he probably had some with salt in it. No hog cares much for salt, altho I do not think a little would kill them.—G. D. C., Chester Co., Pa.

Build a CONCRETE Vegetable Storage Cellar Now

Keep apples, potatoes, onions and other vegetables fresh throughout the winter and spring. Store them when gathered. Market them when prices mean a profit.

If you own a concrete storage cellar, you have not only solved the problem of even food supply for yourself but have helped greatly to solve it for others.

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FREE CATALOG write for your copy today. Shows serviceable shoe styles for Men, Women and Children.

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An absolute fact. A Jersey farmer brought his assortment of old bags to us and asked us what they were worth. We told him and gave him on the spot check for $148.46. Previously he had been offered $90.00 on the same allotment of bags. (Name and address of farmer given to any one on request.)

For Best Price Send Old Bags to Knott

In business 30 years and absolutely dependable. You get a square and honest deal from this concern. We pay top market prices and send check or pay cash immediately on receipt of goods. Write us for price list or bring your bags to us yourself. Phone us, if desirable, and compare our prices with others.

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We won 14 firsts and 8 2d prizes N.Y. state 1917. "It pays to buy the best;" send for catalog. Book your orders early for 1918. HENRY L. WARDWELL, BOX Z, SPRINGFIELD CENTER, N. Y.

For Sale Cow Peas $3.00 and $3.50 bushel. Soy Beans $3.50 and $5.00 bushel. Crimson Clover Seed $15.00 bushel.
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For the big healthy ones feed MARTIN'S TANKAGE None better. Write for feeding directions and prices.

D. B. MARTIN CO.,
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Farm Products Prices and Prospects

POTATO GRADES

Washington, D. C.—The Department of Agriculture and the Food Administration jointly recommend and urge the adoption of the following grades, which in their opinion will meet the needs of the Federal Reserve Board—which has authorized the making of loans for warehouse receipts on properly graded potatoes—as well as the needs of growers, dealers and consumers:

"U. S. GRADE NO. 1"

"This grade shall consist of sound potatoes of similar varietal characteristics, which are practically free from dirt or other foreign matter, frost injury, sunburn, second growth cuts, scab, blight, dry rot, and damage caused by disease, insects, or mechanical means. The minimum diameter of potatoes of the round varieties shall be one and seven-eighths (1⅞) inches, and of potatoes of the long varieties one and three-fourths (1¾) inches. In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and, in addition, three per centum by weight of any such lot may be below the remaining requirements of this grade.

"U. S. GRADE NO. 2"

"This grade shall consist of potatoes of similar varietal characteristics, which are practically free from frost injury and decay, and which are free from serious damage caused by dirt or other foreign matter, sunburn, second growth, cuts, scab, blight, dry rot, or other disease, insects or mechanical means. The minimum diameter shall be one and one-half (1½) inches. In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and, in addition, five per centum by weight of any such lot may be below the remaining requirements of this grade."

For the purpose of the above recommendations no attempt has been made to provide grades for potatoes of extra finer quality and size, or for lots of potatoes composed of different varietal characteristics, or for potatoes under the minimum diameter and other requirements of U. S. Grade No. 2.

Unless shipped in bulk, potatoes of U. S. Grade No. 1 should be placed only in new, clean sacks or barrels, which should be well filled, securely sewed or covered and in addition to any necessary statements or marks, should be plainly marked "U. S. No. 1."

Containers of potatoes of No. 2 grade also should be plainly marked "U. S. No. 2."

NEW JERSEY POTATO GROWERS MEET

The following is copied from a report of a meeting of the New Jersey Potato Growers' Association which appears in the Market Growers Journal:

"The problems of the various counties were discussed. The problem of grading seems to demand the most immediate attention. The committee voted unanimously in favor of grading all New Jersey potatoes and went on record as offering their assistance to the Food Administration in enforcing their rules. Information was received that the Food Administration has no intention of fixing prices on potatoes.

"A committee was appointed to confer with the New Jersey State Agricultural Experiment Station representatives so that much needed investigation and experiments on potatoes might be developed and carried out along the most essential, timely, and practical lines.

"This committee met with the director and potato men of the experiment station, and it is believed that the results of that conference will mean the carrying on of the most extensive and important potato work ever carried on in the state.

"The executive committee held their last meeting just before Memorial Day. Dr. Mell. T. Cook led the discussion on the certification of New Jersey second (late) crop seed. Because most of the diseases which certification is to avoid are not present in New Jersey, no action was taken.

Well Graded Potatoes Bring the Highest Prices

"Following the reports of several committees and a lively discussion on grading, the following telegram was sent to the United States Food Administration:

> "'Will the United States Food Administration enforce grade standards on all potatoes for shipment? Will dealers forfeit license if they ship ungraded potatoes. New Jersey State Potatoes Association needs definite advice at once.'"

The following reply was received:

> '"Yes, potatoes must be graded according to U. S. standard grades. Violators of Food Administration rules subject severe penalty.'"

"The matter of a summer meeting was discussed, and it was felt that such a meeting should be held in the early part of July in Monmouth County, and a committee, composed of W. Rhea Moreau, G. C. McDowell, and Walter L. Minch, was appointed to arrange for the details.—R. W. DeBaun."

BLACK OR YELLOW LOCUST WANTED

Farmers who have good locust timber, suitable for the manufacture of ship treenails will do well to communicate with the purchasing division of the Emergency Fleet Corporation, which announces that it will give prompt attention to inquiries from those wishing to be put in touch with treenail manufacturers.

Production and Buying of Treenails Centralized

Making treenails is distinctly a business in itself. There is a very large percentage of waste in manufacture, partly because locust is a very defective wood and partly because the shipbuilding specifications are very exacting. Most if not all of the manufacturer's profit is likely to come from knowing how to dispose of such material advantageously. The individual farmer or small millman is seldom in a position to do this. Farmers having locust to dispose of will therefore do best to get in touch with some established treenail manufacturer.

How to Market Locust

What the farmer can expect to get for his locust will vary with the grade of the timber and the cost of laying it down at the mills. Some manufacturers buy the timber on the stump, others by the cord or thousand feet, in which case the farmer can do the cutting himself. Selected stock will bring the best prices, especially when the manufacturer has drawn his specifications high so as to get the best grades only.

Owners of locust desiring to be put in touch with a treenail manufacturer should address the Purchasing Division, Emergency Fleet Corporation, Washington, D. C. Full information should be given as to the nature of the timber, its approximate quantity, and the location with reference to the nearest shipping point. The name of the railroad serving the shipping point should also be given.

SPECIAL REPORT FOR EARLY APPLES

The early apple report is the first of its kind to be issued on early varieties of apples, and with the following comments is designed to be of special value to those interested in the marketing of early apples, by acquainting them with conditions in the competing districts. There are in United States four large, well defined districts, which produce early apples in large quantities for the commercial market. Prospects in the two eastern districts follow.

Coastal early apple district.—New Jersey and the Delaware peninsular. Early varieties in this district at present indicate condition of 72 percent or a production of 121,000 barrels commercal, as compared to a final figure of 101,000 barrels in 1917. Baskets are largely used in shipping. Monmouth County, N. J., which ships many cars of Gravenstein, Red Astrachan, English Codlin and Wealthy to the New York market, shows a 78 percent condition. Season is two weeks advanced; considerable blight showing up. Burlington County, N. J., reports 81 percent prospect for early varieties. There is a good crop of Early Ripe. There is some coddling moth injury as lack if labor prevented proper spraying in some of the orchards.

Delaware shows a condition of 68 percent and produces about 40 percent of the early apples in this coastal district. The district about Wyoming or Kent Counties indicates 75 percent of a crop, Transparent and Williams Early Red promising in most cases a full crop. Red Astrachan and Early Ripe are more spotted. Sussex County reports a much lighter crop, indicating 50 percent condition due partly to storm injury the latter part of April. About Bridgeville Red Astrachan are full, also the older Transparent trees; younger trees have a poor crop. Transparent will begin moving the last of June.

SHENANDOAH - CUMBERLAND DISTRICT.—This district, including the territory from Staunton, Va., to Chambersburg, Pa., and tributary counties, at present indicates a crop about the same as last year. It has a condition of 55 percent or approximately 110,000 barrels of early apples, located principally in Washington County, Md., Berkeley County, W. Va., and Frederick County, Va. Washington County, Md., has a large acreage of early apples about the town of Hancock. The crop here is about 60 percent. Martinsburg district indicates a light crop. Keyser and Romney sections in West Virginia indicate about half a crop with orchards very spotted and fruit not setting in many orchards. Yellow Transparent is the principal early commercial variety in the Shenandoah - Cumberland district. Baskets will be largely used for shipping.

Waste reclaimed is ground regained.

Fight to conserve; conserve to fight.

To waste is to give "aid and comfort" to the enemy—and that is treason.

Poultry

CEMENT FOR POULTRY HOUSE FLOORS

It is hardly likely that many poultrymen will go to the expense of building new houses this year with the present high cost of building materials and the scarcity of labor. Old houses may be remodeled to afford greater efficiency, however, and to provide for the increased flocks that will have to be housed when winter quarters are required in the fall.

The use of cement floors in poultry houses has been advocated by many poultrymen and as heartily condemned by as many more. I am sure the latter are blaming the cement floors for being damp—its principal objection—when the fault does not lie with the material, but the manner in which it has been laid. I have had cement floors which were so damp as to be a menace to the health of the flock and required the conversion of the building to some other use. The fault lay in the construction of the floor. A cement floor properly made is as dry as any other floor.

A cement floor, if properly built, is cheaper and more sanitary than a wooden floor, lasts longer, is easier to clean and is rat-proof—the latter a big factor in its favor. If your land is fairly level and sand, stone and gravel are to be had in your locality for the hauling, then the best and cheapest floor for your poultry house is cement.

The floor should be raised at least six inches from the level of the ground, filling in with stones, gravel and finally sand. I have had good results by laying tar paper over the sand. The cement is then laid on the paper, making the floor warmer and preventing water from entering.

A concrete foundation should extend below the frost line. A trench one foot wide and from two to three feet deep should be dug. Fill this trench to within a foot of the top with stones; then fill the balance with cement, carrying the wall about six inches above the ground level. Before the cement hardens it is advisable to place bolts every 10 or 15 feet to hold the sills in place.

The principal requirement of a good poultry house is that it should be absolutely dry. Dampness causes roup, unhealthy birds and a scarcity of eggs just at the time when they are at their highest figures. I have found a cement floor built according to this plan to be dryer and easier cleaned than either a board or dirt floor. I have remodeled several old poultry houses, placing cement floors and foundations in them, and in no case has there been any trace of dampness.—A. J. Bradley, Montgomery Co., Pa.

Ample Preparations For a Big Honey Harvest

NATIONAL POULTRY FEDERATION

At a meeting of the Advisory Council of the National War Emergency Poultry Federation held in Chicago, June 10-11, by-laws to govern the Federation were completed and adopted, thus assuring a nationwide and complete poultry organization during the war which has been created for the purpose indicated by its name. This Federation movement grows out of the big conference of poultry interests held in Chicago, March 29-30, reports of which were widely circulated.

Officers of the Federation have been chosen to serve until the July meeting of the Advisory Council which will be held in Chicago beginning the third Wednesday, at which time there will be at least a two-day session with an interesting program bearing on the work already in hand and to follow. Preparation of this program is under direction of Prof. Jas E. Rice, Ithaca, N. Y., who expects to have Dr. McCollum, the famous food research chemist, attend the meeting and deliver an address.

REPORT OF VINELAND EGG LAYING AND BREEDING CONTEST FOR MAY, 1918

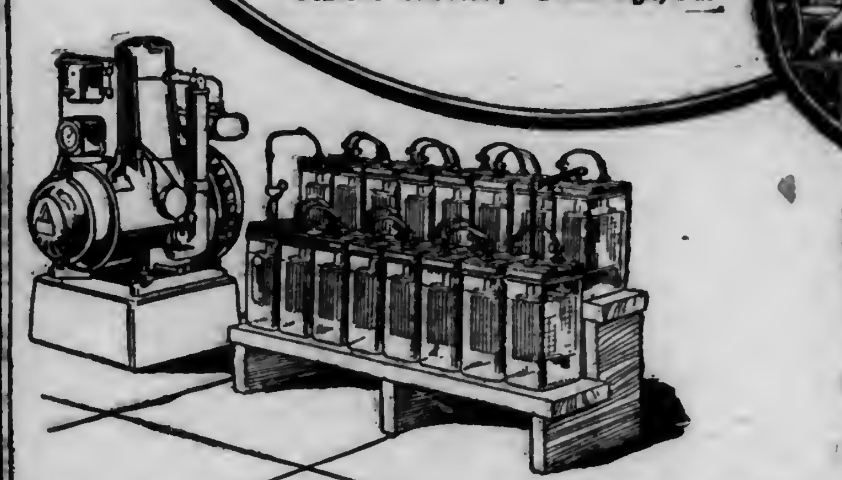
Second or Yearling Year

The production at the end of May was 76,130 eggs, or an average production to date of 31.2 percent. The production for the month was 17,546, a production of 56.6 percent.

The special cash prizes for the month have been awarded as follows: To pens Nos. 41 and 76 for the highest production for any of the pens for the month, having laid 245 eggs, a production of 79 percent. These pens are White Leghorns. Pen 41 is owned by Avalon Farms, Connecticut, and Pen 76 by P. G. Platt, Pennsylvania. To hens Nos. 414 and 930 for the highest individual production for the month, each hen having laid 31 eggs, a production of 100 percent. These hens are both White Leghorns. No. 414 is owned by Avalon Farms, and No. 930 is owned by Mr. W. K. Wixson, Pennsylvania.

A table follows showing the percent production for the month, and to date for each of the breeds represented:

Breed	May	To-date
White Leghorns	67	37.2
Black Leghorns	61.7	36.8
Buff Leghorns	53.5	33.7
Columbian Wyandottes	45.4	33.6
White Plymouth Rocks	44.6	30.6
Barred Plymouth Rocks	44.2	37.0
Columbian Plymouth Rocks	43.5	35.4
White Wyandottes	43.3	35.5
Rhode Island Reds	38.8	34.2
Buff Wyandottes	34.2	28.1



DELCO-LIGHT

Keeps the Young Folks on the Farm

Delco-Light by supplying plenty of clean economical electric light and furnishing Electric Power to pump water and operate small machines, makes the home a better and more enjoyable place to live. It gives the young folks the advantages and comforts that formerly attracted them to the city.

Delco-Light is a complete electric light and power plant for farms and suburban homes. Easy to operate, economical, very efficient.

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J. S. Snyder,
824 N. Broad St., Phila., Pa.

Suburban Electric Development Co.
342-344 3rd Ave., Pittsburgh, Pa.

SELF CRANKING
AIR COOLED
THICK PLATE
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BATTERY
BALL BEARINGS
NO BELTS
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WRITE—get wonderful 1918 money-making opportunity with an
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Get Cash
For Your Empty Bags
Don't throw away a single bag—they're worth money to you. Prices are 'way up now. Cash in on all you have. But be sure you get our prices before you sell a single one. We guarantee most liberal grading. Over 20 years in business is your assurance of a square deal every time. We buy any quantity. Freight paid on all shipments to Werthan. Find out what real satisfaction is. Write quick, stating what you have. Address
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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 24, 1918.

While the offerings of new potatoes have not been as heavy this week as they were last, they are still fully equal to the demand. There were about 90 cars on hand at the opening of business on Monday morning, and altho there was rather a weak feeling at the opening, it was not for long, as a stronger tone soon developed, and by the close the market was strong at about the same basis as the closing prices last week. Eastern Shore potatoes have been bringing the highest prices of any on the market this week. These have sold at $3.25@3.5C per barrel, with some sales at $3.75. These prices are for prime No. 1 stock. No. 2 potatoes from all sections have been selling from $1.25@2 per barrel. A few potatoes from New Jersey have made their appearance this week, but in hardly sufficient quantity to quote intelligently, the few sales reported having been made around 65 cents per basket for best, with small stock lower. There are but very few old potatoes left. A few from Pennsylvania shippers, however, have been here this week and sold around $1.50@1.75 per cwt. The few remaining supplies of sweet potatoes are selling at unchanged prices; viz: $1.50@3 per hamper as to size.

Vegetables

This week will about see the finish of the nearby asparagus for the season. Taken as a whole, it has been a most successful season for both shipper and receiver as fine prices have prevailed, and the prices for the wind-up are strong, Colossal is selling at 25@30c per bunch; fancy, 18@22c; prime, 12@18c; culls, 9@12c. Prices on both green and wax beans from New Jersey points have been holding up remarkably well. At this writing most green beans are selling within the range of $1@1.25, and wax beans at 90c @$1.25. These prices are fully 25@40c per basket higher than was prevailing a year ago at this time. New beets are also in active demand and bringing good prices, ranging from 3@5c per bunch. There is also a ready market for fancy, nearby carrots which are selling at 2@4c per bunch. Cabbage is very scarce and the high prices that were prevailing last week are still being maintained. Some fancy Pennsylvania cabbage is selling about 25c per barrel higher. Best Eastern Shore cabbage, $3.50 per crate; Norfolk, $2.50@3. Some Pennsylvania cabbage is selling as low as $2.50 per barrel, but the most of the sales are being made at $3@3.25 per barrel. New Jersey cabbage is also a little firmer, selling at 75@85c per ⅝ bushel basket. Nearby Pennsylvania cauliflower is selling at 15@16c per head when fancy, but some stock is very poor and selling as low as 5@6c per head.

There have been no lima beans on the market for several days and some fancy stock would command high prices. Lettuce is in free supply from Pennsylvania and New Jersey points and unless strictly fancy meeting slow sales. Pennsylvania barrels are selling all the way from $1.25@2, while New Jersey box lettuce sells from 75c@$1.40. Mushrooms from Pennsylvania points are in heavier supply and lower, selling from 20@40c per pound. Onions are showing practically no change from last week, the advance having been fully maintained. Texas onions, $1.65@1.75 for best stock. New Jersey onions are much more plentiful and showing better quality and a freer movement at 75@85c per ⅝-bushel basket. Quite a few Eastern Shore onions are also arriving and selling at $1.10@1.25 per hamper. New Jersey peas have taken another sharp advance under the light supplies, and are now selling at $1.60@1.75 per ⅝-bushel basket. Southern peppers are about steady at $1.75@2 per crate for best stock, with poor and small are selling on down as low as $1. New Jersey peppers are a trifle stronger, selling generally at $1 @1.25 per ⅝-bushel basket. Pennsylvania and New Jersey radishes are practically unchanged at 2@3c per bunch. Nearby rhubarb is not quite as active and prices are a little lower, ranging generally at 2@3c per bunch, altho an occasional sale of fancy large exceeds these prices. Scallions are in rather light supply and firm at $1@1.50 per 100, as to size and quality.

Spinach is a very scarce article and the few boxes of Pennsylvania stock that has been on the market this week has found prompt sales at $1.25@1.40 per box. New Jersey squash is much more plentiful and the market is inclined to ease off. At this writing sales are being made mostly at $1 @1.25 per basket, but much lower prices will probably prevail very soon. Tomatoes are in strong demand and bringing fine prices. There is quite a sprinkling beginning to appear from New Jersey, which before another week rolls around will be supplying the bulk of the supplies. At this writing New Jersey tomatoes are selling at $1.75@3.50 per basket or crate, as to quality; but as supplies are increasing daily these prices will not long be maintained.

Fruits

Strawberries are a very scarce commodity at this time, the only arrivals being a few from Pennsylvania which are bringing the fine price of 30@40c per quart. Raspberries on the other hand are in quite free supply, but at the same time are bringing good prices, ranging generally from 10@12c per pint. Blackberries are also in fair supply from nearby New Jersey and Delaware and Maryland points, and while prices are a trifle lower than last week, are still high, ranging generally from 20@25c per quart. Huckleberries are also a trifle lower but realizing fine prices for the shipper, sales ranging mostly from 24@28c per quart, with a few poor down to 20c. Red currants continue in light supply and unchanged in price at 15@17c per quart. Sour cherries have taken quite a jump over last week's prices, with supplies rather light and demand active. Best stock is now selling at 12@15c per pound, which is 2@3c per pound higher than last week. Sweet cherries continue extremely scarce and bringing the fine prices of 25@30c per [illegible]. Gooseberries remain about steady [illegible] 12c per quart.

Quite a sprinkling of new crop apples from Delaware are beginning to make their appearance. Many of them are extremely small and move very hard at low prices. Fancy No. 1 fruit, however, is in good demand at $2.50@3 per hamper. Cantaloupes are now in fairly liberal supply, but demand is active and good prices are prevailing. Standard crates are selling at $3.25 @4; ponies at $3@3.50, and flat crates at $1.25@1.75. A few Honeydews sold at $4 per crate. Watermelons are unusually scarce for this season of the year, and high prices are prevailing on fancy large melons, with smaller sizes selling lower accordingly. On Monday one car averaging 28 to 30 pounds each sold at $600 per car, while a smaller car averaging about 20 pounds sold at $225 per car.

Poultry

Altho the supplies of live poultry have been somewhat heavier this week, there has been quite an active demand and prices on fancy stock are being well maintained. Fowls are selling at 32@34c per pound as to quality. Spring chickens are ruling about steady at former prices, which are as follows: Spring chickens, not Leghorns, weighing 1¾@2 lbs. each, 50@55c; 1@1½ lbs. each 46@48c. White Leghorn spring chickens, as to size, 40@45c. Old roosters sell all the way from 22@26c, as to quality. Ducks are in moderate supply and demand at 26@30c.

Eggs

Under the light supplies and a good demand the egg market is firm and higher. There is a quick outlet at the advance for the limited supplies of strictly fine new-laid eggs at full prices and occasionally a premium is being paid for best stock. Much of the supply, however, is more or less defective and these grades have to be shaded to meet the views of buyers. Nearby current receipts are selling at 37½@38c per dozen; fine firsts, 39@39½c; Western eggs, 37@39½c as to quality.

BALTIMORE PRODUCE

Baltimore, Md., June 24, 1918.

Produce.—Potatoes. white, Maryland and Pennsylvania, $1.25@1.35 cwt; do., New York, $1.25@1.35. New potatoes, $2@3.75 bbl. Asparagus, $1.20@2.50 doz. Beans, green, $2@2.25 basket; do., wax, $1.90@2.15 basket. Beets, 3@4c bch. Cabbage, new, $3.25@4 crate. Cucumbers, $1.50@2 crate. Lettuce, 30@50c basket. Onions, yellow, $1.50@1.75 crate; spring, $1@1.25 per 100 bchs. Peas, $1.80@2.15 basket. Radishes, $1@1.25 basket. Tomatoes, $1.50@3.25 crate. Rhubarb, $2@3 per 100.

Fruit.—Cherries, nearby red, 12@14c lb; do white, 10@12c; common sour, 9@10c lb. Peaches, $1.75 carrier. Blackberries, 17@18c qt. Raspberries, red, 13@15c pt; 20@24c qt. Gooseberries, 7@7½c lb.

Butter.—Creamery, western fancy, 45@46; choice, 43@44c; pound prints, 45@46; do., firsts, 39@40c. Nearby creamery 40@41c; do., firsts, 39@40c. Dairy prints, 31@32c; do., firsts, 30@31c.

Eggs.—State, Pennsylvania and nearby, 35@36c; Eastern Shore and Virginia, 35@36c; Southerns, 35c.

Live Poultry.—Chickens, 30@33c; do., springers, 45@50c; old roosters, 23@24c; old hens, 34@35c lb; ducks, 24@28c; pigeons, 35@40c pr; guinea fowls, 60@75c each.

Hay and Straw.—No. 1 timothy, $26@27.50; standard timothy, $26@27; No. 2 timothy, [illegible]26.50; No. 1 light clover mixed $24@25; No. 2 light clover, $22@24. No. 1 clover mixed, $23@24; No. 2 [illegible], $14@20. No. 1 straight rye straw, $16.50@17. No. 1 tangled, $15.50@16; wheat straw, $9@12; oats straw, $9@12.

Grains.—Wheat, bag lots, $2@2.15 bu. Corn, bag lots, white, $1.80 bu; yellow ear corn, $1.58 bu. Standard white oats, 85@86c; No. 3 white, 85@85½c. Rye, No. 2 western, $1.95; bag lots, $1.55@1.65 bu.

PITTSBURGH PRODUCE

Pittsburgh, Pa., June 24, 1918.

Asparagus, southern, $2@3 box; do., home grown, 70@80c per bundle. Beans, green, $2.50@3 hamper. Beets, 40@45c per 100 bchs. Cabbage, $3@3.75 crate. Carrots, new, 50@90c bkt. Cucumbers, $2 @3 hamper. Lettuce, head, $1.50@1.65 hamper; do. leaf, 30@40c doz. Onions, $2@2.50 crate; yellow, $1@1.50. Peas, $1.75@2.50 hamper. Potatoes, new, $3.25 @4.75 bbl. Radishes, 20@30c doz. Spinach, 40@50c bu. Tomatoes, $1@2.50 flat. Green corn, $6@7.50 bbl.

Apples, $5@7.50 bbl. Strawberries, $5@7 crate; do., 23@25c qt. Cherries, $3@5.50 crate. Red raspberries, $8.50@9 crate; do. black, $6@6.50. Dewberries, $6.50@7 crate.

Live Poultry.—Hens, 31@32c lb; roosters, 20@21c; turkeys, 25@28c; ducks, 28 @30c.

Dressed Poultry.—Hens, 36@40c lb; turkeys, 38@40c; ducks, 35@36c; fowls, 38@40c.

Elgin prints, 48@48½c; Elgin tubs, 47½ @48c. New York cheese, 25@25½c; do., Swiss, 33@34c. Selected eggs, 38@39c; eggs at mark, 36½@37c.

Grain and Hay.—No. 2 yellow ear corn, $1.75@1.80 bu; No. 3 yellow shelled, $1.75 @1.80; No. 2 white oats, 85½@86c; No. 3 do., 83½@84c bu; standard oats, 84@85c bu; No. 1 timothy hay, $19@19.50 ton; No. 2 do., $17.50@18. No. 1 light mixed, $17@18. Rye straw, $11@11.50. Oat straw, $9.50@10. Wheat straw, $9.50 @10.

LANCASTER PRODUCE

Lancaster, Pa., June 24, 1918.

Heavy rain in the early morning caused a small attendance of farmers at the markets on Saturday. However, produce was abundant and met a quick demand. Prices for new potatoes were materially lower, some sales being reported as low as twenty-five cents a half-peck. Eggs were over-abundant and sold from forty to forty-two cents a dozen. Strawberries and asparagus have disappeared.

Butter and Eggs.—Creamery butter, 55c per lb; country butter, 50@55c per lb; fresh eggs, 40@42c per dozen.

Poultry.—Dressed old chickens, $1.25@1.75; dressed young chickens, $1.25 each; live chickens, $1.75@2 pair; live old chickens, 35c per lb.

Vegetables and Fruits.—New peas, 20@25c ½ pk; new beans, 25@30c ½ pk; tomatoes, 20c box; lima beans, 18c pint; spinach, 20c ½ pk; old potatoes, 8@12c per ½ pk; 40@75c bu; new potatoes, 25@40c ½ pk; sweet potatoes, 25@30c ½ pk; lettuce, 5@12c head; beets, 6c bunch; raspberries, 15@20c box; apples, 35@40c ½ pk.

Grain Market.—Milling wheat, $2 bu; rye, $1.90; oats, 80c; shelled corn, $1.50; No. 1 timothy hay, $20 ton; mixed hay, $18; wheat straw, $14; oat straw, $10.

YORK PRODUCE MARKET

York, Pa., June 24, 1918.

There was good attendance at the city markets during the past week. As a rule, all kinds of produce is selling somewhat better than during the same period last year. Eggs and poultry are scarce.

Eggs.—32@35c per dozen.

Butter.—Country, 45@48c lb; separator, 50c lb. Milk, 10c quart.

Poultry.—Springers, 35@40c lb; hens, 23@25c lb; dressed, 75c@$1.50 each.

Vegetables.—Potatoes, 6@10c ½ pk; 40 @50c bu; cabbage, 3@8c a hd; lettuce, 2@5c hd; beets, 5c bch; radishes, 2@3c bch; onions, 3@5c bch; lima beans, 18c pt; soup beans, 15c pt; turnips, 20c ½ pk; peas, 25@40c ½ pk; lard, 32@33c lb.

Fruit.—Apples, 40c ½ pk; strawberries, 8@18c bx; cherries, 8@20c qt; raspberries, 15c bx; currants, 12@15c bx.

Retail Grain Market.—Wheat, $2.25; corn, $1.90; oats, $1.10; rye, $2.25; bran, $2.25 cwt; middlings, $3 cwt.

Wholesale Grain Market.—Wheat, $2.15; corn, $1.45; oats, 85c; rye, $2; bran, $37 per ton; middlings, $39 per ton.

NEW YORK PRODUCE

New York City, June 24, 1918.

Butter is steady with little change in prices. Cheese is quiet. Trade in eggs is steady with little change and no surplus of supplies. Heavy fowls are slow, but some demand for light ones. Fruit and vegetables of all kinds are in fair to heavy supply with prices tending downward.

Butter extras, 45c; creamy extras, (92 score), 44¼c; firsts, 42½@44; packing stock, current make, No. 2, 32c.

Cheese firm; state whole milk flats, fresh, special, 23¾@24c; do. average run, 23½c.

Live poultry unsettled; broilers, 45@50c; other prices unquoted. Dressed steady, fowls, 30@36c; turkeys, 25@39c.

Eggs steady; receipts, 14,287. Fresh-gathered extras, 39@40c; fresh-gathered storage packed, firsts. 37@38½c; do., regular packed, extras firsts, 37@39; do. firsts, 35@37c; state, Pennsylvania and nearby western hennery whites, fine to fancy, 49@52; state, Pennsylvania and nearby hennery browns, 41@45c; do. gathered browns and mixed colors, 34@39c.

Vegetables.—Asparagus, fancy, $2.50@3.25; prime, $1.75@2.25; beets, per 100 bchs., $1@4; cabbage, per crate, $3@3.50; lettuce, per crate, 75c@$1.50; peas, large, per basket, $1.50@2; radishes, per 100 bchs., 50c@$1; scallions, per 100 bchs, $1; spinach, per bbl., 75c@$1.25.

Fruits.—Cherries, 6-lb. basket, 50c@$1.25; strawberries, 20@45c; raspberries, 10@16c pint; huckleberries, 20@27c qt.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 24, 1918.

Beef Cattle.—The regulations of the food administration for conserving beef influenced a very slow trade in all lines during the last few days and prices were generally lower. Offerings were light.

Steers, good to choice, $16.50@17.25; fair to good, $15@16.50; common to fair, $13@15; bulls, fair to good, $12@13.50; common to fair, $9@11.50; cows, fat, per lb., choice, 10½@12c; extras higher, fair to good, per lb., 8@10c; bologna cattle, choice, per lb, 5½@7½c; common, per lb., 4@5c; calves, extra choice, $18@18.50; fair to good, $16@17; common, $11@13; Tennessee, choice, $15@17; other southern, $9@14.

Sheep and Lambs.—Offerings were fairly liberal and the market was quiet, with prices of spring lambs a shade lower.

Sheep, sheared wethers, extra, $14@14.50; good to choice, $13@13.50; medium, $10@11; common, $6@8; ewes, heavy, fat, $11@12; spring lambs, choice, $21@21.50; ordinary grades, $16@18.

Hogs.—The market ruled firm under light offerings and a fairly active demand. Fine western stock was bringing quotations, but Delaware and Maryland hogs were selling at $17.50@18. Quotations for best western, $19.

City Dressed Stock.—Trade in steers, heifers, cows and calves were slow, the beef conservation regulations checking business. Values were largely nominal. Sheep and lambs were quiet and unchanged, while hogs were firmly held.

Steers, 24@29c; heifers, 22@25c; cows, 18@24c; calves, 26@27c; southern and barnyards, 16@20c; country dressed, 21@23c; sheep, choice, 27@28c; lambs, winter, 32@33c; do. spring, 36@37c; hogs, 25¼c.

LIVE STOCK MARKETS

Pittsburgh, Pa., June 24.—Cattle lower; supply, 110 loads; prime, $16.75@17.

Sheep.—Lower; supply, 20 double decks; prime wethers, $13@13.25; culls and commons, $5@8; lambs, $8@16; veal calves, $17@17.50.

Hogs.—Active; receipts, 30 double decks; prime heavy, $17.70@17.75; mediums, $17.50@17.60. Yorkers and pigs, $17.60 @17.65; roughs, $14@15.

East Buffalo, N. Y., June 24.—Cattle.—Receipts, 5,000; easier; prime steers, $17.50 @17.75; shipping steers, $17@17.25; butchers, $12@16.50; yearlings, $13.50@16.75; heifers, $10@14.25; cows, $6@12.50; bulls, $7.50@12.50; stockers and feeders, $7.50@10.50; fresh cows and springers steady, $60@145.

Calves.—Receipts, 2,200; steady, $7@18.50.

Hogs.—Receipts, 6,400; steady to strong; heavy, $17.25@17.40; mixed and Yorkers, $17.40@17.50; light Yorkers, $17.75@17.90; pigs, $17.75@18; roughs, $15@15.25; stags, $11@13.

Sheep and Lambs.—Receipts, 1,400; slow and easy; spring lambs, $18@20, yearlings, $13@17; wethers, $13.50@14; ewes, $6@12.50; mixed sheep, $12.50@13.

Baltimore, Md., June 24.—Sheep and Lambs.—Choice, fat, sheep, 9@10c; fair, 6@8c; inferior, rough, $2.50@4; old bucks, as to quality and condition, 6@8c. Spring lambs, choice, fat, 18@19; poor to fair, 15 @17c.

Beef Cattle.—Young, fat steers, in prime condition, 13@15c; steers, 12@14c; oxen, 8 @10c; bulls, 8@11c; large, young cows, in good order, 8@11c; cows, poor to medium grades, 5@6c; fresh cows with calf, $50@90.

Live Pigs.—Pigs, as to size and condition, apiece, $4@6; shoats, apiece, as to size, $6@8.

Calves.—Choice, handyweight, 17½@18c; do., heavy, fat, 16½@17c; good veals, 16½@17c; heavy, smooth, fat calves, head, $18@20; heavy or rough calves, $14@15; small, thin calves, $8@10.

NEW YORK HAY AND GRAIN

New York City, June 24, 1918.

Feed.—There appears to be little hope of much activity in mill feed until mills begin grinding the new wheat crop in volume, when they will doubtless have larger quantities to offer. In the meantime consumers are forced to rely on substitute feeds, which are scarce and firm. Business, however, is light and the market is in a waiting position. Quotations (prompt Western shipment): Rye middlings, $58; standard middlings, $37.65 per ton; oat feed, $22 per ton; barley feed, $41; linseed meal, per ton, $50; corn feed meal, $52 per ton; velvet bean meal, $43.50 per ton; white hominy, $59 per ton; yellow, $58.

Hay and Straw.—There is no further change in the situation today. A rather liberal offering at 33rd street hay warehouse, trade very slow and market in buyers' favor thruout. This is especially true of small bales which are more or less a drug on the market at present. Brooklyn reports on a fair clearance with the exception of B. E. D. T. where a strike of freight handlers has temporarily tied up business. Out-of-the-way stations have had a little call for goods but at generally low and irregular prices. Rye straw barely steady, occasional small sales in Brooklyn making slightly higher than quoted.

Hay.—No. 1, prime, $27@28; No. 2, $23 @25; fancy clover mixed, $23@25.

Straw.—No. 1 rye, $17@18.

Corn.—No. 3, $1.68@1.72.

Oats.—No. 2, white, 87½c.

PHILADELPHIA HAY AND GRAIN

Philadelphia, Pa., June 24, 1918.

Baled Hay and Straw.—Receipts, 120 tons of hay and 3 cars of straw. Offerings of hay were not large, but there was little trading and the market favored buyers. Straw was quiet and unchanged.

Timothy hay, according to location—No. 1 large bales, $28@29; No. 1, small bales, $28@29; No. 2, $25@26; No. 3, $20@23; samples, $14@17; no grade, $8@12; clover mixed hay, light mixed, $26@27; No. 1 do., $24.50@25.50; No. 2 do, $17@19.

Straw.—No. 1 straight rye, $17.50@18; No. 2 do, $16.50@17; No. 1 tangled rye, $15.50@16; No. 2 do, $14.50@15; No. 1 wheat straw, $16; No. 2 do. $15; No. 1 oat straw, $16; No. 2 do, $15.

Corn.—No. 2 yellow, $1.73@1.75.

Oats.—No. 2 white, 88@88½c.

PHILADELPHIA DAIRY MARKET

Philadelphia, Pa., June 24, 1918.

Butter.—As usual on Saturday, there was not much disposition to trade in a wholesale way, but supplies were under good control and prices were well maintained.

Western, fresh, solid-packed creamery, extras, 44½c; high-scoring goods, 45½@47½c; extra firsts, 43½@44c; firsts, 42@48c; seconds, 39@41c; sweet creamery, choice and fancy, 45½@47½c; fair to good, 43½@44½c; ladle packed, as to quality, 33½@35c; packing stock, 30@32c; special fancy brands of prints jobbing at 50@52c; choice, 49c; fair to good, 45@48c

Receipts, as compiled by the Bureau of Markets, 2,136 tubs of butter and 6,539 cases of eggs.

CHEESE MARKETS

The Salamanca, N. Y., cheese market on June 20 quoted 23½ cents per lb. for cheese. Cuba quotations for the same date were the same with no sales made. At Watertown, N. Y., June 22, 7,500 boxes were sold at 22¾ cents.

NEW YORK MILK MARKET

New York City, N. Y., June 24, 1918.

The cool weather is somewhat unseasonable and has caused a poor demand with a consequent large surplus. Some dealers say that they have not made up the losses of other months of the year, altho this is what they count upon doing in June, when supply is bountiful and cost low. The Federal Milk Commission will meet tomorrow. What will happen remains to be seen. It probably will name rates, altho the manufacturers and the Borden Company have not signified their willingness to co-operate.

Receipts of milk and cream in 40-quart cans for week ending June 22 were as follows:

Railroad	Milk	Cream
Erie	36,900	3,825
Susquehanna	5,998	50
West Shore	12,270	1,250
Lackawanna	70,970	3,025
N. Y. Central (long haul)	144,236	3,777
Ontario	43,466	5,037
Lehigh Valley	53,581	3,383
New Haven	4,698	47
Pennsylvania	11,970	290
Other sources	7,960	275
Totals	392,049	20,459
Same week last year	411,097	27,048

Good Summer Eating

Chicken Jelly

Boil a large fowl until tender, seasoning with onion, pepper and salt while cooking. Let remain in both until quite cold, then skin and put the meat thru food chopper. Blend the minced meat thoroly with 3 tablespoons mayonnaise. Measure the broth and add gelatine in proportion of 1 tablespoon to each pint. Turn this jelly into a mold, and when about half set add the minced chicken. When ready to serve, turn out on bed of lettuce, and garnish with parsley or cress.

Rhubarb Jelly and Pineapple

Soak ½ box gelatine in ½ cup cold water until soft, then add 1 pint boiling water, 1 cup sugar, 1 cup lemon juice and the juice of 1 orange. Strain and add ½ cup stewed and sweetened rhubarb and a few drops red vegetable coloring. Pour into small wet molds, and keep on ice till ready to serve. Turn out on rounds of canned pineapple, and serve with whipped cream.

Prune Cream

Remove the stones from stewed prunes, and cut the fruit into small pieces. You should have about ⅔ cup. Soak 1 tablespoon gelatine in ¼ cup cold water and dissolve in 1 cup scalded milk, then add ½ cup sugar. Strain into pan set in larger pan, containing ice water and stir constantly until mixture begins to thicken, then add the whites of 2 eggs beaten stiff, ½ pint heavy cream diluted with ⅓ cup milk and beaten stiff and the cut-up prunes. Turn into mold that has been dipped in cold water, and chill.

Boston Brown Bread

Look at its photo, and tell me if this isn't an appetizing looking war loaf. Take 1 cup cornmeal, 1 cup graham flour, 1 cup barley flour, 1 cup New Orleans molasses and 1 cup milk, 1 teaspoon soda and a pinch of salt. Mix the dry ingredients together and add gradually to the liquids so as to have a smooth batter. Mix thoroly, put into well greased mold and steam 3 hours.

Delicious Boston Brown Bread

Stuffed Egg Salad

Cut hard boiled eggs into lengthwise halves; remove yolks and mash to a pulp, season with salt, pepper, onion juice and a sprinkling of sweet green peppers. Form into balls and fill cavities in whites. Serve with mayonnaise.

Baked Apple With Cream

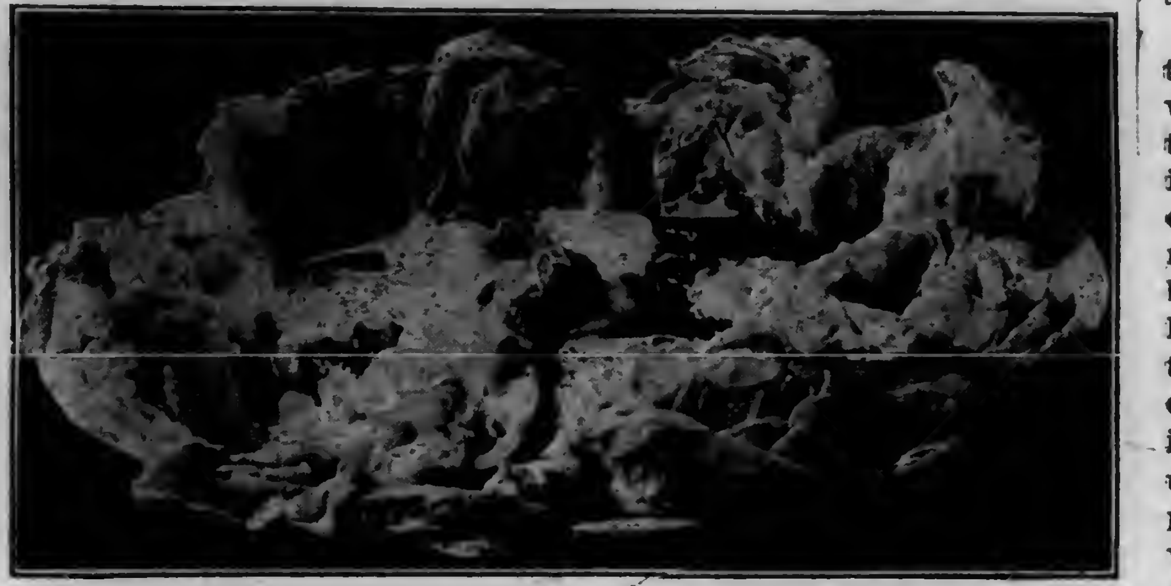
Bake apples slowly in a syrup of sugar and water so they keep their shape. Chill, and serve in a nest of whipped cream, garnishing with almonds.

Cupid Salad

Cut in two 4 oranges, scoop out pulp, leaving shells whole, slice 2 bananas, hull and slice 1 pint strawberries. Place all on ice. Make a dressing of ⅓ cup sugar, 1 large tart apple, 1 egg and 1 tablespoon grape juice as follows: Grate apple and sprinkle with sugar as you grate to keep apple from turning dark, add the grape juice and unbeaten white of egg with egg-beater beat until stiff and light. Scallop tops of the orange cups, with scissors, and tie each pair together with baby ribbon. When ready to serve fill with prepared fruit and heap dressing on top.

Tomato Mold

To 1 quart tomatoes, add salt, pepper and cayenne pepper to taste, and 1 teaspoon sugar. Cook until soft, strain so as to remove all seeds. Have ½ package of gelatine soaked in ¼ cup cold water, and add to tomato. Place in wet mold until firm. Turn out on bed of heart lettuce. Serve with mayonnaise.



Tomato Mold—Appetizing and Nourishing

Tomato and Cream Cheese Salad

Peel and cut tomatoes into thick slices. Arrange on bed of lettuce or cress, and pile high with cream cheese. Sprinkle parsley over top and serve with French dressing.—Mrs. Minnie McCabe, Baltimore Co., Md.

SUGAR BEET SYRUP

"Please give me a recipe for making sugar beet syrup."—W. W. Graybill, Juniata Co., Pa.

Farmers' Bulletin 823, obtained free from the U. S. Department of Agriculture, Washington, D. C., gives full directions not only for the culture of the beets, but for making the syrup at home. However, the Ohio Experiment Station's trials of sugar-beet syrup making on a home scale have indicated that with the ordinary appliances of the home it is rather too laborious to prove a very prolific and satisfactory source of sweetening, and this Station recommends sorghum making instead. However, if you wish to try it, you can get a dark strong-flavored syrup or sugar, which will serve for many home uses. Means of refining it to the white syrup and sugar of commerce are of course too complicated and expensive for home makers. We shall be glad to have you tell our readers about your experience in making it, as well in growing the beets in your locality.

The process is as follows: Cut off the tops and the crowns at the point of the lowest leaf scar; do the latter because thus you will be eliminating the portions that contain much of the mineral matter that makes the syrup bitter and unpalatable. Put the beets in a tub or barrel and cover with cool water. Let soak a few minutes until the dirt is loosened, then scrub with a stiff brush to make thoroly clean. Cut into thin slices—a 3-bladed kraut cutter is recommended for the slicing. Cover the slices with water in proportion of 10 gallons of water per two bushels of slices. If boiling water is used, the beets will reduce it to about the right temperature for extracting the juice from the beets, that is, 158 to 176 degrees Fahrenheit. Cover the barrel with several thicknesses of canvas to keep in the heat. Let soak thus about an hour, shaking the barrel occasionally without uncovering it. Draw off the water, and strain thru several thicknesses of cheesecloth; not necessary to press the slices. The resulting liquid will have a sweetish bitter taste, and be light brown in color. The refuse mash will be relished by chickens or the cattle.

To reduce the juice to syrup, several hours' boiling will be necessary; slow boiling is best. Be careful not to scorch the syrup. And also remove the scum as it forms during the boiling. The resulting syrup will be dark colored and rather strong to the taste of one whose taste is primed by the best quality of maple syrup; however, it is sweet and will answer many sugar needs. It should be sealed while hot in cans to prevent molding before it can be used.

HOME LABOR-SAVING DEVICES

This is the subject of a very interesting, helpful book by Rhea B. Scott. The devices fully described include: Kitchen wall cabinet, ironing board, jelly strainer, dish drainer, fuel boxes, fireless cookers, fruit and vegetable driers, screens, tray wagon, iceless refrigerator, towel racks, blacking-boxes, porch swing, folding canning table, dustless mop, fly-traps, scrubbing chariot to kneel on while cleaning the floor that has room for the pail, etc., besides the worker; also we are told how to make a simple shower and install a simple waterworks system. Especially of interest now, when we are all aiming to make greater use of milk and cheese at home as substitutes for meat, are the devices for making the various soft cheeses; also the home-made butter workers and printers. This book costs only $1 and is for sale by the Pennsylvania Farmer.

Aunt Peggy's Talks

"Mistress Mary, quite contrary,
How does your garden grow?"

Methinks I hear many of you answer, "If it were not for weeds, weeds, weeds, it would grow quite well." With the frequent rains and warm weather, it does make us hustle to keep ahead of them, but with persistent effort we can succeed in spite of rain and weeds. It is better when weather conditions permit to work a while each day rather than leave it until it is a formidable task. By working a while early in forenoon and again late in the afternoon we will not find it so hard a job after all.

It is conceded by many, I fear, that the men do the gardening, when the truth of the matter is, that the garden work on the average farm is done by the wife or daughter. Of course, some farm gardens are planned and planted so as to be worked by horse power, but even with that help we can find enough hand work to do to keep us interested. Do you enjoy working in your garden, or is it a great trial to you? To some of us it has always been a privilege and pleasure. The planting of the seeds with the faith they will germinate and grow teaches a great lesson, and then watching the growth and at last to be rewarded for our patience and work to have the perfect supply of vegetables for our family needs. All know that there are plenty of discouragements in gardening, but the success most always over-balances the discouragement at last. One of the greatest pleasure of my life has been working in the garden, because I like to get close to nature and to see each morning how each plant has grown. If we take an interest in our garden our children will soon form an interest in it also, and ask for a corner of their own. Be sure to let them have it, and encourage them in the work.

In planting the garden, plan to plant at intervals of a few days so as to have fresh vegetables all thru the summer and fall, and not have all ready for use at one time. And plant plentifully so you can can for winter use. We can asparagus, peas, beans, beets and corn. By very late planting of beans (snap), lettuce and radishes, we have these vegetables until heavy frosts come. Use peas and beans as soon as large enough. Don't make the mistake some people do of leaving peas until they harden in the pod; they are tasteless and not nearly so appetizing as when used green. If radishes do not agree with you, try paring the skin off; do this especially for children and they can eat them without any bad effects.—[illegible] Norwood.

MUTILATED TEXT

The Master Mechanic's Story

By Frank H. Spearman

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(Continued from last week)

So the Maje Sampson combination, consisting of Maje as engineer and Delaroo, his prize fireman, slighted by all but quite as brassy as tho it had rights of the first class, dodged the big fellows up and down the line pretty successfully until the Government began pushing troops into the Philippines, and there came days when a Rocky Mountain sheep could hardly have kept out of the way of the extras that tore, hissing and booming, over the mountains for 'Frisco. For a time the traffic came hot; so hot we were pressed to handle it. There was a good bit of skirmishing on the part of the passenger department to get the business, and then tremendous skirmishing in the operating department to deliver the goods. Every broken-down coach in the backyards was scrubbed up for the soldier trains. We aimed to kill just as few as possible of the boys en route to the islands, tho that may have been a mistaken mercy. However, we handled them well; not a man in khaki got away from us in a wreck, and in the height of the push we put more live stock into South Omaha, car for car, than has ever gone in before or since.

It was November, and great weather for running, and when the rails were not springing under the soldiers [illegible] they were humming un- westbound [illegible]ound. Maje Samp- der the steers eastb[illegible] his son, with his beer kegs and his crackers and his 264 and his beknighted fireman, hugged the sidings pretty close that week. Some of the trains had part of the rights and others had the remainder. The 264 and her train took what was left, which threw Maje Sampson most of the time on the worn-out, rundown, scrap rails that made corduroy roads of the passing tracks. Then came the night that Moulton, the Philippine commandant, went thru on his special. With his staff and his baggage and his correspondents and that kind he took one whole train. Syme Crowley pulled them, with Ben Sherer, conductor, and whatever else may be said of that pair, they deliver their trains on time. Maje Sampson left Medicine Bend with Twenty-nine at noon on his regular run and tried to get west.

It was nearing dark when the crew of local freight Twenty-nine heard the dull roar of the Moulton Special speeding thru the canon of the Rat. A passenger train running thru the canon at night comes thru with the far roll of a thousand drums, deepening into a rumble of thunder. Then out and over all comes the threatening purr of the straining engine breaking into a storm of exhausts, until like a rocket the headlight bursts streaming from the black walls, and Moore on the 811, or Mullen with the 818, or Hawksworth in the 1110, tear with a fury of alkali and a sweep of noise over the Butte switch, past caboose and flats and boxes and the 264 like [illegible]ding light. Just a sweep of darkness [illegible] glass and dead varnish.

[illegible]nty-nine, local, was used to [illegible] used to the vanishing tail lights, the measured sinking of the sullen dust, the silence brooding again over the desert with, this night, fifteen minutes more to wait for the east-bound stock train before they dared open the switch. Maje Sampson killed the time by going back to the caboose to talk equities with the conductor. It was no trick for him to put away fifteen minutes discussing the rights of man with himself; and with an angel of a fireman to watch the cab, why not? The 264 standing on the siding was chewing her cud as sweet as an old cow, with maybe a hundred and forty pounds of steam to the right of the dial, maybe a hundred and fifty—I say maybe, because no one but Delaroo ever knew—when the sheep train whistled.

Sheep—nothing but sheep. Car after car after car, rattling down from the Short line behind two spanking big engines. They whistled, hoarse as pirates, for the Butte siding, and, rising the hill a mile west of it, bore down the grade throwing Dannah coal from both stacks like hydraulic gravel.

No one knew or ever will know how it happened. They cat-hauled men on the carpet a week about that switch. The crew of the Moulton Special testified; the crews of the stock train testified; Maje Sampson testified; his conductor and both brakemen testified; the roadmaster and the section boss each testified, [illegible] testified—but how- and their men [illegible] was—whether ever or whatever it [illegible]ctured the Moulton Special fra[illegible] the tongue, or whether the pony o[illegible] lead engine flew the guard, or whether the switch had been opened, or whether, in closing, the slip rail had somehow failed to follow the rod—the double-headed stocker went into that Butte switch, into that Butte siding, into the peaceable old 264 and the Twenty-nine, local, like a lyddite shell, crashing, rearing, ripping, scattering two whole trains into blood and scrap. Destruction, madness, throes, death, silence; then a pyre of dirty smoke, a wall of sickening bleats, and a scream of hissing steam over a thousand sheep caught in the sudden shambles.

There was frightened crawling out of the shattered cabooses, a hurrying up of the stunned crews and a bewildering count of heads. Both engine crews of the stock train had jumped as their train split the switch. The train crews were badly shaken; the head brakeman of the sheep train lay torn in the barbed-wire fencing the right of way; but only one man was missing—the fireman of Twenty-nine—Delaroo.

"Second 86 jumped west switch passing track and went into train 29, engine 264. Bad spill. Delaroo, fireman the 264, missing," wired Sugar Buttes to Medicine Bend a few minutes later.

Neighbor got up there by ten o'clock with both roadmasters and the wrecking outfit. It was dark as a canon on the desert that night. Benedict Morgan's men tore splintered car timber from the debris, and on the knolls back of the siding lighted heaping bonfires that threw a light all night on the dread pile smoking on the desert. They dug by the flame of the fires at the ghastly heap till midnight; then the moon rose, an extra crew arrived from the Bend, and they got the derrick at work. Yet with all the toil when day broke the confusion looked worse confounded. The main line was so hopelessly blocked that at daylight a special with ties and steel was run in to lay a temporary track around the wreck.

"What do I think of it?" muttered Neighbor, when the local operator asked him for a report for Callahan. "I think there's two engines for the scrap in sight—and the 264, if we can ever find anything of her—and about a million sheep to pay for—" Neighbor paused to give an order and survey the frightful scene.

"And Delaroo," repeated the operator. "He wants to know about Delaroo—"

"Missing."

At dawn hot coffee was passed among the wreckers, and shortly after sunrise the McCloud gang arrived with the second derrick. Then the men of the night took hold with a new grip to get into the heart of the pile; to find—if he was there—Delaroo.

None of the McCloud gang knew the man they were hunting for, but the men from the Bend were soon telling them about Maje Sampson's Indian. Not a mute nod he ever gave; not a piece of tobacco he ever passed; not a brief word he ever spoke to one of the battered old hulks who rode and cut and slashed and stormed and drank and cursed with Benedict Morgan, was forgotten then. Every slewed, twisted, weather-beaten, crippled-up, gin-shivered old wreck of a wrecker—they were hard men—had something to say about Delaroo. And with their hair matted and their faces streaked and their shirts daubed and their elbows in blood, they said it—whatever it was, much or little—of [illegible] Delaroo [illegible] generally [illegible]

The picks swung, the derricks creaked, and all day with the heaving and the calling they toiled; but the sun was sinking before they got to the middle of it. Then Benedict Morgan, crawling under the drivers of the hind mogul, partly uncovered, edged out with a set face; he swore he heard breathing. It was alcohol to the veins of the double gang. Neighbor himself went in and heard—and stayed to fasten a grapple to pull the engine truck off the roof of a box car that was jammed over and against the mogul stack.

The big derrick groaned as the slack drew and the truck crashed thru a tier of stays and swung whirling into the clear. A giant wrecker dodged the suspended wheels and raising his axe bit a hole into the jammed roof. Thru that they passed a second grapple, and presently it gave sullenly, toppled back with a crash, and the foremost axman, peering into the opening, saw the heart of the wreck. Bending forward, he picked up something struggling in his arms. They thought it was a man; but it was a sheep, alive and uninjured, under all the horror; that was the breathing they heard. Benedict Morgan threw the man and his burden aside and stepped himself into gap and thru. One started to follow, but the chief of the wreckers waved him back. Close by where the sheep had been freed stood Delaroo. He stood as if with ear alert, so closely did the counterfeit seem the real. So sure was the impression of life that not until Morgan, speaking to the fireman, put his hand on his shoulder did he realize that the Indian stood quite dead just where the shock had caught him in his cab.

Stumbling over the wreckage, they passed him in the silence of the sunset from hand to hand into the open. A big fellow, pallid and scared, tottered after them, and when they laid the dead man down, half fell at his side; it was Maje Sampson.

It surprised everybody the way Maje Sampson went to pieces after Delaroo was killed. The Indian was carried back to the Bend and up to Sampson's and laid out in the God-forsaken parlor; but Maje wasn't any good fixing things up that time. He usually shone on like occasions. He was the comforter of the afflicted to an extraordinary degree; he gave the usual mourner no chance to let up. But now his day was as one that is darkened. When Neighbor went up next night to see about some minor matters connected with the funeral and the precedence of the various dozen orders that were to march, he found Maje Sampson and Martie alone in the darkness of the parlor with the silent Delaroo.

Maje turned to the master mechanic from where Delaroo lay. "Neighbor, you might as well know it now as any time. Don't you say so, Martie? Martie, what do you say?" Martie burst into tears; but thru them Neighbor caught the engineer's broken confession. "Neighbor—I'm color blind." The master mechanic sat stunned.

"True as God's word. You might as well know it now. There's the man that stood between me and the loss of my job. Its been coming on me for two years. He knew it, that's why he stayed in my cab. He stayed because I was color blind. He knowed I'd git ketched the minute a new fireman come in, Neighbor. He watched the signals—Delaroo. [illegible] I'm color blind, God help me." Maje Sampson sat down by the coffin. Martie hushed her crying; the three sat in the darkness.

"It wouldn't worry me so much f it wasn't f'r the family, Neighbor. The woman—and the boys. I ain't much a-savin'; you know that. If you can gi' me a job I can get bread an' butter out of, give it to me. I can't pull a train; my eyes went out with this man here. I wish to God it was me, and him standing over. A man that's color blind, and don't know a thing on God's earth but runnin' an engine, is worse 'n' a dead man."

Neighbor went home thinking.

They buried Delaroo. But even then they were not thru with him. Delaroo had insurance in every order in the Bend, which meant almost every one on earth. There was no end to his benefit certificates, and no known beneficiaries. But when they overhauled his trunk they found every last certificate filed away up to the last paid assessment and the last quarter's dues. Then came a shock. People found out there was a beneficiary. While the fraters were busy making their passes Delaroo had quietly been directing the right honorable recording secretaries to make the benefits run to Neighbor, and so every dollar of his insurance ran. Nobody was more thunderstruck at the discovery than the master mechanic himself.

(Concluded next week)

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Van Wert, O., Feb., 27, 1918
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IRA D. JACKSON

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Chronic Cracked Heels.—I have a horse that has been bothered for a long time with cracked heels. I wish you would prescribe for him? W. S. B., South New Berlin, N. Y.—First of all the hair should be clipped off and the heels kept dry and clean. Before commencing the treatment, they should be washed thoroly with soap and water—once only. Then apply equal parts tincture benzoin compound and tincture iodine. This medicine should be applied with a small brush or piece of cloth on the end of a piece of wood, twice a day for a week or ten days. Then apply the following remedy daily: Dissolve one ounce of tannic acid and two ounces of glycerine in ½ pint of clean water until the heels are well. Give the horse enough grass to keep the bowels open.

Chronic Stringhalt.—I have a ten-year-old horse that is inclined to jerk up both hind legs every time he starts. After he has traveled a few rods it is not so noticeable. What can be done in line of tre[illegible]ment for this kind of a case? [illegible] noticed this jerking of hind leg [illegible] year ago last December. B. K. [illegible] Cory, Pa.—In a chronic case of thi[s] kind, it is doubtful whether the surgical operation called peroneal tenotomy would give relief or not. This surgical operation can be done without casting the horse, but of course a local anasthetic should be used and the work should be done by a competent veterinarian who has had experience. The wound which is made at lower and outside of hock, usually heals in eight or ten days. Then the horse can be put to work.

Unthrifty, Hidebound Horse.—We have a sixteen-year-old horse that remained thin all winter and has never gained in flesh, altho he is well fed and doing only light work. We stable him and he is fed oats, some corn and timothy hay. My neighbor is a fairly good horseman and he says the horse is hidebound and may be troubled with worms. M. S. G., Girard, Pa.—It will do your horse a lot of good to be fed four quarts of oats, a quart of wheat bran and a pint of shelled corn at a feed three times a day. Instead of feeding him hay, let him have plenty of grass and if you do not need to work him, let him run out day and night and have nothing but grass for a week or ten days. Then he will doubtless commence to thrive. Give him one ounce tincture gentian and one ounce tincture cinchona at a dose, twice a day.

Bruised Udder.—We have a four-year-old cow troubled with a bruised udder. We suspect that one of the other cows hooked her as they are inclined to fight and some of them are not dehorned. What had I better apply? H. M. G., Westfield, N. Y.—Dissolve ¼ pound sugar of lead in a gallon of water and add one pint tincture arnica, then apply to bruised quarter, three times a day. If you have any vicious cows with horns you had better dehorn them before they do any more damage.

Loss of Power.—We have a seven-months-old pig that seems to have pretty much lost the use of his hind quarters. Unless he has some assistance he is unable to get up on hind feet. When helped on foot, he can walk fairly well. This ailment, whatever it is has been gradually coming on for the past three weeks. We feed him sweet separator milk and all the corn he wants to eat. J. M., Mt. Pleasant, Pa.—Discontinue feeding him corn, but feed oats, a little oil meal, some tankage and plenty of grass. Apply mustard and water to back and hind quarters, twice a week. Give him five drops of fluid extract nux vomica at a dose in either feed or water, three times a day.

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14—63

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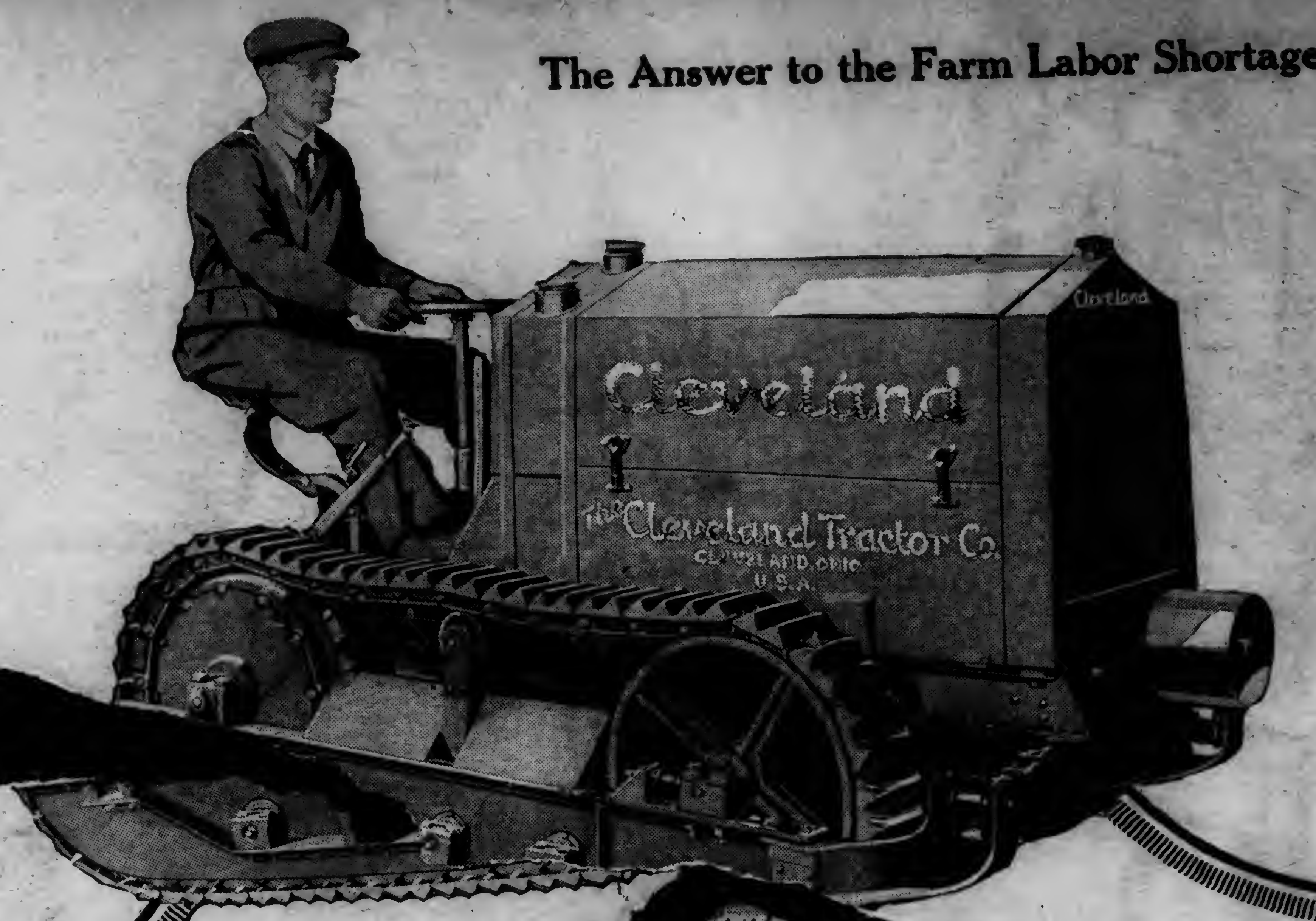
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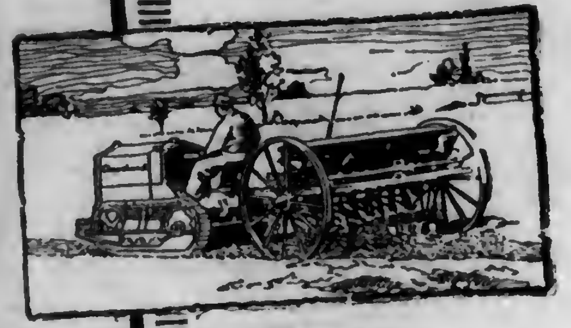
Plowing

Harrowing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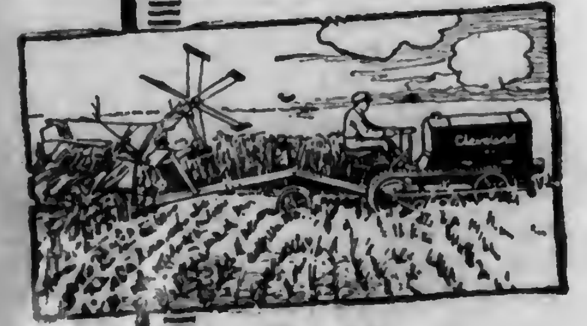
Reaping

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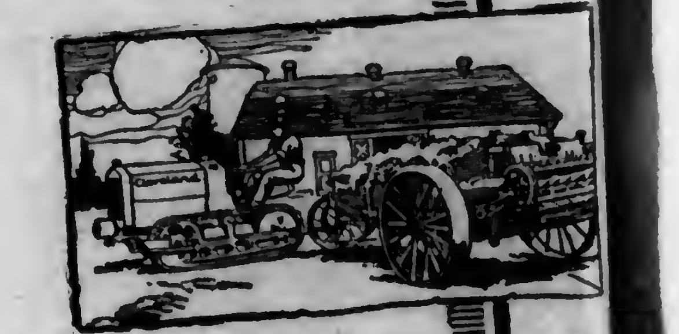
Hauling

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End of
Volume